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***Poster Session 1***

**Thursday 5th November** - 11:45 - 12:45

Discussion of posters Anaesthesia/ITU to Gastroenterology(ANA 1 to GAS 13)

***Poster Session 2***

**Friday 6th November** - 11:45 - 12:45

Discussion of posters Cardiovascular to ENT/Dental (CVS 1 to ENT 8)

# Poster Presentations

THURSDAY 5<sup>TH</sup> NOVEMBER 2009

## ANA 1

### Visual estimation of blood loss - an observational study

**O. Licari, E. Grech**

*Department of Anaesthesia and Intensive Care, Mater Dei Hospital, Malta*

#### Aims:

- Observe how Mater Dei staff fare in visual estimation of blood loss.
- Compare proficiencies in estimation between professions.
- Evaluate if experience improves accuracy
- Guide staff to estimate blood loss.
- Provide an insight of how inaccurate visual estimation is.

#### Methods:

- Permission obtained from director of Anaesthesia to perform study on department premises.
- Feasibility of study discussed with Director of Blood Bank.
- Expired blood and plasma collected over a period of 5 months by the blood bank staff.
- Fliers affixed throughout Mater Dei Hospital advertising the event.
- Emails sent on hospital mail to all staff of MDH.
- On the day of the trial 15 stations were set up.
- In each station a known amount of blood was spilt.
- A clinical scenario was printed next to each station.
- Each attendee was asked to estimate how much blood was lost in each station and write it down.

At end of all stations, he or she was handed a copy of the actual results to compare with estimations and a guide for estimation of blood loss. After the study a guide for visual estimation of blood loss was prepared and displayed in areas of the hospital where blood loss is most likely.

#### Results:

153 volunteer members of staff from all professions attended the trial. Soiled maternity pads, soiled inco pads and small swabs tended to be overestimated in the region of >200% error.

All floor spills were underestimated - the larger the blood pool, the larger the underestimation.

Floor Spill Small	83.44%
Floor Spill Medium	77.52%
Floor Spill Large	67.76%

For statistical analysis, the attendees were divided into three main groups:

Doctors 43%, Nurses 39%, and Others 17%,

The majority of stations were overestimated by doctors, nurses and others alike.

Floor spills tended to be underestimated by all groups. The total accuracy of estimation did not vary significantly between professions.

Doctors did fare statistically better than others in three out of the fifteen scenarios: bleeding in bed pan ( $p=0.04$ ); bleeding after hip replacement. ( $p=0.01$ ); bleeding on inco pad after central line. ( $p=0.01$ ).

Anaesthetists' estimations were statistically more accurate than those of other doctors ( $p=0.033$ ). When house officers were excluded from statistical analysis, difference was no longer statistically significant. ( $p=0.68$ ). Anaesthetists' estimation of blood in large swabs was still statistically significant. ( $p=0.04$ )

**Conclusions:** Visual Estimation very inaccurate: risk of underestimating by up to 67%, risk of overestimating by up to 327%. Smaller volumes tended to be overestimated. Floor spills consistently underestimated. Doctors estimated significantly better than others in 3 out of 15 stations. Anaesthetists were significantly more accurate overall than other doctors. Advantage becomes non significant when house officers are excluded.

## ANA 2

### White fluid from right sided chest drain - a case report

**O. Licari**

*Department of Anaesthesia and Intensive Care, Mater Dei Hospital, Malta*

#### Aims: Case Report

**Results:** Case of a 50 year old lady GR admitted to Gozo General Hospital after a Motor Vehicle Accident. Injuries included a fracture of T11 with bone fragments inside the spinal canal. GR also suffered a bilateral haemothorax. 1 Litre of blood initially came out of the right Chest Drain. 1 day after admission a white fluid was seen coming out of the right chest drain. The differential diagnosis, investigations and treatment of this finding will be discussed in detail.

**Conclusions:** White fluid in chest drain can be either chyle or propofol. The fact that there was a central line on the right side made it possible for the patient to have a propofol leak inside the thoracic cavity. It was also unlikely for the central line insertion to have damaged the thoracic duct (which is on the left).

It was ultimately discovered that damage to the lymphatic ducts had occurred at the level of the fracture in the thoracic spine.

### ANA 3

#### **An audit of the safety and efficacy of the Acute NIV service at the Medical Admissions Ward at Mater Dei Hospital**

*J.P. Caruana Galizia, R. Camilleri*

*Department of Medicine, Mater Dei Hospital, Malta*

**Aims:** To assess the safety and efficacy of the acute NIV service provided at the Medical Admissions Ward at Mater Dei Hospital, more specifically regarding.

- Clinical indications for institution of NIV.
- The presence of a recorded decision on action to be taken in the event of NIV failure.
- Adequate blood gas monitoring of patients treated with NIV.
- Appropriate investigation of patients treated acutely with NIV prior to discharge.
- The outcome of the hospital admission, and complications of NIV.

The above standards were derived from the British Thoracic Society guideline (2002) on NIV in acute respiratory failure.

**Methods:** All patients treated with NIV in the Medical Admissions Ward (EAW1) at Mater Dei Hospital between January 2009 and May 2009 were included in the study - a cohort of 17 patients. Recorded data was collected retrospectively from the patients' case notes. The data was then analysed to evaluate adherence to the above criteria.

**Results:** All patients treated with NIV had a recommended treatment indication. A recorded decision on action to be taken in the event of NIV failure was present in 9 patients (53%). Arterial blood gas analysis was performed in 100% of patients prior to institution of NIV but in only 14 cases (82%) at 1-2 hours and in 11 cases (65%) at 4-6 hours. None of the patients had blood gas analysis on room air or FEV1 measurement prior to discharge. One patient did not tolerate NIV, and complications occurred in another patient. Three patients (18%) died during the hospital admission, of which only one (6%) was due to a respiratory cause. In this case NIV was the ceiling of treatment.

**Conclusions:** "Survival to discharge" rates were comparable to other similar studies, proving that NIV can be applied successfully in this setting. There is room for improvement compared to standards in patient monitoring and in recorded decision making in the event of NIV failure. No pre-discharge investigation of patients treated acutely with NIV is taking place, in spite of which, 8 patients (47%) were discharged on home NIV.

### ANA 4

#### **A retrospective study on the use of non-invasive positive pressure ventilation, in patients with acute type 2 respiratory failure in a respiratory therapy unit of a district general hospital**

*E. Gerada, C. Laroche*

*Department of Medicine, Mater Dei Hospital, Malta,*

*<sup>2</sup> West Suffolk Hospitals, BSE, United Kingdom*

**Aims:** Patients with hypercapnic respiratory failure who fail to respond to conventional measures may be considered for ventilation. Endotracheal intubation and mechanical ventilation is not an option for some patients in whom NIV is the ceiling of care. This study monitored the use of NIV in a district general hospital, and adherence to local & national guidelines.

**Methods:** Patients treated with NIV for acute type 2 failure between July 2008 & July 2009 were identified. Case notes were reviewed and data extracted. The British Thoracic Society NIV audit tool, the WHO Performance status scale and the GOLD criteria for COPD staging were used in this study.

**Results:** 41 patients were included. M:F ratio, 15:26; 85% aged 60-89. Average length of stay in hospital was 11 days. 58% had a performance status of 2-3. Only 8 of the COPD patients had %-predicted FEV1 documented, 7 of these were classified as GOLD stage IV patients. 43.9% and 34.1% had COPD exacerbation and pneumonia respectively, as a primary cause for the respiratory failure. Common co-morbidities included: cardiac disease, COPD itself and acute renal failure. 29.7%, 48.5%, 40.6% did not have an ABG taken in 1-2hrs, 4-6hrs and 8-12hrs of starting NIV, respectively. 55.6% did not get an ABG prior to discharge. 17.1% were transferred to a tertiary centre for O/N sleep study and 39% died during the admission. Only 85.4% had a documented plan if NIV fails. 4.9% did not have any documentation of resuscitation status. 12.8%, 17.9% of patients were initiated on NIV in A&E and EAU respectively. The most common reasons for the 36.6% failure rate in NIV were: lack of clinical benefit and mask intolerance. 81.5% of the patients on NIV were not reviewed on the weekends.

**Conclusions:** NIV could be associated with reduced frequency and length of hospitalization, and an improvement in quality of life; if the guidelines are adhered to. Patients on NIV need to be monitored more closely by ABGs. Documentation is still poor especially with regards to: an action plan if NIV fails, resuscitation status and weaning. The GOLD criteria and WHO performance status could be used as part of a screening tool, to determine the type 2 failure patients who may benefit from home NIV. Daily review of patients on NIV is recommended.

## ANA 5

### Fluid resuscitation in adults with severe burns at risk of secondary Abdominal Compartment Syndrome

*E.A. Azzopardi<sup>1</sup>, S.M. Azzopardi<sup>2</sup>, S. Iyer<sup>3</sup>, B. McWilliams<sup>4</sup>, I.S. Whitaker<sup>4</sup>*

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**Aims:** To construct an evidence-based systematic review on fluid-volume management and its contribution to sACS; the role of urinary bladder pressure monitoring; and awareness of the burns community to sACS.

**Methods:** The evidence on three inter-related concepts was evaluated: fluid-volume management and its contribution to sACS; the role of urinary bladder pressure monitoring; and awareness of the burns community to sACS. Literature published over the last ten years across the major databases was retrieved, and the search strategy was fully reported to reduce the retrieval bias ubiquitous in previous literature. Each article was individually appraised and classified into a framework of evidence, enabling the formulation of specific, graded recommendations.

**Results:** Current best evidence supports recommendations to reduce fluid-volume administered through use of colloids or hypertonic saline especially if the projected resuscitation volume surpasses a 'volume ceiling'. Continuous intra-vesical monitoring is recommended: to guide fluid resuscitation for early diagnosis of sACS; and as a guide to reliability of urine output as indicator of organ perfusion. A priming volume of 75 cm<sup>3</sup> or less is recommended.

**Conclusions:** Fluid resuscitation volume is causative to sACS, especially once a predetermined maximum is reached. Continuous intra-vesical pressure monitoring is a cheap, reliable, user friendly monitoring method recommended in high-risk patients. Poor awareness among the burns community requires urgent dissemination of evidence based information.

## ANA 6

### Addressing MRSA healthcare infections in intensive care

*M.A. Borg<sup>1</sup>, D. Xuereb<sup>1</sup>, C. Abela<sup>2</sup>, E. Scicluna<sup>1</sup>, N. Abela<sup>1</sup>*

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<sup>2</sup>Intensive Therapy Unit, Mater Dei Hospital, Malta

**Aims:** Intensive care patients are at a higher risk of acquiring a healthcare associated infection such as MRSA. Prevention of such infections is often challenging and requires a multifactorial approach. We describe a collaborative effort between the Intensive Care and Infection Control Unit to reduce MRSA infections within the Intensive Care Unit of Mater Dei Hospital.

**Methods:** A collaborative programme was organised together with the ITU consultants and nurses. Regular verbal and printed feedback reports on the incidence of colonization and/or infection with MRSA and other multi-drug resistant organisms within the unit were provided, supplemented by meetings which enabled discussion and clarification of issues related to infection prevention and control. Triclosan washes were added to the daily hygiene routine of all patients admitted to ITU irrespective of their MRSA

status. An MRSA screening and decolonisation protocol was introduced to prevent subsequent emergence of infection and possibly bacteraemia.

**Results:** MRSA carriage was significantly reduced; when it occurred, detection was early in the patients' stay. At the same time, compliance with hand hygiene doubled as a result of the training initiatives. As a result, MRSA bacteraemia rates decreased dramatically, as evident from time series analysis. A concurrent reduction in the number of cases of Acinetobacter infections was also obtained.

**Conclusions:** A multidisciplinary approach was successful to reduce healthcare infections in a high risk intensive care department and can serve as a model for similar improvements in other hospital units.

## PED 1

### Alloimmune neonatal thrombocytopenia (antp)

*P. Soler, V. Said Conti, S. Laspina*

*Department of Paediatrics, Mater Dei Hospital, Malta*

**Aims:** Case report

**Results:** Female infant born with sparse purpuric lesions and severe life threatening thrombocytopenia. The aetiology was due to materno-fetal transplacental transfer of IgG antiplatelet antibody. The baby was successfully treated with maternal platelet transfusion.

**Conclusions:** Studies have shown that ANTP has an incidence of 1 per 2500 live births and carries a significant morbidity and a 10% mortality. This is the first confirmed case in Malta. This condition is very frequently missed. The aim of this poster is to increase awareness of this serious condition.

## PED 2

### The incidence of intraventricular haemorrhage, necrotising enterocolitis and retinopathy in infants

*P. Soler, V. Said Conti, R. Parascandolo*

*Department of Paediatrics, Mater Dei Hospital, Malta,*

**Aims:** This study is the first to investigate the risk of serious morbidity in sick preterm infants admitted to the neonatal intensive care unit in Malta.

**Methods:** Prospective study (non-interventional, descriptive)

**Results:** Incidence of cerebral injury, retinopathy and necrotising enterocolitis in preterm infants were determined and compared with literature review.

**Conclusions:** Relevant recommendations on management issues on the NPICU are presented after analysing the data.

### PED 3

#### **Incidence of chronic lung disease of prematurity in Malta**

*P. Soler, V. Said Conti, R. Parascandalo*

*Department of Paediatrics, Mater Dei Hospital, Malta*

**Aims:** Determination of incidence of CLD in babies < 35 weeks in Malta

**Methods:** Prospective study - Descriptive, Non-interventional, Epidemiological.

**Results:** Cohort of 93 babies < 35 weeks gestational age; 8 babies fulfilled the criteria of CLD; the authors determined the median gestational age, birth weight, duration of respiratory support of the CLD group with the non-CLD group; the incidence of CLD in Malta is determined for the first time and compared with other studies conducted overseas.

**Conclusions:** Local incidence is comparable with literature review risk factors for developing CLD are presented recommendations on multidisciplinary management are presented.

### PED 4

#### **Reference ranges for thyroid function tests in premature infants**

*J. Debattista, N. Formosa, P. Soler, V. Grech*

*Paediatric department, Mater Dei Hospital, Malta*

**Aims:** A cross sectional study to establish reference ranges for thyroid function tests in premature infants after 7th day of life or when clinically stable. These will be compared to other thyroid function reference ranges found in the literature in premature infants and to gestational age.

**Methods:** Free Thyroxine and Thyrotropin measurements by Chemiluminescence Immunoassay Technique were measured in 100 healthy preterm infants born between 168 and 252 gestational days (24 and 36 weeks). Blood tests were taken after the first week of life or when clinically stable. Excel was used to enter and summarise data and for the purposes of charting and analysis T-tests assuming unequal variance were used to compare groups. Spearman rank correlation was used to calculate correlations. A p value <0.05 was taken to represent a statistically significant result.

**Results:** T-tests showed a significant difference between T4 levels for the two groups (<216 days/30+6 weeks gestation and >216 days/30+6 weeks gestation). T4 for the group with gestational age <216 days was shown to be significantly lower than those with gestational age >216 days (p=0.0001) but there was no such difference for TSH. The two groups were amalgamated for the purposes of correlation testing. There was no correlation for TSH with gestational age but free T4 correlated positively with gestational age (r=0.417, p<0.0001). The free T4 reference ranges based on this data were between 10.8 and 21.5 pmol/l for gestation <216 days and 10.6-29.1 pmol/l for gestation >216 days. Mean T4 was 15.7 pmol/l for the <216 day gestation age group. The Mean value for the FT4 values in the >216 day gestation age group was 19.3. The TSH reference range for both gestational groups was between 0.19 and 15.8 ng/dl.

**Conclusions:** There was a positive correlation in FT4 with gestational age but no significant correlation between gestational age at birth and Thyrotropin levels. Free Thyroxine levels in these premature infants were similar to those in older children and adults, once the natal surge of thyrotropin had subsided.

### PED 5

#### **Perinatal Ischaemic Stroke - a diagnostic minefield**

*S. Attard, D. Soler, P. Soler*

*Paediatric department, Mater Dei Hospital, Malta*

**Aims:** There have been important advances in the understanding of perinatal ischaemic stroke. We describe our first two reported cases of this type of stroke with a view to alert clinicians about challenging diagnostic problems associated with these cases.

**Results:** Case 1. AG was a full term female neonate who presented with seizures and feeding difficulties on day 1 of life. Apart from mild macrocephaly, her physical examination was unremarkable. An ultrasound brain scan showed an echogenic lesion in the right parietal lobe, and brain MRI shows an extensive old right sided infarct involving the right basal ganglia as well as a recent extensive left sided infarct involving the left basal ganglia. A heterozygous mutation of the MTHFR gene was found. Factor V Leiden and prothrombin fragments were normal. There was no family history of a clotting problem. High Anti-Cardiolipin antibody levels were found in the mother.

Case 2. HC was female infant who had a normal pregnancy until an antepartum haemorrhage at 30 weeks of gestation. No resuscitation was required and she remained well except for a minor coagulase negative staphylococcal septic episode at 4 weeks of age. A pre-discharge ultrasound scan of the brain showed two large cystic lesions involving both posterior hemispheres. MRI brain scan showed cystic encephalomalacia involving the right parieto-occipital region with a smaller area involving the left parietal lobe. Another mature infarct was also found in the right lateral putamen. A homozygous mutation of the MTHFR gene was found. Factor V Leiden and prothrombin fragments were normal. There was no family history of a clotting problem.

**Conclusions:** These two cases illustrate different types of perinatal ischaemic stroke. Although a long list of associated factors are known, a definitive aetiological diagnosis usually remains elusive. It is current practice to investigate all cases with neuro-imaging, screening for congenital infection, thrombophilia screening and exclusion of cardio-embolic causes. Apart from addressing aetiology in individual patients, these investigations may also help to counsel families regarding risk of recurrence in future pregnancies.

### PED 6

#### **Congenital Diaphragmatic Hernia and Chromosome 18 deletion: differential diagnosis of Fryns Syndrome**

*Paul Soler, John Cauchi*

*Department of Paediatrics, Mater Dei Hospital, Malta*

**Aims:** This is the first reported case of complex syndromic congenital diaphragmatic hernia due to chromosome 18 deletion in Malta which has features in common with Fryns Syndrome.

**Methods:** NA

**Results:** NA

**Conclusions:** This case report underlines the importance of karyotyping and comprehensive diagnostic investigation in all cases of CDH.

## PED 7

### Audit on the Advice on Sleeping Position of Infants in Malta

*S. Attard Montalto, J. Mizzi, R. Pace Parascandalo*

*Department of Paediatrics and Maternity Unit, Mater Dei Hospital, Malta*

**Aims:** The baby's sleeping position is the most important modifiable risk factor in Sudden Infant Death Syndrome (SIDS). The "back to sleep" position is safer than side or prone position.

1. To ascertain what advice midwives and nurses in the Division of Health give to new mothers about the baby's sleeping position;
2. To assess whether their advice has changed following an educational campaign.

**Methods:** A standardised, questionnaire-based, descriptive, and cross-sectional before-after trial was carried out. Midwives and nurses working on the labour ward and postnatal wards were targeted, before and after a series of lectures on SIDS and a focused circular issued by the Department of Health in February 2007.

**Results:** In 2006, 38% of midwives/nurses had advised exclusive back sleeping position for newborn infants and, after the educational campaign, this had increased to 81% in 2007 ( $p < 0.0001$ ).

**Conclusions:** The audit demonstrates a highly significant improvement in the number of midwives/nurses giving the correct advice to new mothers.

## PED 8

### Incorrect advice significantly contributes to low breastfeeding rates in Malta

*S. Attard Montalto, H. Borg, M. Buttigieg Said, E. Clemmer*

*Department of Paediatrics, Division Health, Malta*

**Aims:** Breastfeeding rates in Malta were reviewed for the first 6 months of life and the reasons why mothers discontinued breastfeeding were identified.

**Methods:** Every fourth new mother who chose to breastfeed, to a total of 405, were presented with a telephone questionnaire relating to their feeding experience one week post delivery and again each month up to 6 months. The reasons for stopping breastfeeding were categorised by: Maternal Choice; Medical Reasons; Lack of Information; Social Reasons, Incorrect Advice and No Reason provided.

**Results:** Breastfeeding attrition rates were high with just 152 (38%) of 403 analysable babies still breastfeeding at 6 months. 200 (50%) of the total cohort stopped breastfeeding following incorrect advice from health professionals. Just 14 (3.5%) and 17 (4.2%) of mothers stopped as a result of their own choice or a medical problem, respectively. Of the total of 403, 77 (19%) mothers introduced supplemental bottle feeds in hospital and, of these, 70 (91%) stopped breastfeeding altogether soon afterwards. This compared with just 180 (55%) from 326 who did not introduce bottle feeds in hospital yet subsequently discontinued breastfeeding ( $p < 0.001$ ).

**Conclusions:** Many health professionals in Malta are not sufficiently committed to supporting breastfeeding mothers and artificial feeds are widely recommended without any scientific-based rationale. Incorrect breastfeeding advice is often given prior

to discharge from hospital and, as a result, many Maltese mothers introduce supplemental formula feeds in hospital. This practice is significantly associated with a subsequent cessation in breastfeeding within 6 months from discharge.

## PED 9

### Varicella-associated toxic shock and subcutaneous tissue necrosis

*S. Attard Montalto, M. Bailey, D. Pace*

*Department of Paediatrics, Mater Dei Hospital, Malta*

**Aims:** Case report

**Results:** Varicella is a common mild self-limiting childhood illness which can, however, result in complications especially in neonates (severe neonatal varicella), pregnant women (potentially leading to congenital varicella syndrome in the child) and the immunocompromised. Varicella also tends to be more severe if contracted in adulthood, and those who have had chickenpox may develop shingles later. A vaccine has been available for a number of years and its universal introduction in the USA since 1995 resulted in an impressive decrease in incidence, morbidity and mortality. Prior to vaccination in the USA, 11,000 people were hospitalised per year whilst 100 died from complications of varicella.

We present a case of varicella complicated by toxic shock syndrome together with necrosis of the skin and subcutaneous tissue of the anterior chest. A 2 year and 4 month old girl developed a rash typical of varicella, followed by shock several days later. A scarlatiniform rash was noted together with a large 20cm ecchymosis on the left flank. She required resuscitation with multiple fluid boluses and commenced effective broad spectrum intravenous antibiotics against gram positive and negative organisms. Investigations revealed some impairment of renal function and coagulation, and a CT scan excluded intra abdominal bleeding. Despite successful resolution of the acute stage and continuing intravenous antibiotic therapy for more than 3 weeks, she developed a persistent, tender, warm fluid collection over the left pectoral muscle that eventually had to be aspirated. A large area of surrounding skin and subcutaneous tissue developing marked necrosis that may require plastic surgery in the future.

Serious complications of varicella include bacterial infections which can involve many sites of the body including the skin, subcutaneous tissues, bone, lungs, joints and blood. Direct invasion with the varicella-zoster virus may result in viral pneumonia, bleeding problems, and encephalitis. These together account for 10% of patients hospitalised with varicella having permanent sequelae such as scarring and ataxia.

**Conclusions:** Our case highlights a severe life threatening complication associated with varicella, that can occur even in a previously well child with no obvious underlying disease. The success of universal immunisation in countries such as the US supports the routine inclusion of varicella vaccination in national programmes in other counties including Malta.

## PED 10

### Infection events occurring in tunnelled central venous catheters in Maltese paediatric oncology patients

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<sup>1</sup> Department of Paediatrics, Mater Dei Hospital, Malta, <sup>2</sup> Paediatric Surgical Department, Mater Dei Hospital, Malta

**Aims:** Central venous catheters (CVCs) are essential in the management of paediatric oncology patients. Infection in a CVC is a potential complication, leads to hospitalisation and can be life-threatening. Infection rates for CVCs in paediatric oncology patients have been reported to range from 1.0-4.58 per 1000 device days. The aim of this study is to determine the infection rate in CVCs in Maltese paediatric oncology patients over a defined period of time.

**Methods:** Data regarding events occurring in CVCs inserted in all oncology patients aged 0-16years between 1st August 2002 and 31st December 2007 was recorded on a specifically designed datasheet. This data was recorded prospectively from the patients' clinical notes by the same observer throughout the study. The complete set of data was input in an Excel spreadsheet and analysed.

**Results:** Eighty five CVCs were inserted during this period. Mean catheter life was 238 days. The exit site infection rate was 2.6 exit site infections per 1000 device days and the catheter related blood stream infection rate was 0.84 catheter blood stream infections per 1000 device days. There were no deaths secondary to CVC infections.

**Conclusions:** Our results show that locally we have a low rate of catheter related blood stream infections, when compared to published data. These results depict a high standard of CVC care within the paediatric oncology unit and support our current practice of CVC care. There are no future plans to change our policies with regards management of CVCs.

## PED 11

### A case of unilateral post-varicella intracranial arteriopathy - a case report

S. Attard, P. Debono, D. Soler

Department of Paediatrics, Mater Dei Hospital, Malta

**Aims:** There is strong evidence that Varicella Zoster (VZ) infection is associated with a spectrum of para-infectious neurological disease in children. We describe a case of transient cerebral arteriopathy (TCA) occurring after herpes zoster infection with the aim of increasing awareness about (a) VZ infection as a cause of acute ischaemic stroke (AIS) in children, (b) distinguishing between focal seizures and transient ischaemic attacks (TIAs), and (c) the value of VZ vaccination.

**Results:** A 12 year old girl presented with 2 episodes of left upper and lower TIAs 8 weeks after right sided herpes zoster ophthalmicus which was treated appropriately. MRI brain showed multiple ischaemic infarcts in the right middle cerebral artery territory as well as narrowing of part of the middle cerebral artery. She was treated with aspirin and her attacks resolved. Except for a very mild dyspraxia of the left hand, she remained well. Repeat MRI brain 9 months after the event did not show any new lesions.

**Conclusions:** Transient cerebral arteriopathy accounts for 94% of all AIS in children of which 44% are post-varicella arteriopathy (PVA). Although PVA tends to be non-progressive, this

may however produce permanent disability, which is amenable to prevention by VZ vaccination. Furthermore, there is clear evidence that there is no association between VZ vaccine itself and ischemic stroke.

## PED 12

### The re-use of Hypodermic Needles is associated with recurrent Diabetic Ketoacidosis

N. Formosa, J. Torpiano

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**Aims:** Case Report

**Results:** The use of injection pens greatly facilitates self-administration of insulin by diabetic children or their parents, especially as many individuals consider the use of traditional insulin syringes daunting. It is imperative that proper procedures, as advised by the manufacturer, be followed rigorously. For a variety of reasons, the re-use of disposable needles is absolutely contraindicated. We describe a male child with type 1 diabetes mellitus who required several hospital admissions with recurrent, frequent severe hyperglycaemia and episodes of diabetic ketoacidosis. It transpired that he was using the same hypodermic needle more than once, leading to erratic and, possibly, failure of delivery of insulin. Correction of this basic error resolved the problem completely and permanently.

**Conclusions:** It is vital that all health care professionals be made aware that injection pen hypodermic needles should only be used once and then discarded. All diabetic patients on insulin need to be educated about this simple, yet essential, requirement.

## PED 13

### The Early Management Of Type I Diabetes In Paediatric Ward at Gozo General Hospital

V. Mercieca

Department of Paediatrics, Gozo General Hospital, Gozo

**Aims:** To audit the implementation of the DKA guideline of the Department of Paediatrics in the district hospital serving Gozo.

**Methods:** 10 year retrospective chart review 1998-2008

**Results:** The DKA guideline was utilized thirteen times. In six cases the criteria for a full diagnosis of DKA were present, while there were another seven cases of decompensated diabetes mellitus which failed to satisfy one or more of the criteria - all these patient were hyperglycaemic but did not satisfy acidosis or ketonuria criteria. There were 6 males and 7 females. 2 males and 4 females satisfied full DKA criteria. The average age was 7.69 year range 2-16y.

**Conclusions:** The guideline addresses important issues in fluid and electrolyte management and insulin therapy in cases of DKA. The instructions are clear enough to avoid ambiguity and cover most scenarios that could be encountered during the management of DKA. The quality of the guideline is demonstrated by the high degree of adherence from the first time that it was used. A number of potential suggestions for improvement are made.

## PED 14

### Concurrent Craniopharyngioma and Benign Intracranial Hypertension in a 13 year old girl

M. Buttigieg<sup>1</sup>, N. Galea<sup>1</sup>, R. Farrugia<sup>1</sup>, V. Calvagna<sup>1</sup>, J. Van't Verlaat<sup>2</sup>, J. Vassallo<sup>3</sup>, R. Parascandolo<sup>1</sup>

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**Aims:** Case Report

**Results:** Paediatric craniopharyngiomas are histologically benign neuroepithelial tumours believed to arise from cellular remnants of Rathke's pouch. Such tumours are relatively rare, representing 6-10% of intracranial malignancies in children and adolescents. Benign intracranial hypertension (BIH) is a headache syndrome characterised by raised cerebrospinal fluid (CSF) pressure in the absence of an intracranial mass lesion or ventricular dilatation; normal spinal fluid composition; usually normal findings on neurological examination except for papilloedema; and a normal level of consciousness.

We are reporting a case of an obese 13 year old girl presenting with a two week history of severe frontal headaches associated with vomiting, photophobia, blurred vision and acanthosis nigricans. MRI of the brain revealed a cystic space occupying lesion with cystic areas in the parasellar region with secondary hydrocephalus.

Histology of the excised mass was consistent with a craniopharyngioma. She underwent surgery and post-operatively discharged on hydrocortisone and intranasal desmopressin. Three weeks post-surgery she presented with recurrent occipital headaches, poor visual acuity, a normal MRI brain scan and high CSF pressure and a diagnosis of BIH was made. Treatment involved both medical and surgical interventions in order to improve the persistent headaches and the rapidly deteriorating vision.

**Conclusions:** The aim of this case report is to assess whether there is an association between craniopharyngioma and BIH in children. A review of the literature discusses that many conditions are associated with BIH in children, none of which are convincingly causative, with the exception of medications. This case also highlights that, despite the fact that BIH is described as 'benign', if left untreated it may result in disruption of normal life and can cause significant visual impairment.

## PED 15

### LADY presenting in a young lady

C. Sciberras, N. Mamo

Department of Paediatrics, Mater Dei Hospital, Malta

**Aims:** Latent Auto-immune Diabetes of the Young, a Case Report

**Results:** A young lady at the age of ten presented with nocturnal polyuria. No family history of type one and type two diabetes. No recent viral infections, nor any major life events. No evidence of acanthosis nigricans or any overweight problems. She was in the early stages of puberty. Repeated urinalysis was negative. Normal blood glucose level were all normal during the day. Nocturnal blood glucose levels were abnormally high. Oral glucose tolerance showed a delayed response with a high two hour glucose level. C-peptide level was normal. Anti-insulin antibodies were normal. No evidence of any other related autoimmune diseases.

**Conclusions:** Exercise and diet were the mainstay of the initial treatment plan. Metformin therapy was introduced with very good response. After twelve months she needed a once daily dose of glargine. To regulate the persistent rise in nocturnal glucose level the glargine is being given later in the evening instead of early afternoon.

## PED 16

### Bartter Syndrome - an unusual cause of polyuria and polydipsia

R. Farrugia, J. Torpiano

Department of Paediatrics, Mater Dei Hospital, Malta

**Aims:** Case Report

**Results:** We describe a young girl who was referred to the Paediatric Endocrine Service for investigation of polyuria, polydipsia and failure to thrive. All endocrine tests were normal. Further investigations revealed persistent hypokalaemia and bilateral medullary nephrocalcinosis. These findings, together with important elements in her past medical history, lead to the diagnosis of Bartter syndrome. She was started on oral indomethacin therapy with good clinical response.

**Conclusions:** Bartter syndrome is a rare and treatable, congenital cause of polyuria and polydipsia.

## PED 17

### Uhl's Anomaly and Arrhythmogenic Right Ventricular Dysplasia : A Maltese perspective

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**Aims:** In this poster, we present a Maltese child diagnosed with Uhl's anomaly, a rare condition, and compare him with the 11 local cases of the somewhat commoner and similar disorder, Arrhythmogenic Right Ventricular Dysplasia (ARVD).

**Methods:** A retrospective case notes review of the presentations of the infant with Uhl's anomaly and the local adults with ARVD.

**Results:** In 1952, Henry Uhl described a condition in which there is complete or partial absence of the right ventricular myocardium. In 1979 Fontan described a similar condition which he named Arrhythmogenic Right Ventricular Dysplasia in which there is fibrofatty replacement of the right ventricular myocardium. Congestive cardiac failure is the hallmark symptom of Uhl's anomaly, in contrast in ARVD the commonest symptoms are palpitations, syncope, ventricular tachycardia and sudden death.

Both disorders are very rare with 84 reported cases of Uhl's worldwide with the median age being 15 years. The median age for ARVD is 33 years and around 400 patients have been described so far. Both conditions seem to be sporadic however familial involvement seems to be more obvious in ARVD.

Both conditions are diagnosed by echocardiography or at post-mortem. Treatment is that of heart failure, or with antiarrhythmic drugs. Various surgical repair procedures are now increasingly being used.

**Conclusions:** This poster highlights the local Maltese cases of the uncommon conditions - Uhl's anomaly and Arrhythmogenic Right Ventricular Dysplasia, and discusses the modes of presentation and their management.



## PED 18

### Subaortic stenosis in association with William's Syndrome

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**Aims:** Case Report

**Results:** William's syndrome is a rare condition that is associated with severe cardiovascular manifestations. We report a patient with William's syndrome who in addition to mild supra-aortic stenosis, also has subaortic stenosis, a rare finding in this patient subgroup. We also briefly review the cardiovascular features of William's syndrome.

**Conclusions:** This poster highlights the local case of the rare presentation of William's syndrome with subaortic stenosis and discusses the cardiovascular features of this syndrome.

## PED 19

### Interim prostacyclin therapy for disconnected pulmonary artery

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**Aims:** Case Report

**Results:** We report a 3 month old female infant with a disconnected pulmonary artery who was successfully stabilized on a prostaglandin infusion to allow transfer for surgery in a tertiary centre. The infant presented in heart failure, severe pulmonary hypertension and hypoxaemia. Echocardiography showed an atrial septal defect with bidirectional flow and moderate tricuspid regurgitation. A disconnected pulmonary artery was diagnosed, although an aortopulmonary collateral could not be visualized at this stage. The patient developed severe cyanotic episodes which were relieved with an epoprosterol infusion, while pulmonary hypertension decreased dramatically with a drop in tricuspid regurgitation gradient from the mid-70s to 20s. The patient stabilized sufficiently to allow transfer to a tertiary centre. Cardiac catheterization then showed bilateral ductal stumps with no flow to any vessels. A leash of vessels at the right hilum supplied the right thoracic, internal mammary and subclavian arteries. The proximal right pulmonary artery could not be demonstrated and the distal pulmonary artery was faintly visible at the level of the hilum. At surgery an aortopulmonary collateral was identified supplying the right lung. A reconstruction of the pulmonary artery using a Gortex graft was carried out uneventfully.

**Conclusions:** An epoprosterol infusion was instrumental in reversing severe pulmonary hypertension and stabilizing our patient sufficiently for successful transfer and surgery at a tertiary centre.

## PED 20

### Compliance of prescribed inhaled medication in Maltese asthmatic children

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**Aims:** In asthma, inhaled therapy with bronchodilators and corticosteroids represents the basis for treatment and prevention respectively. Poor compliance with prophylactic medication is a recognized problem in this as well as other conditions requiring

long-term treatment. This study assesses the prevalence of poor compliance with prescribed inhaled medication in Maltese asthmatic children.

**Methods:** 124 children aged between 7 and 14 years attending children's out-patient clinic were assessed between January and June of 2008. A questionnaire was filled in for each patient (Appendix 1-file uploaded).

**Results:** Questionnaires were completed for 124 children with a diagnosis of chronic bronchial asthma attending the paediatric out-patient department. 81 were male (65%) and 43 were female (35%). 65 were between 7-10 years (52%) and 59 between 11 and 14 years of age (48%). All except two patients were using a spacer device, 90% always used a spacer while 10% claimed they used a spacer intermittently. 85 patients (69%) claimed they always took their preventive (inhaled steroid) treatment, 28 (23%) said they took their treatment on most days and 11 (9%) said they only took their treatment intermittently. None were worried because of the potential delirious effects of non-compliance with treatment.

**Conclusions:** Poor compliance places children at risk for problems such as continued disease, complicates the physician-patient relationship, and prevents accurate assessment of the quality of care provided. This audit demonstrates that multiple factors may come between the prescription of an inhaled corticosteroid and the arrival of that medicine at its target organ, the lung and that there is no single solution that will improve its compliance in all patients.

## PED 21

### Cystic fibrosis in Malta

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Department of Paediatrics, Mater Dei Hospital, Malta

**Aims:** Most cases of cystic fibrosis in Malta are diagnosed by sweat testing and/or genetic testing once suggestive clinical features are encountered or when screening family members. However, there have been a number of children in whom the diagnosis was delayed and also some unusual ways of presentation of this condition. These factors, along with the introduction of neonatal screening for cystic fibrosis in the UK, have prompted us to attempt to formalise the genotype and phenotype of cystic fibrosis in Maltese patients.

**Methods:** Retrospective study of Maltese patients diagnosed with cystic fibrosis over the past twenty one years (1987-2008). Patients were identified from the Paediatric Respiratory Visiting Consultant Clinic (held every six months). The relevant data was then obtained from the patients' files, inputted into an Excel spreadsheet and analysed.

**Results:** Fourteen patients from thirteen families were diagnosed over this time period, with 57% being males and 43% females. Their ages range between 0.86 to 21.17 years. The median age at diagnosis was 0.5 years (0.11 - 9) and there is a declining trend in age at diagnosis. The most common presenting symptoms were failure to thrive and cough, either present together or in association with other symptoms. All of our patients are pancreatic insufficient. The mean BMI percentile is 25%. 70% of patients are homozygote for the DF508 mutation. One patient passed away at age sixteen. The median FVC and FEV<sub>1</sub> percentile are 79% and 66% respectively. 46% of patients were positive for *Pseudomonas aeruginosa* during the year 2008, of whom two thirds

are chronic carriers. The second commonest organism cultured from sputum was *Staphylococcus aureus*. None of the patients have had a lung or liver transplantation.

**Conclusions:** Cystic fibrosis is a chronic condition for which early diagnosis is essential to aid preservation of lung function. It is important to continue diagnosing this condition as early as possible, thus helping to prevent complications and leading to an improved quality of life for our patients.

## PED 22

### Do Maltese young asthmatics have a decent quality of life? A patient centred analysis

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**Aims:** Case reports: see results

**Methods:** Qualitative methodology

**Results:** The study will explore whether young people who have been treated for asthma since childhood believe that they have a satisfying health related quality of life. The participants will be asked by means of face-to-face interviews whether they feel enabled to deal with possible physical, emotional, and social impairments arising from asthma and whether they developed asthma management skills as a result of their interactions with doctors and other personnel at hospital. These impairments can include shortness of breath, wheezing and coughing. This can result in limitations in the young people's daily activities such as school, sports and other physical activities. The study will present the participants' own perceptions of how empowered they feel to act on these limitations and the resulting implications of the treatment process on the life-course decisions they make. Glaser and Strauss' (1967) grounded theory strategy will be used to guide data collection and analysis. This involves teasing out categories and subcategories from the data provided so as to arrive at a substantive theory based on how the participants cope in life with asthma. A central aim of asthma treatment is to optimise patients' benefits from treatment. This study will provide relevant data that will add a further essential component of clinical assessment of young people, namely the evaluation of their health-related quality of life.

**Conclusions:** Appraisal of views of services offered to patients suffering with asthma by the patients themselves.

## PED 23

### Applying NICE Guidelines for Atopic Eczema in Maltese Children

C. Sciberras

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**Aims:** Atopic Eczema is a pruritic inflammation of the epidermis and dermis, often (over 2/3) occurring in association with a personal or family history of hay fever, asthma, allergic rhinitis or atopic eczema. NICE recommendations help in the diagnosis and the holistic approach to the management of Eczema.

**Methods:** The prevalence rates for eczema in Maltese children were calculated, together with the sex prevalence and the rates of associated family history of allergic disease. NICE guidelines for the management of eczema in Maltese children were outlined and addressed to the Maltese paediatric population.

**Results:** The prevalence rate for eczema in Maltese children is just below one in five children, 10 - 15% of the childhood population. Eczema accounts for 1 in 30 consultations in the community. Boys are marginally more likely to develop eczema before the age of 2 years as compared to girls. Before the end of the first year, 60% of children suffering from eczema would have had symptoms. By the age of 14 years, 75% would improve. 2/3 of the patient population have associated family history of atopy, and 30 - 50% of children with atopic eczema develop asthma or hay fever later in life.

**Conclusions:** Guidance to parents and training to professionals does help to reduce the physical and emotional morbidity for the child. Basic treatment involves reducing trigger factors and using emollients as the basis of management. Treatment protocols use a stepped approach, reducing the treatment slowly as the clinical picture shows an ebbing flare up. Recommendations include the restriction of use of steroids and antibiotics, the use of non-sedating anti-histaminics, and early referral to the dermatology specialist.

## PED 24

### Ultrasound guided percutaneous insertion of central venous lines in children - outcome measures

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**Aims:** Ultrasound guided percutaneous insertion of central venous Hickmann lines is not widely practised in children. The aim of this study was to review our experience with the technique with respect to insertion of internal jugular Hickman lines.

**Methods:** A prospective database of paediatric patients referred to one of the authors (JC) for insertion of a central venous catheter was maintained. Silastic cuffed central venous lines for chemotherapy were inserted via an ultrasound guided percutaneous technique. The data collected included demographic details, primary diagnosis, indication for catheter insertion, previous catheter insertions, side of catheter placement, cannulation success/no. of attempts, intraoperative complications, length of procedure, postoperative complications and success rates.

**Results:** Forty consecutive Hickman lines and one port were inserted between February 2006 and July 2009. There were 28 males and 13 females. The catheters were predominantly 9F double lumen lines and the right side was cannulated in most cases. Intraoperative complications included 1 arterial puncture and 1 malposition which were recognized and corrected uneventfully.

**Conclusions:** The technique of ultrasound guided percutaneous insertion of central venous lines is safe in children. Reinsertion in both a previously surgically explored or percutaneously cannulated site is feasible. The technique is amenable to use by a paediatric surgeon without specific training in interventional radiology. Ultrasound guided percutaneous insertion of central venous catheters is applicable to a wide paediatric population.

## PED 25

### Bile stained aspirates in neonates on the NPICU: Cause for surgical concern?

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**Aims:** Bilious vomiting is one of the most common manifestations of intestinal obstruction in neonates. Bilious aspirates via a nasogastric tube, on the other hand, are often not associated with surgical disease. The aim of this study was to assess whether the appearance of bile stained aspirates was indeed a cause for surgical concern.

**Methods:** A prospective audit was undertaken of all neonates with a history of bilious aspirates referred to one of the authors (JC) during January 2008 - August 2009. Demographic details, clinical findings, investigations, and final diagnoses were recorded. Subsequent clinical follow-up was performed in the outpatient clinic.

**Results:** 17 consecutive neonates (15 boys, 2 girls) were referred with bile stained aspirates while managed on the NPICU. Median gestational age was 29-30 weeks. No surgical cause for bilious aspirates was found in this cohort of patients and the clinical condition resolved on non-operative management.

**Conclusions:** Although the appearance of bile from the upper gastro-intestinal tract is always a cause for concern, bile stained aspirates do not seem to reflect active surgical disease requiring operative intervention.

## PED 26

### Early hospital discharge increases the risk for late-diagnosis of developmental dysplasia of the hip - an analysis of risk factors

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**Aims:** A neonatal clinical screening programme for DDH operates in South Australia to diagnose DDH as early as possible. However, some cases of DDH are diagnosed late (> 3months of age). The aims of this study were to identify specific risk factors for late diagnosis by comparing early-diagnosed DDH, late-diagnosed DDH, and normal controls in the South Australian population.

**Methods:** There were 1945 children with DDH born between 1988 and 2003, of which 67 cases were late diagnosis (3.4%). Maternal characteristics, pregnancy, and delivery details were analysed, and compared with controls (early-diagnosed DDH and the general population).

**Results:** There was a trimodal pattern of age at presentation with a gradual increase in the incidence of late-diagnosed DDH over the time period in this study. Birthweight <2500 grams, birth in a rural setting, and early hospital discharge following delivery (< 4 days) were significant risk factors for late-diagnosed DDH. Breech presentation and delivery by caesarean section were protective for late-diagnosed DDH.

**Conclusions:** Risk factors for late-diagnosed DDH relate to factors that influence the screening programme. A rigorous population-based hip surveillance programme is important for early diagnosis of DDH.

## PED 27

### Two-stage hypospadias repair with free preputial graft - The spectrum of management

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**Aims:** A one stage hypospadias repair with universal acceptance and consistent results remains an elusive goal. The number of repair techniques reflects the challenging nature of this condition. The aim of this paper is to present our experience with a two-stage repair in 3 different defects in order to illustrate the versatility of this approach.

**Methods:** The two-stage approach involves harvesting a preputial skin graft and inserting it into the ventral aspect of the penis in order to achieve a healthy neo-urethral plate. The plate is tubularised after a period of 6 months. Three boys were identified as suitable for a two-stage hypospadias repair. The first patient had a midshaft hypospadias with an attenuated urethra and chordee. A further patient had a proximal shaft hypospadias and chordee while the third patient had a scrotal hypospadias with severe chordee and bifid scrotum.

**Results:** All first stage grafts healed uneventfully providing a healthy urethral plate allowing tubularisation after a period of 6 months. Apart from a 20% distal wound dehiscence in the patient with the severe defect, there were no other complications.

**Conclusions:** Although 1-stage hypospadias repairs are highly desirable to both patient and surgeon, a two-stage repair with free preputial grafts offers a viable alternative. The technique is applicable to a wide spectrum of defects and is particularly useful when the native urethral plate is deficient or replaced by chordee tissue.

## PED 28

### An Audit of Trauma in Paediatric Patients- The pattern of presentation

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**Aims:** Trauma in children is a major health care preoccupation. In addition, the financial costs incurred in the management of trauma pose a major burden to the health service. The purpose of this audit was to review the circumstances associated with trauma in children within the local context in order to identify features that might assist in prevention. Furthermore, the management was assessed to determine the current use of resources in terms of clinical observation and/or use of imaging modalities with a view to establishing the financial implications.

**Methods:** Between January and December 2008, 97 consecutive patients were admitted with trauma under the care of the author (JC). The case notes were evaluated and pertinent data was extracted.

**Results:** The clinical notes of 97 patients who presented to Mater Dei Hospital with a history of trauma were reviewed. There were 61 boys and 36 girls with an age range of <1year-14 years. There were 2 peak ages of presentation at 1-2 years (20%) and 6-7 years (10%). The household was the most common setting (62%). Eighty two children (80%) had an isolated head injury with 13% sustaining a skull

fracture. Blunt injuries accounted for 93%. 74% of injuries occurred during supervision by an adult. No patients required aggressive resuscitation and 96% were alert on the AVPU scale. Eighty five percent of patients sustained head trauma from falls from a height of <1m. There were 2 patients involved in a MVA as backseat passengers. The vast majority of patients (67%) stayed in hospital for 2 days and all patients were discharged with no sequelae whatsoever (93%).

**Conclusions:** The vast majority of patients require active observation. The management of paediatric trauma patients in the local context satisfies Advanced Paediatric Life Support guidelines. Most injuries in children are avoidable events and occur within the domestic setting. An educational campaign would help to achieve a reduction in the incidence of trauma within this context

### PED 30

#### Utilization of Visual Electrophysiological Investigations in Paediatrics in Malta

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**Aims:** Visual electrophysiology (VE) services, in the form of electroretinography (ERG) and visual evoked potentials (VEP), are delivered through the Neurophysiology Department. Despite their established role in the diagnosis of a range of neurological and / or ophthalmological conditions, VE services remain underutilized in paediatric practice in general. There is no local data about the use of VE services in childhood in Malta. This paper is a retrospective evaluation of the paediatric referrals for ERG and VEP in Malta.

**Methods:** The Neurophysiology Department results database was interrogated looking for all ERG and VEP investigations carried out on paediatric patients during a 3½ year period from Jan 1st 2006 to July 31st 2009. A dataset comprising of sources of referral, types of clinical questions, types of tests performed and results was compiled.

**Results:** During this period, 20 patients had 24 VE investigations. 14 referrals originated from paediatric neurology, 6 from 2 general paediatricians and 4 from the 2 ophthalmologists. There was a sharp increase in referrals from 2007 to 2009. VEP was performed in 18 tests, ERG in 1 test, while VEP and ERG was performed in 5 tests. 13 results were normal while 11 were abnormal. All the abnormal results influenced patient management in some way or another; 2 results called for specific medical treatment for suspected optic neuritis and the remaining 9 results called for other management options. Out of the 13 normal test results, 3 provided important evidence of non-organic visual problems.

**Conclusions:** This paper provides the first report of the use of VE in paediatric practice in Malta. While confirming the scarcity of referrals for VEP and ERG, it shows a significant rise in referrals during the period 2007 to 2009. Although the proportion of referrals of children for VE investigations out of all paediatric ophthalmology or neuro-ophthalmology patients is not known, these numbers come nowhere near the proportion of referrals from other centres. Possible reasons for these findings are discussed.

### PED 31

#### A phase III open randomised controlled trial of a booster dose of a novel haemophilus influenzae type b and neisseria meningitidis serogroup c glycoconjugate vaccine in 12-15 month old children

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**Aims:** To investigate the immunogenicity and safety of a combined Haemophilus influenzae type b and Neisseria meningitidis serogroup C tetanus toxoid conjugate vaccine (Hib-MenC-TT) when given as a booster dose to toddlers aged 12-15 months

**Methods:** A multicentre phase III open randomised controlled trial was carried out in Oxford, UK and in Poland. 12-15 month old healthy children who had been primed with Hib-MenC-TT + DTPa-IPV or MenC-CRM197 + DTPa-IPV-Hib at 2, 3 and 4 months of age were recruited in the booster stage of the trial. 476 participants were vaccinated with Hib-MenC-TT which was given concurrently with a combined measles, mumps and rubella vaccine (MMR). The percentage of participants with seroprotective antibody levels against Hib and MenC was determined 6 weeks after administration of the booster dose of Hib-MenC-TT.

**Results:** Following the Hib-MenC-TT booster dose 94.8% (95% CI 92.4-96.6) of participants achieved rSBA-MenC =1:128 and 100% (95% CI 99.2, 100) had anti-PRP concentrations =1.0µg/ml. Significantly more participants had rSBA-MenC =1:128 after being primed with Hib-MenC-TT in infancy than after MenC-CRM197 (97.7% vs. 86%, respectively; group difference: 11.7%; 95%CI 6.2-19.4). No differences were seen in the solicited local and systemic adverse events between participants primed according to the two different infant schedules.

**Conclusions:** A booster dose of the Hib-MenC-TT vaccine at 12-15 months of age can be used to sustain protection against Hib and MenC beyond the first year of life. Data from this trial support the recent introduction of the Hib-MenC-TT vaccine in the UK immunisation schedule.

## PED 32

### Paediatric CNS inflammatory demyelination - Clinically Isolated Syndromes

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**Aims:** Clinically isolated syndromes (CIS) are members of the central nervous system (CNS) inflammatory demyelinating disease group. There have been important advances in the understanding of this group of conditions, particularly with regards to a number of risk factors contributing to the development of multiple sclerosis. A revised set of consensus definitions have recently been published. We describe four cases of CIS to describe their typical clinical findings and to differentiate these conditions which are associated with a relatively high risk of paediatric multiple sclerosis (MS) from acute demyelinating encephalomyelitis (ADEM) which is associated with a lower risk.

**Results:** Case 1-10 year old boy presented with right sided internuclear ophthalmoplegia. Brain MRI showed a high signal focus at the posterior pons consistent with a CIS. He made an excellent recovery after pulsed methylprednisolone. Case 2 - 7 year old girl presented with mild bilateral optic neuritis. She made an excellent recovery after pulsed methylprednisolone. Case 3 - 12 year old girl presented with two consecutive episodes of unilateral optic neuritis with an interval of 2 months. Both CIS responded completely to methylprednisolone. Case 4 - 13 month old boy presented with transverse myelitis at the level of T11 - L1. He was treated with immunoglobulin and steroids with some response but he continues to show left lower limb weakness.

**Conclusions:** CIS are associated with a higher risk of development of multiple sclerosis. These cases require specialist follow-up to look for relapses as well as new demyelinating lesions on brain MRI. There is evidence of improved outcome with earlier identification and treatment of paediatric MS.

## PED 33

### An analysis of telephone calls made to the paediatric Accident and Emergency Department

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**Aims:** To analyse the importance of calls received by the paediatric A&E clinic at Mater Dei Hospital, Malta.

**Methods:** Data from telephone calls to the paediatric A&E (Accident and Emergency) clinic at Mater Dei Hospital was collected from 2nd September to 18th November 2008. 207 calls were analysed with regard to date of call, time, source, and whether the call was perceived to be justified by the doctor manning the clinic.

**Results:** Of all calls, the overwhelming majority (96%) originated from carers. 95% of all calls were deemed not to be justified in the emergency context. A trend was noted for telephone calls originating from carers to increase after office hours and in weekends and public holidays. Those originating from doctors occurred almost exclusively in the mornings.

**Conclusions:** There exists widespread lack of understanding, mostly from the general public, as to what constitutes an emergency telephone service. The volume of calls received results in frequent interruptions to other services rendered by the paediatric A&E, to the detriment of staff and patients. This study highlights the need for such calls to be filtered before being passed on to paediatric

A&E, and such service may be rendered by primary care providers and allied professionals.

## PED 34

### Abnormal Myelopoiesis in an Infant with Down Syndrome

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**Aims:** Case Report

**Results:** Children with Trisomy 21 are at an increased risk of developing leukaemia, with acute megakaryoblastic leukaemia being the commonest type during the first four years of life. Five to ten percent of newborns with Down syndrome develop a pre-leukaemic clone which originates from myeloid progenitors in the foetal liver. The clone is characterised by a somatic mutation in the gene encoding for the haemopoietic transcription factor GATA1 which is located on the X chromosome and plays a key role in the maturation of erythroid cells and megakaryocytes. This preleukaemia is referred to as transient leukaemia (TL), transient myeloproliferative disease (TMD) or transient abnormal myelopoiesis (TAM) and resolves spontaneously in sixty percent of patients. Recovery coincides with the normal spontaneous regression of liver haematopoiesis. However, about twenty percent of these patients develop subsequent myelodysplasia and/or acute leukaemia in the first three years of life. Myelodysplasia is characterised by thrombocytopaenia and dysplastic changes or fibrosis in the marrow and does not regress spontaneously. It may last for several months or years before progression to acute leukaemia and is highly sensitive to chemotherapy.

**Conclusions:** We are presenting the first Maltese patient diagnosed with transient abnormal myelopoiesis. She presented at two months of age with pallor, failure to thrive and hepatosplenomegaly. A few months later she developed myelodysplasia, necessitating treatment with chemotherapy to prevent progression to overt acute leukaemia.

## PED 35

### Failure of antibiotic prophylaxis resulting in infective endocarditis

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**Aims:** Case report describing the development of subacute infective endocarditis (SABE) with serious sequelae despite appropriate antibiotic prophylaxis following an interventional procedure.

**Introduction:** Infective endocarditis is an endovascular microbial infection of cardiovascular structures or intracardiac foreign bodies. Apart from causing severe valvular insufficiency, it also leads to a variety of systemic complications and remains a diagnostic and therapeutic challenge. Antibiotic prophylaxis has had little effect in reducing its incidence, as reflected in the latest NICE guidelines (March 2008).

**Method:** Case report: A three year old girl presented with a 3/6 ejection systolic murmur at the base of the heart and was found to have a large right coronary artery fistula draining into a dilated right ventricle. This was occluded successfully using an Amplatzer vascular

plug inserted via a femoral artery catheter. Despite having been given cefuroxime peri-procedure, she developed a fluctuating fever three months later, followed by painful spots on the feet, blue discoloration of the toes and a limp due to pain in the left groin. In addition, she had clubbing of toes and fingers, a 2/6 pansystolic murmur at the apex and an absent left femoral pulse. Echocardiography confirmed closure of the fistula and large vegetations on the mitral valve with significant regurgitation. Blood cultures grew *Strep oralis* that responded to appropriate antibiotics administered through a Hickman line over 12 weeks. Nevertheless, the patient developed a large infected thrombus in the left femoral artery, with further embolisation to the left fourth toe, and required a femoral thrombectomy. Although there was excellent clinical recovery at six months follow up, significant mitral and slight aortic regurgitation persist, raising the possibility for further operative repair in the future.

**Conclusion:** SABE remains a significant complication of cardiac interventional techniques, despite appropriate antibiotics, and should be considered in all such patients who develop 'unexplained' symptoms or signs.

## PED 36

### Trends and problems associated with adoptions over a 22-year period

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**Aim/s:** Trends and problems associated with national and international adoptions over a 22-year period, and the impact of the Malta Adoption Medical Protocol will be presented.

**Method/s:** Data was retrieved from the National Adoption and Departmental databases for the period 1987-2009, and assessed for demographic details and 'outcome' including associated problems. The latter were divided into medical, social, bureaucratic and illegal issues. Results were compared for the period before and after the introduction of the Malta Adoptions Medical Protocol in 2000.

**Result/s:** 1144 children were adopted between 1987 till February 2009 and, including 389 after the introduction of National Adoption Medical Protocol. Local unavailability and legal difficulties resulted in 3:1 adopted from overseas, initially Romania, Albania and Pakistan and, more recently, Russia and Ethiopia. The male: female ratio was similar and although 56% were in the 1-4 age range, adoptions in children aged <1 year significantly more likely to be local ( $p < 0.0001$ ). Prior to 2000, observed problems included behavioural (30%), medical (mostly infectious disease (16%) especially hepatitis B and HIV), neurodevelopmental (15%), bureaucratic and associated with criminal activities. After the introduction of the AMP, major medical problems decreased from a total of 25 to 7 cases ( $p = 0.02$ ), and included devolvement delay and fetal alcohol syndrome but no infectious diseases. Illegal practices, social and racial issues remain problematic, as do concerns with the same gender, single parent and upper age limits of prospective parents.

**Conclusion/s:** International adoptions are often the only option for parenthood for many couples. Whilst the National Adoption Protocol has regularised the process and significantly reduced adoptions infectious disease, adoptions remain fraught with complex problems and ongoing vigilance can not be compromised at any stage.

## PHA 1

### Government Formulary List

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**Aims:** To provide updated information through maintenance and evaluation of the medicinal products available in the National Health system, to be used as the unique reference source by the healthcare professionals working within the Government sector.

**Methods:** The last updated list of the medicines available on the Government Formulary List (GFL) was used to:

1. Identify products available within the Government sector and those which have not been listed
2. Change the format and categorisation of the medicines according to the disease category adopted in the British National Formulary (BNF). Details included for all the medicines are: Active Ingredient, Dosage form and strength, Disease category, Anatomical Therapeutic Chemical (ATC) classification system, prescriber criteria, department use, protocol, unlicensed and pink card positive criteria.
3. Create separate formularies for Hospital use and for the Out patients' that is for government and the Pharmacy of your own choice (POYC) scheme, pharmacies.
4. Review of Pink card positive drugs into a further classification: acute (A), chronic (C) and both (B).
5. Review protocols and the prescriber criteria
6. Create a printed document besides the electronic format, with the necessary indexing and table of contents

Data and information was reviewed and discussed, in close collaboration with the Pharmacy section especially with the Clinical Pharmacists and the clinicians involved in the various specialties, such as the cardiovascular drugs. The protocols were amended after the Medicines Approval Section pharmacists identified any shortcomings and inconsistencies in the system. Before the final publishing, the document was reviewed for correctness and completeness of the information.

**Results:** The electronic and printed publication includes seven hundred and seventy eight ( $n=778$ ) items. Five hundred and twenty seven ( $n=527$ ) items in the last edition were updated, ten ( $n=10$ ) of which were completely deleted from the formulary. During this exhaustive exercise the existing protocols were revised and the necessary amendments were made.

**Conclusions:** The Government Formulary List (GFL) is a useful structured resource based on current guidelines mirroring international practice. The considerable changes indicate the need for constant update and reviewing. The GFL will be published yearly.

## PHA 2

### Prescribing of analgesics by community pharmacists

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**Aims:** To develop protocols for the community pharmacist when dealing with pain and to implement a system for protocol prescribing of analgesics.

**Methods:** A pilot study was carried out over 3 months were records for 30 patients (informed consent obtained) regarding their condition and the analgesics being dispensed or prescribed were kept and the six common areas of pain that were identified were considered for the study: dental, dysmenorrhoea, arthritis, musculoskeletal, back pain and headache. A review panel of 20 individuals (healthcare professionals and patients) was set up to validate the protocols. Subsequently the protocols were summarised and formatted in a way to make them user-friendly. After the protocols were amended they are currently being implemented in a community pharmacy for 6 months. Two different sample groups were established: when the protocols were implemented (group 1 n=13) and the other when the protocols are not used by the pharmacist (group 2 n=20). For each group, time taken by the pharmacist to respond to patient request is recorded.

**Results:** Out of the 30 patients in the pilot study 19 were female and 11 were males. The mean age was 57 years and the ages ranged from 15-85 years. The condition that was mostly encountered was that of arthritis. From the review panel it transpired that practicality was a major issue and for this reason the protocols had to be summarised. Pharmacist members of the review panel were willing to use the protocols and the majority of the panel members (18) felt that protocols would have a good outcome on patient care. From the implementation study, mean time taken by the pharmacist with group 1 was five minutes and with group 2 three minutes. For group 1 patients pharmacist showed a mean 96% compliance with the protocols.

**Conclusions:** The developed protocols for pain management and the prescribing of analgesics by the community pharmacists increased minimally the time required by the pharmacist to respond to patients' requests. The high pharmacist compliance with the protocols and the developed system indicate its feasibility and practicality.

### PHA 3 Implementation of the Pharmacy of Your Choice scheme and interprofessional relations

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**Aims:** To evaluate the impact of the Pharmacy Of Your Choice (POYC) scheme on interprofessional relations.

**Methods:** Qualitative observational case studies were carried out in a local community pharmacy, registered in the POYC scheme, to closely monitor cases illustrating interprofessional collaboration between pharmacists and physicians. Observations were carried out on a 3 hour weekly basis for 12 weeks between November 2008 and March 2009 for a total of 36 hours. Case number, date, case overview, pharmacist intervention, interprofessional relation and discussion points were documented.

**Results:** Eleven case studies were recorded. For 4 cases the pharmacist was the first point of contact with a healthcare professional while for 7 cases the patients first contacted the physician. The predominant cases discussed between the pharmacists and physicians involved medication alteration, dose adjustment, patient non-compliance with dosage regimen, and newly added medication (2 cases each). Medication changes

involved statins and angiotensin-II receptor antagonists; dose adjustment involved antiepileptics and angiotensin-II receptor antagonists, whilst patient non-compliance with dosage regimen and newly added medication both involved aspirin and warfarin. Side effect with medication, out of stock medication and query regarding application forms were other issues discussed between the healthcare professionals (1 case each).

**Conclusions:** Communication and collaboration between healthcare professionals is important for the optimal functioning of the POYC scheme. When pharmacists and physicians work together as a team, patient outcome is improved.

### PHA 4 Quantifying pharmacists' activities at Zammit Clapp Hospital

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**Aims:** To carry out a time and motion study by direct observation to identify and quantify activities undertaken by pharmacists at Zammit Clapp Hospital (ZCH).

**Methods:** A data collection form was developed and validated. Pharmacist activities were organised into 3 categories: 'Clinical' (must be performed by a pharmacist), 'Administration' (may be performed by competent non-pharmacist personnel under supervision) and 'Others' (non-pharmacy activities and inactive time). 'Clinical' activities incorporated patient admission, checking ward controlled drugs record book, emergency trolley and patient medication trolley, prescription monitoring, ward round, discussion with health care professionals, patient discharge and other professional activities; 'Administration' activities included checking ward medication stock and medication order. A pilot study was carried out to test the applicability and practicality of the form. In total, 6000 minutes of observation on 18 separate days were conducted and the work activities of 3 pharmacists on 3 wards were observed. Data was analyzed using Microsoft® Excel® 2007 and SPSS® version 16.0 and descriptive statistics were carried out.

**Results:** The time dedicated to 'Clinical' activities was 3636 minutes (60.60%), 'Administration' activities 1646 minutes (27.43%) and 'Others' 718 minutes (11.97%). When considering total time, in minutes, for 'Clinical' and 'Administration' activities, ward round (1348, 22.47%), medication order (1255, 20.92%), patient discharge (723, 12.05%), prescription monitoring (562, 9.37%) and checking ward medication stock (391, 6.52%) were predominant. Out of the 1348 minutes allocated to ward round activities, total time for patient profiling was 545 minutes (mean time = 49.55), actual ward round 668 minutes (mean time = 133.60) and conference 135 minutes (mean time = 67.50).

**Conclusions:** The time and motion study indicated that pharmacists' time is mainly dedicated to clinical activities. However, there is still a large proportion of time taken up by administrative activities, which can be conducted by trained non-pharmacist personnel, allowing more time to be directed to patient care. This will allow development of clinical activities such as retrieval and interpretation of laboratory data, and therapeutic drug monitoring. Yet, hospital pharmacists should be involved in administrative duties to be able to transmit information on availability and accessibility of medicines during therapeutic planning.

## PHA 5

### Policies in a geriatric Hospital Pharmacy

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**Aims:** Policies provide consistency and basis for standardisation of professional services. Policies should be regularly reviewed to reflect the requirements of the ever changing healthcare settings. The aim was to validate pharmacy policies and identify required amendments.

**Methods:** Four pharmacy policies that were adopted at Zammit Clapp Hospital Pharmacy were identified for the validation study. These were: Dispensing of Medications for Patients Admitted on the Wards (DMA), Dispensing of Medications for Discharged Patients (DMD), Amendments in Medications (AM) and Checking of the Emergency Trolley (ET). Tools were developed to validate each one of these policies. The investigator used the tools and observed the procedure followed when dispensing medications to patients admitted on the wards, dispensing medications to discharged patients and changing medications to hospitalized patients for thirty times. The procedure followed when checking the emergency trolley was observed for eighteen times. Twenty-eight out of 55 nurses practising at the hospital were interviewed about their knowledge on the ET policy.

**Results:** Pharmacists showed full compliance with the DMD, AM and ET policies. Pharmacists failed to comply with two steps of the DMA policy. The overall compliance achieved with DMA policy was 92%. Pharmacists showed a 67% compliance with the step requiring checking of drug interactions and 93% compliance with the step requiring checking for other drug-related problems. In addition a step that is included in the DMA policy where the doctors contact pharmacists to inform them of the new admission to prepare required drugs showed an 83% non-compliance. From the study it transpired that the steps required to be carried out by nurses for the ET policy were not being followed. The mean nurses' knowledge about the ET policy was 72% with a range of 51%-91%. Documentation of the checking of the emergency trolley was missing.

**Conclusions:** Following this study, the policy on Checking of the Emergency Trolley was amended and implemented. The steps which showed low compliance in the other policies were discussed with the pharmacy personnel to emphasize requirements of the policies.

## PHA 6

### Evaluating the quality of prescription writing at Zammit Clapp and Karin Grech Hospitals

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**Aims:** To evaluate the quality of prescription writing at Zammit Clapp Hospital (ZCH) and Karin Grech Hospital (KGH). To analyse whether prescribers made aware of deficiencies in prescription writing would issue prescriptions which better met requirements. To screen for differences in prescription writing when two different prescription formats are used.

**Methods:** Two hundred prescriptions (100 prescription forms for free medicinals and 100 blank letterhead prescriptions) dispensed from ZCH and KGH pharmacies were analyzed and scored

retrospectively for the following prescription writing requirements as defined by local regulations: legibility, date, prescriber's name, address, contact details, medical council registration number and signature, patient name, age and locality, medication name, dose, dosage form, quantity and frequency of administration. Following a presentation to ZCH and KGH doctors outlining the results, a further 200 prescriptions were scrutinised.

**Results:** Of the prescriptions reviewed in the first part of the study, all were incomplete. Patient identification was complete in only one prescription, with patient name, age and locality included in 89%, 11% and 29% of prescriptions respectively. Medication information was complete in only 6% of prescriptions. Following the presentation, there was a marked increase (shown in brackets) in the inclusion of the prescriber's medical council registration number (11%), name (6%), age (14%) and locality of patient (14%), dose of medication (14%) and quantity of medicine (9%) to be dispensed. Full patient identification increased to 7% whilst complete medication information increased to 10%. Three prescriptions were 100% complete. Whilst prescriptions in the first part of the study met an average 66% of requirements, this increased to 70% following the presentation. There were higher percentages of prescription forms for free medicinals which included date, registration number of prescriber, patient name and locality, quantity of medication to be dispensed and directions for use compared to blank letterhead prescriptions both before and after the presentation.

**Conclusions:** Deficient prescription writing techniques were identified. Prescriber details, patient details and dosage form of medication were found to be most lacking. Whilst the presentation resulted in improvements in some areas, it did not eliminate deficiencies. Prescriptions pre-printed with the required fields seemed to be more effective at ensuring requirements were met.

## PHA 7

### Assessing the feasibility of computerising patient profiles at Karin Grech Hospital

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**Aims:** To assess the feasibility of implementing a computerised system for pharmacy patient profiles at Karin Grech Hospital (KGH) and to calculate the cost of medication use on a patient basis using the computerised system.

**Methods:** A computer program, designed appropriately for the hospital in previous years, was accessed. The program, a database in Microsoft Access, was updated further. A test run using the computerised program for patient profiles was started in January 2009. The time the pharmacists take to fill in each section in the paper and the computerised patient profiles was recorded using a stop watch. The changes in patients' treatment are updated until the patients are discharged. The cost of the medications used per patient each day was calculated using the computerised program. The cost of a 7-day supply of medications given on discharge is also taken into consideration.

**Results:** Forty-three patients have been recruited in the study to date, of which 42 (16 males, 26 females) have been discharged. The average time taken by the pharmacists to complete the paper profile for one patient is 18 minutes, whereas the average time



taken to complete the computerised profile is 21 minutes. When calculating the cost of medications for the 42 discharged patients, the average cost of medications used per patient per day turned out to be €3.99, with the lowest cost being €0 and the highest cost being €25.12 daily. The average costs of medications used on a daily basis for each patient according to ward are €3.66 (M3); €3.62 (M4) and €4.66 (M8). The cost of medications used per day for males is higher than that for females (€4.29 and €3.80 respectively).

**Conclusions:** The pharmacists are taking longer to fill in the computerised profile when compared to the paper profile. However this extra time taken at entry will make it easier to retrieve information later. When the profiles are computerised they will be readily available to different health professionals at the same time from different locations.

## PHA 8

### Pharmacy services in emergency management

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**Aims:** The aims were to enhance the local emergency management through the input of the hospital pharmacist by developing and validating pharmacy services, in the form of procedural flowcharts and checklists, designed to meet the identified pharmaceutical needs in a group of defined emergencies.

**Methods:** Since the research focused on an area which is still evolving, qualitative research was adopted. A focus group including pharmacists was convened basing selection on their experience and background in the field. The group was used to formulate the study key issues. Together with the investigator the focus group managed to:

- Identify the four emergency themes: civil unrest, natural disasters, man-made disasters and pandemic.
- Compile and validate the scenario analysis-needs assessment.
- Develop and validate the thirteen flowcharts: cardiac arrest, bradycardia, anaphylaxis, acute severe asthma, endotracheal intubation, opioid overdose, pain relief, status epilepticus, hypoglycaemia, minor injuries, burns, nerve agents and cyanide intoxication
- Develop the four pharmacy emergency checklists from the scenario analysis-needs assessment: mitigation, preparedness, response and recovery.

**Results:** Face and content validity of the flowcharts were found to be strong. The themes and items were a well-balanced sample of the content domain. The flowcharts were described as excellent, useful in assisting work decision taking, easy to follow, a good indicator to be used during panic, a memory aid, well-detailed and reliable. The four checklists' academic merit was up to standard, being classified as comprehensive, clear, direct, concrete, fair, understandable, concise, easy to use, and efficient with well-structured categories. The flowcharts and the checklists were found to be applicable to emergency management, to regulate and enhance pharmacy preparedness.

**Conclusions:** The study contributed both a framework and a process for the local scenario to the understanding of how to assess existing processes in this field and at the same time developed

methodologies through international comparative analysis to ultimately improve existing plans and launch new alternatives.

## PHA 9

### Pharmaceutical care of patients undergoing heart surgery

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**Aims:** To evaluate impact of pharmacist intervention on patient compliance with medication and lifestyle modifications in patients who underwent open heart surgery including coronary artery bypass and heart valve surgery.

**Methods:** Fifty patients undergoing open heart surgery were interviewed using the 'Past Medical History' Questionnaire on their day of discharge. Subsequently, pharmacist intervention was carried out on twenty-five patients chosen according to the last digit of their identity card number. This intervention mainly focused on offering advice in simple language about the dosage regimens of the medications prescribed. A chart giving a pictorial explanation of the time of day together with a colorful photograph of each tablet prescribed was used. As part of the intervention, the patient was counselled to comply to paracetamol and exercise training post-cardiac surgery and also on the avoidance of alcohol and smoking during the recovery period. All patients were re-interviewed eight weeks after discharge using the 'Assessing patient compliance after pharmacist intervention' Questionnaire.

**Results:** Out of the fifty patients, there were 13 females and 37 males. The mean age was 62 years and the age range was between 42 and 81 years. The mean percentage compliance scores differ significantly ( $p=0.000$ ) between the control and experimental group patients. Patients in the experimental group had a higher mean percentage compliance score (88%) compared to patients in the control group (55%). The mean percentage compliance scores differ significantly ( $p=0.033$ ) between patients of different education levels. Patients with tertiary education had a higher mean percentage compliance score (98%) compared to patients with secondary (82%) and primary education (68%).

**Conclusions:** Pharmacist intervention led to an overall improvement in the patients' compliance with their medication regimens. The intervention provides patients with sufficient information to help them to achieve optimal patient care from the recommendations and medications prescribed.

## PHA 10

### Pharmaceutical care issues of patients with systemic lupus erythematosus attending the Rheumatology Out-Patient Clinic

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**Aims:** To provide pharmaceutical care sessions to patients with systemic lupus erythematosus attending the Rheumatology Out-Patient Clinic.

**Methods:** An interview was carried out with each patient accepting to participate in the study. During the interview, patients' case notes were screened, a complete drug history was taken and an individualized pharmaceutical care plan was designed for each patient. Drug therapy problems identified by the researcher were classified into classes such as unnecessary drug therapy, inappropriate drug choice, sub-optimum dose, high dose, adverse drug reaction, additional drug required, inappropriate compliance, drug history and other non-drug therapy problems. Drug therapy problems were further classified as actual or potential drug therapy problems.

**Results:** Some thirty patients (males = 2, 6.7% and females = 28, 93.3%) aged between 22 and 64 years (mean age 43.4 yrs, median 40.5 years) agreed to participate in the study. The study population had a mean of 1 co-morbidity each. A total of 69 medications were prescribed with a mean of 6.1 per patient. The most commonly prescribed medication was prednisolone (n=23, 76.7%) followed by calcium and vitamin D supplementation (n=13, 43.3%) and hydroxychloroquine (n=12, 40%). A total of 215 pharmaceutical care issues were identified in the study of which 19% (41) were actual drug therapy problems and 81% (174) were potential drug therapy problems. The most common actual drug therapy problem identified was classified as other non-drug therapy problems (n=19/41) followed by drug history problems (8/41), inappropriate compliance (4/41) and additional drug therapy required (4/41). The most common potential drug therapy problem identified was inappropriate compliance (66/174), followed by other non-drug therapy problems (41/174), drug history problems (55/174) and additional drug therapy needed (20/174). All patients (n=30) in the study recorded an actual or potential problem inappropriate compliance, non-drug therapy problems (failure to obtain the drugs), drug history not tallying with case notes. The following drug therapy problems namely unnecessary drug therapy, inappropriate drug therapy, sub-optimum drug and dose too high were not recorded in any of the 30 patients.

**Conclusions:** The study showed that the individualised pharmaceutical care plan offered by the pharmacist was essential in helping to identify and address drug therapy plan problems and bridge gaps in seamless care.

**References:** Rovers JP, Currie JD, Hagel HP, McDonough RP, Sobotha JL. A practical guide to pharmaceutical care. 1998. Washington: American Pharmaceutical Association:16-25.

#### PHA 11

### Developing a clinical protocol for prescribing and administration of zoledronic acid to patients with Paget's disease - a multidisciplinary team approach and quality assurance system check

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**Aims:** To develop a clinical protocol on prescribing and administration of zoledronic acid to patients with paget's disease with the aim of enhancing seamless care to improve patients' quality of life.

**Methods:** Following the availability of zoledronic acid for the use of Paget's disease, a literature review on administration of zoledronic acid and patient management care was carried out. A protocol prepared by the rheumatology clinic pharmacist was divided into main two sections. Section A covers the prescription of zoledronic acid which is usually carried out at the Rheumatology Out-Patients Clinic. It consists of 3 parts namely i) patient characteristics, ii) clinical dose details and a checklist of monitoring parameters prior to prescription of zoledronic acid and iii) patient counseling. Section B covers the Administration of zoledronic acid and consists of a checklist to be used by the nursing staff administering the drug on the ward.

The protocol was reviewed by an expert panel consisting of 4 consultant rheumatologists, a resident specialist and a rheumatology nurse specialist.

**Results:** The expert panel agreed with the general contents and layout of the protocol. Two suggestions were made namely to include in the clinical protocol the co-administration of:

- i. paracetamol as prophylaxis to reduce incidence of side-effects
- ii. calcium carbonate for at least 10 days as recommended in the summary of product characteristics of zoledronic acid.

There was general consensus that the counseling is carried out by the rheumatology nurse specialist and therefore the third part of Section A was to be filled in by the rheumatology nurse specialist. The protocol was published on the local hospital network for easy access.

**Conclusions:** Developing such protocols aims at optimizing and enhancing a continuous documented seamless care. The protocol serves as a documentation sheet which moves around from the prescribing consultant at the Rheumatology Out-Patient Clinic to the rheumatology specialised nurse who documents counseling issues discussed to the nursing staff on the ward who administer the infusion therapy. Thus in a way the protocol also serve as a quality assurance check during leading to an improved quality of service offered to patients.

#### PHA 12

### Patient knowledge on the management of osteoporosis

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**Aims:** The aim was to identify risk factors amongst osteoporotic patients living in Malta, to assess patients' about their treatment and to prepare a patient information leaflet.

**Methods:** A patient questionnaire was adopted from a previous validated study carried out in Australia<sup>1</sup> and it was distributed to 65 patients attending routine bone mineral density scan. Results were evaluated and statistical analysis was carried out using BMDP. A patient leaflet was designed and distributed to all the patients recruited in the study.

**Results:** Most common risk factors were menopausal/post-menopausal state, female gender, lack of exposure to sunlight and lack of exercise. Patient knowledge was low with a mean of 51.38%. The most common treatment amongst patients was based on bisphosphonates (n=36) followed by strontium ranelate (n=15).

Patients complained of lack of information given by the health care professionals during prescribing and dispensing.

**Conclusions:** The study has showed that education can be the key to improve the present situation in our country especially in patients who are being treated and have poor knowledge on the disease. National campaigns should be encouraged to increase awareness on the disease and the health care professionals should continue to work as a team to ensure that the patient is treated holistically achieving the maximum benefit.

### PHA 13

#### Continuous blood glucose monitoring in the management of diabetes

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**Aims:** The objective was to monitor glycaemic control in type I diabetics using a continuous blood glucose monitoring system (CGMS).

**Methods:** After Medical Ethics Committee approval, 10 type 1 diabetic patients (male 6, female 4, age range 8-18 years, average age 11.4 years) were recruited for the study. The CGMS was implemented for a period of three days for each patient. The sensor was inserted at approximately 5cm from the navel. The CGMS takes a reading every 10 seconds and records an average every 5 minutes for a total of 288 readings per day. During the use of the CGMS patients documented meals, time of self-insulin administration, insulin dosing and results of four daily blood glucose self-monitoring. The results were analyzed using the CGMS Systems Solutions software MMT-7310 version 3.0. Glycaemic control was evaluated and the relevance of time of insulin administration with blood glucose control was assessed.

**Results:** A mean of 3.2 hyperglycaemic events and 2.7 hypoglycaemic events per patient per day were recorded. Hypoglycaemia was defined as a sensor glucose value of <3.5mmol/L for >15 minutes and hyperglycaemia was defined as a sensor glucose value of >8.0mmol/L for >15 minutes. Four patients exhibited a pronounced dawn phenomenon. Three patients had low blood glucose pre-prandial dinner measurements and 8 had very high glucose post-prandial dinner measurements.

**Conclusions:** The method adopted could be implemented amongst diabetic patients to monitor glycaemic control and effect fine-tuning of insulin administration since the low blood glucose levels and the post-prandial blood glucose levels may not be detected by blood glucose self-monitoring or glycosylated haemoglobin testing.

These preliminary results indicate that amongst type 1 diabetic patients review of insulin regimens should be undertaken to consider post-prandial blood glucose level surges and early morning blood glucose surges leading to the dawn phenomenon.

### PHA 14

#### Management of diabetes mellitus

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**Aims:** The objective was to assess the level of diabetes management using condition-specific data and glycosylated haemoglobin testing.

**Methods:** A randomly selected group (81) of diabetic patients attending the Diabetes Clinic were interviewed and subjected to an HbA1c testing (baseline). Patients were followed for 12 months and received advice from the pharmacists. A second HbA1c testing (t1) was repeated for 41 patients at the end of the 12 month study.

**Results:** The age range of the patients was 26-79 years with a mean duration in years with diabetes of 9.69 years and a mean age of onset of diabetes of 50.31 years. The mean %HbA1c level was 7.916 (+/- 2/05) with 23.5% of patients within expected parameters. Co-morbidity assessment: hypertension (54.3%), hypercholesterolaemia (48.1%), heart disease (17.3%), respiratory disease (12.3%), and obesity (48.1%). Out of 81 patients, 24.7% were hospitalised with a diabetes-related problem recently. Only 26% of patients knew the relevance of HbA1c testing. A negative correlation of %HbA1c with relative health status index ( $r=-0.3085$ ,  $p,0.0001$ ), Health Monitoring Index ( $r=0.30800$ ) and Health Awareness index ( $r=-0.4549$ ) was observed. At the second HbA1c testing, the mean %HbA1c level decreased from 8.65 to 7.96.

**Conclusions:** The use of HbA1c and specific disease targets can help the pharmacist to identify patients who require referral to a physician for review of drug therapy. Patients should be advised that strict glycaemic control reduces morbidity and mortality.

### PHA 15

#### Pre-conception Care in Type 1 Diabetics

*K. Sapiano, A. Serracino-Inglott, C. Savona-Ventura, L.M. Azzopardi*

*Department of Pharmacy, Faculty of Medicine and Surgery, University of Malta*

**Aims:** The aim was to assess the level of knowledge and awareness related to pre-conception care among Maltese women with type 1 diabetes mellitus (DM) in the reproductive age.

**Methods:** Thirty seven women, aged 12-30 years with type 1 DM, who presented themselves at the state-managed Diabetes Clinic (recruited by convenience sampling), were administered a questionnaire related to diabetes self-management and pre-conception care. The participants participated at an education intervention and subsequently were asked to complete the same questionnaire. Patient responses before and after the intervention were analyzed using SPSS Version 16.

**Results:** Out of the 37 patients, 27 patients agreed to complete the questionnaire after the intervention thus giving a response rate of 73%. Before the intervention, 26 participants (70%) claimed they did not have any knowledge about the importance of diabetes care before planning a pregnancy. Of the remaining 11 patients (30%), the main reported source of information about diabetes care was the diabetologist ( $n=8$ , 67%). After the intervention, 6 participants (26%), who initially had no pre-conception knowledge, claimed that after the intervention they felt knowledgeable. Eleven participants

(41%) felt that the intervention was not enough for them to change their views. When comparing the pre- and post- intervention means of knowledge of the study population (n=27), it resulted that there was an increase in mean in the majority of patients after the intervention (p=0.000).

**Conclusions:** There was a statistically significant difference between the knowledge of participants before and after the intervention indicating that the intervention provided led to enhanced pre-conceptual care knowledge. At the pre-intervention stage, the respondents lacked awareness on pregnancy-related complications with diabetes and the role of pre-conception counseling in preventing these complications. It is imperative for health professionals to raise these issues with their adolescent patients during routine visits.

#### PHA 16

### Point-of-care testing of cholesterol in community pharmacies

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**Aims:** Point-of-care testing of cholesterol provides a system whereby community pharmacists can monitor management of hyperlipidaemia. The objective of the study was to correlate blood cholesterol results obtained using Accutrend GCT and Reflotron analyser with results from a reference medical diagnostic laboratory. The two analysers are the most commonly available in local community pharmacies.

**Methods:** After approval from the Medical Ethics Committee, 20 volunteers (13 male, 7 female) were recruited to participate in the study. For each patient, duplicate capillary samples of blood were analyzed using Accutrend GCT. Two venous samples were collected, one sample was tested in duplicate using the Reflotron analyser and the other sample was tested in duplicate at the reference medical diagnostic laboratory using a Hitachi analyser.

**Results:** The regression analysis comparing the results obtained by the Hitachi analyser compared to the Accutrend GCT and the Reflotron gave an r value of 0.91 and 0.99 respectively indicating that both the results with both analysers are comparable to the results obtained from the medical diagnostic laboratory using the Hitachi analyser. The percentage agreement between duplicate readings for blood total cholesterol ranged between 84.5%-101.6% for Accutrend GCT, 98.8%-102.8% for the Reflotron and 90.9%-105.4% for the Hitachi analyser.

**Conclusions:** Both Accutrend GCT and Reflotron are reliable blood-cholesterol monitoring devices that could be used to implement blood cholesterol monitoring in a community pharmacy. The Reflotron provides a higher margin of consistency than Accutrend GCT and has the advantage of being a versatile analyser that could be adopted also for other point-of-care testing.

#### PHA 17

### Chronopharmacology in the management of hypertension

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**Aims:** The study compared the effects of morning and evening dosing of atenolol and perindopril on circadian blood pressure (BP) and heart rate (HR) in essential hypertensive patients.

**Methods:** Patients on once daily perindopril (4 females, 8 males, mean age 55 years, dose 8mg/day) and once daily atenolol (4 females, 5 males, age 50 years, dose 50-100mg/day) participated in the study. Patients were on no other antihypertensive medications. Each patient was instructed to take the antihypertensive drug in the morning at 0800h for five days, and then cross over to evening administration at 2000h for another five days. The BP and HR were monitored for 24 hours after each treatment period using an ambulatory blood pressure monitor (A&D TM-2340 and Schiller BR-102 models). Eighteen hypertensive patients who were not receiving any medication and 5 normotensive patients were used as controls. The Wilcoxon test was used to compare the effect of drugs on blood pressure and heart rate in relation to the time of drug administration.

**Results:** Evening administration of atenolol reduced HR significantly during early morning period (0600h-1000h) when compared to morning atenolol administration (p<0.05). Daytime diastolic blood pressure after evening administration of atenolol was significantly lower than evening perindopril administration (p=0.04). Atenolol was found to present more BP fluctuations throughout the day than perindopril. Perindopril presented with better systolic blood pressure control during the early morning hours. However when compared to atenolol, perindopril resulted in an elevated pattern during most of the daytime period till the dosing time.

**Conclusions:** Atenolol administration in the evening produced a significantly lower HR during the early morning period which may be advantageous in reducing early morning cardiovascular risk. When atenolol is being used in combination with another antihypertensive agent, it is worth considering using an evening atenolol dose to benefit from this advantage and use a drug such as perindopril for morning administration. Perindopril offers less fluctuations in blood pressure management during the day.

#### PHA 18

### Patient knowledge on hypercholesterolemia

*A. Serracino-Inglott, L.M. Azzopardi, M. Zarb-Adami, A. Sapiano*

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**Aims:** The aim was to evaluate patient knowledge on hypercholesterolemia and its treatment and to assess impact of pharmacist intervention at the Lipid Clinic, Out-Patient Department.

**Methods:** One hundred and fifty statin-treated patients were recruited by convenience sampling. A scored pre-intervention questionnaire was designed and carried out by interview amongst the subjects to identify patients' baseline knowledge. Subsequently the pharmacist provided education on hypercholesterolaemia

and the use of statins. A leaflet was prepared, evaluated and distributed to the patients. The patients completed again the same questionnaire after the intervention (post-intervention). The post-intervention questionnaire assessed patient knowledge following the pharmacist intervention.

**Results:** Patient demographics: 42% (63) were males, 58% (87) were females, mean age was 59 years (range 32-76 years). A response rate of 71 % was achieved with 98 patients completing both questionnaires. Following the educational intervention by the pharmacist, knowledge regarding the correct action to be taken if muscle pain or tenderness occur during statin therapy increased by 34% ( $p=0$ ). The awareness regarding the normal total blood cholesterol level increased by 22% ( $p=0.0001$ ) and the knowledge regarding the need for low-fat diet consumption during statin therapy increased by 27% ( $p=0$ ).

**Conclusions:** The pharmacist intervention at the Lipid Clinic resulted in an increased patient knowledge on hypercholesterolemia and on the use of statins.

### PHA 19

#### Use and cost of antibiotics in a medical ward

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**Aims:** In an institution, the use of antibiotics and their costs are ongoing issues which require attention. The aims were to quantify conditions which most commonly require antibiotic use in a medical ward, to assess the appropriateness of national guidelines on antibiotic prescribing and to compare the cost per defined daily dose (DDD) of antibiotics between two hospitals, one in Malta and one in Italy.

**Methods:** Antibiotic use during 7 months in two medical wards at St Luke's Hospital in Malta was recorded and adherence with the Maltese Antibiotic Guidelines was assessed. Cost of all antibiotics which were prescribed at St Luke's hospital in Malta and at Monteluce Hospital in Perugia, Italy was collected and the DDDs worked out.

**Results:** During the antibiotic use study in Malta, 20 patients were prescribed antibiotics (mean age 66 years, range 20-87). Antibiotics were most commonly prescribed to treat respiratory infections (11, 55%) followed by gastric conditions, pyrexia and skin conditions (3 each, 15%). Co-amoxiclav was the most common antibiotic prescribed (8, 40%) followed by clarithromycin (6, 30%) and the oral route was preferred in 15 (75%) patients. There were 2 patients who were allergic to penicillin. Six patients were diabetics, 3 had hypertension, 2 had coronary artery disease and 2 had chronic obstructive pulmonary disease. All antibiotics prescribed were found to be according to the Maltese Antibiotic Guidelines. The cost of antibiotics was found to be different in Malta when compared to the cost in Italy. The differences ranged from 0.22 Euro to 51.92 Euro. The highest differences were noted for the parenteral route of administration. Parenteral cefepime costs 51.92 Euro more in Malta whereas parenteral ciprofloxacin costs 32.63 Euro more in Italy. The differences for the oral route were less significant. Oral liquid clarithromycin costs 0.31 Euro more in Malta while oral liquid erythromycin costs 0.22 Euro more in Italy.

**Conclusions:** All antibiotics prescribed were in adherence to the Maltese antibiotic guidelines. Co-amoxiclav was the most commonly prescribed antibiotic. Most of the drugs used in the public sector are relatively more expensive in Malta when compared to Italy.

### PHA 20

#### Perception of alcohol consumption amongst adolescents

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**Aims:** The aims of the study were to evaluate knowledge about alcohol and to develop and evaluate information on alcohol consumption.

**Methods:** Two questionnaires were developed, one directed towards health professionals and the other towards teenagers and youngsters. The questionnaires assessed knowledge on alcohol, awareness of harmful effects, familiarity with legislation and frequency of drink-driving traffic accidents. Face and content validity of the questionnaires were evaluated through a focus group. Test-retest reliability was undertaken and Cronbach's alpha achieved was  $>0.7$ . Together with the local Health Promotion Unit a leaflet was prepared and evaluated.

**Results:** One hundred and six health professionals (53% males, 47% females) and 463 teenagers and youngsters (average age 15 years, 41% males, 60% females) participated in the study. Most health professionals (96%) have met an alcoholic patient and 68% would suggest referral to support groups when they meet a potential alcoholic. Spirits with a mixer were the most preferred alcoholic drink among the youngsters interviewed (33%). For one unit of alcohol, participants aged below 14 years are willing to pay 1.16 Euro while participants aged 15 years and more were willing to pay 2.10 Euro. There were 5.5% of teenagers and youngsters who stated that they had been involved in a traffic accident associated with alcohol once and 3.4% were involved more than once. The participants found the leaflet useful (94%).

**Conclusions:** Health professionals reported a high exposure to alcoholics. Spirits as compared to beer and liquors are the preferred alcoholic drink amongst the majority of teenagers and youngsters. An increase in participants that have been involved in a traffic accident associated with alcohol was identified in this study when compared to another local study carried out in 2000<sup>1</sup>. The educational leaflet prepared in this study was evaluated and rated to be of benefit to teenagers and youngsters. It is now disseminated amongst youngsters by the Health Promotion Unit as part of its educational campaign on alcohol consumption.

## PHA 21

### Distribution of gentamicin in ischaemic peripheries

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**Aims:** To analyse the distribution of gentamicin in patients with Peripheral Arterial Disease (PAD) and to determine whether the concentration of gentamicin present in the periphery is within the therapeutic range.

**Methods:** Approval from the University Research Ethics Committee and Data Protection Officer was obtained. A patient profile form was developed and validated to gather data regarding the patients' demographic characteristics, factors influencing wound healing and specific factors that might affect the distribution of gentamicin. Blood and tissue samples were taken from patients treated with gentamicin and undergoing debridement or amputation after written informed consent was obtained. The blood samples were centrifuged and the supernatant collected. The supernatant and tissue sample were stored at -20°C until the time of analysis. Gentamicin was extracted from the tissue samples using a sodium hydroxide method. The supernatant and tissue extract were analyzed using Fluorescence Polarisation Immunoassay technology.

**Results:** Tissue and blood samples from 35 patients have been collected. Of these, 20 were males and 15 were females, with a mean age of 68 years (range 31 to 91 years). Twenty-two patients had type 2 diabetes, 7 had type 1 diabetes and 6 were not diabetic. Twenty-three patients suffered from Ischaemic Heart Disease. From the 6 patients analysed to date, the dose of gentamicin was 240mg daily and the time of sampling ranged from 1 to 9 hours after gentamicin administration. The serum levels ranged from 1.12 to 9.75µg/mL (mean = 4.42µg/mL), while the tissue concentration ranged from 1.43 to 9.61µg/g (mean 3.80µg/g). Of the patients who were sampled within 2 to 3 hours, patients 2 and 6 had similar serum concentrations (5.72 and 5.17µg/mL respectively), however the tissue concentration of gentamicin for patient 6 was significantly lower (2.38µg/g) to that of patient 2 (5.80µg/g) probably because patient 6 suffered from significant PAD with monophasic waveforms whereas patient 2 had normal triphasic waveforms.

**Conclusions:** These preliminary findings show that the concentration of gentamicin in tissue reflects the concentration found in serum, except when the patient suffers from significant PAD with monophasic waveforms, where the concentration of gentamicin is reduced.

## EDU 1

### Clinical Teaching and the “modern day good doctor”

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**Aims:** There is growing awareness in the medical and lay community that being a good doctor requires more than sound medical knowledge and first-rate clinical skills. Numerous attributes are necessary to providing comprehensive care, including in particular the ability to communicate effectively with patients. A doctor is expected behave in a professional manner and simultaneously care in a humane way, giving due

consideration to the cultural and spiritual background of patients' lives. Moreover, in the Maltese perspective, patient advocacy and comprehensive social/medical education are also required of local physicians. It is becoming apparent that effective clinical teaching through example and proper instruction may go a long way to ingrain the above attributes into today's medical students.

**Methods:** Exposure to real-life situations and clinical problem-based teaching are undoubtedly a superior active form of clinical teaching. With adequate guidance, the learning experience will certainly be more rewarding to all concerned - lecturer/students. Ideally clinical teaching should initiate from the first year in Medical School and continue thereafter. Sustained good clinical teaching may also strengthen the continuum between the Maltese Medical School and Postgraduate Medical Education in the direction of specialisation in either Family Medicine or Hospital Practice.

The continuum mentioned above can be strengthened by applying greater efforts at improving Clinical Medical Education. Greater attention must be directed towards medical students during the clinical years. Clinical teaching can certainly be more fruitful if it is more accountable (for both lecturer and student) and beefed up with more zest.

**Results:** Improved clinical teaching will endear our medical students to the Maltese Medical Service, which helps in no small way in their education. Greater acquaintance with Medical Health Service personnel and its operating modes would improve on the delivery of the clinical service. It is more likely that improved clinical teaching will engender greater loyalty towards the Maltese Health Service.

**Conclusions:** The holy grail of clinical excellence emanates from several factors; however the interaction of clinical teacher and students is of principal importance. This interaction can take the form of mentorship during clinical teaching which may lead to a more holistically formed physician endowed with the attributes required of the “modern day good doctor”.

## EDU 2

### Walking knowledge of anatomy

I. Stabile

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**Aims:** The final Anatomy Examination at the end of Year 2 is notoriously difficult and students prepare assiduously for it. The purpose of this study was to determine how much anatomy incoming Year 3 students remember 3 months after the final examination, so called walking knowledge.

**Methods:** In September 2008, a group of 45 medical students responded to the author's request to participate in a study. To minimize the risk of preparation, they were not informed as to the exact nature of the study until they turned up on the day. After being reassured that the data collected would not be referred back to the particular student, all students consented to participate. The students used an Audience Response System to answer True False questions flashed on the screen. The questions were all selected from the same examination paper sat by these students in May that year (i.e. 3 months earlier). All sections of the examination paper were covered by a minimum of 20 questions each.

**Results:** Using a 45% cut-off, all but 25% of the students “failed” the test paper overall. When examined by sections (or topics), most failed in Head and Neck, Neuroanatomy, Histology,

Embryology and Cell Biology. Most students recalled sufficient details of the upper and lower limb, thorax and abdomen to pass in these sections.

**Conclusions:** The “walking knowledge” of anatomy among incoming year 3 students is poor.

### EDU 3

#### The student anatomy project: curse or blessing?

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**Aims:** Students are assigned an anatomy project in the summer between Years 1 and 2. The project is an attempt to integrate active learning, cooperative learning, and problem solving into undergraduate medical education. Students are provided with list of topics or they may propose topics. They may choose to work singly or in small groups with a supervisor of their choice. The Project and its write-up are assessed by two internal and one external examiner. The purpose of this study was to examine the results obtained by medical and dental students in the anatomy projects between 2005 and 2007.

**Methods:** The marks assigned to each of the projects were analysed and correlated with demographics as well as the final examination marks. Many other factors that influence project mark and final exam mark were not controlled for in this descriptive study.

**Results:** The study included 69 projects carried out by 138 students in 2 consecutive years. Most students chose to undertake dissection projects. Overall, Living Anatomy, Research, and Histology projects obtained higher marks than Dissection projects, while Imaging, Models and Embryology projects obtained lower marks than Dissection projects. In the case of dissection projects, Thorax, Abdo/Pelvis and CNS dissection projects obtained significantly higher marks than the remainder.

There was a statistically significant correlation between the marks obtained in the project and those in the final exam, in that students are more likely to perform better in that section of the exam that they undertook their project in. Moreover, there was a statistically significant correlation between student's mark in the project topic and the student's own mark in that same section of the exam. Students working in groups obtained significantly higher marks than those working alone, but the size of the group and its gender distribution did not appear to influence the result.

**Conclusions:** Apart from the fact that student projects contribute significantly to the department's projected teaching material, students appear to benefit from the exercise. The fact that only 5% of the final mark in the Anatomy Exam is awarded to the project may have affected some students' dedication to the quality of the project. Qualitative data are needed to explore the students' experience of the process.

### EDU 4

#### Analysis of anatomy knowledge in senior medical students and foundation year doctors

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**Aims:** To provide a snapshot of the knowledge of anatomy in senior medical students and Foundation Year doctors, and to determine whether the methods of undergraduate teaching of anatomy (traditional versus modern) have any bearing on the results.

**Methods:** 115 senior medical students from the University of Malta and various UK Universities as well as Foundation Year doctors who graduated from these universities participated. They were asked to identify the carpal bones from a radiograph of a hand under the direct supervision of one of the authors. The carpal bones were chosen as a yardstick for anatomical knowledge since they can be easily examined objectively and are clinically relevant to doctors in many specialities.

**Results:** Participants were divided into 2 groups: Group A (59 participants) had pre-clinical teaching in anatomy using the traditional method of dissection (Universities of Malta and St. Andrew's in Scotland), and group B (56 participants) were taught using a more modern approach (other UK Universities). Only 21 candidates (18.3%) could correctly identify all 8 carpal bones (Group A 14, 23.7% vs. Group B 7, 12.5%). Overall, Group A identified 60.8% of the carpal bones correctly, compared to 48.2% of bones by Group B. The Scaphoid was the most commonly identified bone (88.7%), whilst the Triquetrum the least (31%).

**Conclusions:** Although this is a crude measure of anatomical knowledge, it is an objective test and thus provides an insight into the level of knowledge in medical students and junior doctors. Participants who were taught anatomy using traditional methods scored better than those who learnt anatomy in less detail. However, it is disappointing that less than a fifth of participants could name all 8 bones correctly. Therefore, given the gaps in knowledge of anatomy in both groups, and since knowledge of anatomy is essential in clinical diagnosis and management, teaching of this subject in the clinical years is necessary

### EDU 5

#### Postgraduate health education environment at the Department of Medicine at Mater Dei Hospital

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**Aims:** To evaluate the postgraduate education environment at one of the largest departments at Mater Dei Hospital

**Methods:** All trainees on the staff of the Department of Medicine in July 2008 were asked to take part in a survey involving a self-administered validated and anonymous questionnaire on health education environment (PHEEM).

**Results:** Overall response rate was 57%, (pre-registration house officers: 10% , specialist registrars; 98%). The environment posed plenty of problems for 40% of trainees, and for the rest it had more positive than negative features, with room for improvement.

25% did not consider it a pleasant place to work at, partly because of a strong blame culture. All trainees thought there is no racism and sex discrimination in the post. All trainees think that the quality of accommodation, when on-call is excellent, in contrast with catering facilities; 94% think that they are of a poor standard. All trainees agreed they do not have suitable access to careers advice and counselling opportunities. In the teaching domain there were no strong positives and six out of the fifteen items showed problem areas. 33% of trainees thought that teachers were in need of retraining. The majority thought that trainers misuse learning opportunities and do not give useful feedback. The problem areas for trainees were: absence of protected time, no access to an individualized educational program and working hours which do not conform with the European Working Time Directive. 90% of trainees considered their workload inappropriate and do not feel the training prepares them for the posts of SpR /consultant.

**Conclusions:** A challenging yet supportive educational environment can be difficult to achieve in a busy hospital. Postgraduate training programs are relatively new to Malta, and the findings of this study are a useful baseline for further work. They can also encourage change in a positive direction.

## EDU 6

### What are the communication skills that need to be taught to enable doctors to facilitate disclosure in Maltese women with anxiety and depression?

*D. Cassar*

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**Aims:** To identify factors that encourage or hinder Maltese women to reveal and discuss feelings and emotions of anxiety and depression, in order to tailor the teaching of appropriate and effective communications skills. Unidentified anxiety and depression cause prolonged suffering for patient and family. Women are more prone to anxiety and depression. Patients do not commonly bring up feelings and emotions during consultations. Doctors are less likely to identify psychological problems when these are not mentioned. Specific communication skills are needed.

**Methods:** A qualitative research methodology was used. One hundred and fifty female patients aged 20 to 60 years, consecutive attendees to a general practitioner clinic, were screened for anxiety and depression using the Hospital Anxiety and Depression Scale. Those who scored positive for anxiety and/or depression were selected for an in depth semi structured interview. This was audio recorded, transcribed and qualitative analysis undertaken. The process was stopped when saturation was achieved.

**Results:** Communication skills that enable disclosure included the doctor's welcome, making time, probing sensitive questions, attitude of acceptance, readiness to explain, positivity and unpretentiousness. A trusting doctor patient relationship built over time, confidentiality and availability, enables disclosure. Focus on the patients' spirituality and gaining support of the family during the consultation support disclosure. The patients' feelings for the need to disclose, feelings of relief after some disclosure and feeling the medication/s work were enablers. Barriers to disclosure include stigma of depression, fear of medication and disease, somatisation, negative thoughts, silencing of self and humiliation by others. The patients' belief that the doctor is not there for emotional problems, the doctor's attitude, being a male doctor and misinterpretation of doctor's words

hinder disclosure. The presence of children during the visit and having many people in the waiting room impede the consultation.

**Conclusions:** Good communication skills remain essential to promote disclosure. When caring for women with anxiety and depression in Malta the doctor must acknowledge the cultural and spiritual effects on disclosure.

## EDU 7

### The MD degree course: should entry requirements be reviewed?

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**Aims:** There has recently been public debate regarding entry requirements to the MD course of the University of Malta. It is suggested that current requirements are lowered in order to facilitate admission of more medical students. The aim of this study is to investigate relationships between entry requirements and subsequent performance during the undergraduate medical course in Malta.

**Methods:** Examination results of medical students qualifying between 2001 and 2008 were utilised. Students admitted with qualifications from foreign examination boards were excluded, due to confounding issues of comparability. The study took into account MATSEC A-level Biology and Chemistry, Systems of Knowledge and one other intermediate subject as entry qualifications. Anatomy, Physiology, and Pathology, were taken as non-clinical final examinations, and Medicine, Surgery and Obstetrics/Gynaecology as clinical final examinations. Possession of a previous degree was also taken into account. Examination result grades were converted to integers and analysed using SPSS for Windows 16.

**Results:** 94.1% (n=384) of all students who qualified were eligible for inclusion in the study. Performance in entry qualifications is positively correlated with performance both in the non-clinical (p<0.001) and clinical finals (p<0.001). Performance in both Biology and Chemistry A-levels is positively correlated with performance in all finals (p<0.001). Chemistry is a stronger predictor of future performance than Biology (Pearson Correlation = 0.25 vs. 0.23). Performance in Systems of Knowledge is positively correlated with performance in Anatomy (p<0.001) and Physiology (p<0.001), but not Pathology (p=0.456) or any clinical (p=0.105–0.715) final examination. A previous degree (n=12, 0.03% of students) did not predict future performance (p=0.440).

**Conclusions:** Performance at MATSEC, currently employed as the criterion for medical school entry in Malta, is an accurate predictor of subsequent performance. Therefore, the current entry criteria should continue to be applied.

## EDU 8

### Humanly humane or humanely human?

*A. Scerri*

*Faculty of Medicine and Surgery, University of Malta*

**Aims:** Through this work the author explores the subject of medical humanities, as well as its role in Continuing Professional Development and Patient Care.

**Methods:** Methodology involved review of journals and online resources on subject of Medical Humanities, investigation of its breadth and its relevance to Professional Development, Communication between Professionals, as well as its implicit role in patient care.



**Results:** Medical Humanities involves the application of Medical Sciences to the Humanities, Social Sciences and the Arts, as well as the interpretation of the Arts within a Medical Context.

**Conclusions:** Medical Humanities is a broad term pertaining to the fusion of a number of interdisciplinary fields, namely Humanities, Social Sciences, the Arts, and their application to Medical Education and Practice. The subject has implicit, as well as explicit roles in the understanding of the Human Condition. Hence, it influences illness perspective and Medical Care, making the latter more Humane.

## EDU 9

### Investigating the performance of medical students in anatomy examinations 2002-07

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**Aims:** Medical students are examined four times in anatomy over two years. There is a progress test in January each year (formative) and a final summative examination in June. The purpose of this study was to examine the performance of undergraduate medical students of the University of Malta in anatomy over 4 semesters.

We were specifically interested in the ways in which students' results in the final anatomy exam could be predicted by their performance in the previous anatomy exams. We also investigated whether the strength of this correlation and the students' actual performance were affected by their gender or nationality.

**Methods:** The study involved statistical analysis of de-identified linked examination data for all four examinations in four cohorts of students between 2002 and 2007.

**Results:** There was a strong correlation between the results of the anatomy progress test in January and the final exam in each year, which was independent of the students' gender and nationality. In general, students who do poorly in the final examination at the end of Year 2, also did poorly in previous examinations.

In each exam, performance was related to the students' nationality, with Maltese students performing better than international students. The difference in performance between genders was found to be marginally in favour of female students.

**Conclusions:** The results of the anatomy progress tests can be used as an indication of the students' need for additional teaching and support. This applies to all students. Since in general, international students perform worse than local students in anatomy examinations, they are more likely to benefit from additional support.

## AHP 1

### The Spiritual Dimension in Holistic Care: The role of the Multi Disciplinary Team

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**Aims:** Health care professionals claim to deliver holistic care. This involves caring for the whole person. Body, mind and spirit. The spiritual aspect of care, the focus of this paper, is often overlooked. The aim of this paper is to attempt to answer the following questions in terms of empirical evidence.

- Why should spiritual needs be addressed in patients' / clients' care?
- Why should spiritual care be integrated within health care?

- What impact does spiritual care have on patients/clients?
- Are there any barriers when addressing patients' / clients' spiritual needs?

**Methods:** This literature review examines the relationship between spirituality/religion and health, in the areas of physical, mental, social and behavioural health, nursing and midwifery. A literature search was carried out using Medline, CINAHL and Cochrane, using the keywords: spirituality, religion, holistic care, spiritual care, health, nursing and midwifery, multi-disciplinary team. The studies were analyzed on the basis of rigor to its central question, research design, validity and reliability of quantitative studies, trustworthiness of qualitative studies, results and recommendations of the studies.

**Results:** Most research studies demonstrate a positive correlation between spirituality and aspects of physical, mental and social health, in terms of lower mortality, better immunity, less depression, less addiction, better wellbeing and quality of life. This may be due to spirituality being used as a coping or empowering resource giving meaning to suffering. Other studies report negative effects on health, such as choosing faith instead of the needed medical care. Research documents patients' / clients' desires to have their spiritual needs addressed by physicians and health cares in spite of barriers such as the medical model of care, lack of education in the field of spiritual care and ethical issues.

**Conclusions:** Recommendations of research studies address further research on the effective education of caregivers in particular the identification of competencies in spiritual care as is currently being researched in the U.K. and U.S.A. This is the logical next step in the evolution of this field. A set of spirituality-related competencies will provide guidelines for clinical practice and inform the professional and educational demands.

## AHP 2

### Aiming for a consistent consistency

*S. Ameen, V. Cini, H. Fiorini<sup>1</sup>, D. Formosa Pirota, R. Micallef*  
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**Aims:** Determining the consistency on which a person with dysphagia may continue to be safely nourished orally is one of the speech language pathologist's responsibilities. However, in the case of fluids that need to be thickened, reproducing this consistency repeatedly with a variety of thickening agents and with different beverages and foodstuffs is far from easy. This study aims to establish a set of descriptive and quantitative criteria, using uniform terminology, whereby the required fluid consistency may be approximated, according to the thickening agent and the beverage/foodstuff used.

**Methods:** Four thickening agents dispensed locally were studied. The properties of measured amounts of the respective thickeners mixed with a constant volume of water, at a constant temperature, were studied and compared by four SLPs. Equivalent consistencies across thickening agents were established. The procedure was repeated to test intra-rater reliability, and it was then tested again with a further 6 SLPs to ensure inter-rater reliability. The different consistencies obtained were compared to widely available commercial products to serve as target consistency.

**Results:** This method led to five different consistencies being differentiated which could be used in the management of dysphagic clients. Uniform terminology was agreed to reduce subjective

ambiguity. Guidelines on how to obtain each consistency were formulated in a user friendly tabulated form

**Conclusion:** The method used proved to be simple, practical and reproducible. The guidelines obtained will facilitate meeting SLPs' recommendations with regards to consistency, and they will aid compliance by carers and clients. They will also encourage uniformity across settings and facilitate transition from one care setting to another. Furthermore, the stages will serve as a means to monitor functional change in the individual

### AHP 3

#### Poster withdrawn

### AHP 4

#### A comparative study of Maltese maternal child-directed-speech of two-year old children manifesting specific language delay with chronological-age and language-age matched children.

*Elayne Azzopardi*

*Speech and Language Department, Malta*

**Aims:** The aim of the study is to identify potential differences between Maltese-speaking two-year-old children with specific language delay and those with normal language development.

**Methods:** A comparative design is used to identify statistically significant differences between the experimental group (children with specific language delay) and two control groups (chronological age-matched and language-age matched groups). All participants were audio-recorded in two contexts (structured and unstructured) for 15min each, 10min of which were then analysed. Data analysis observed linguistic perspectives that included pragmatic features, sentence types and other linguistic characteristics: such as mean length of utterance, use of nouns, verbs and adjectives. All ethical considerations and permissions have been sought and obtained.

**Results:** Results indicated that mothers of children with specific language delay tend to perform differently when compared with the chronological-age control group. Maternal child-directed speech of children with specific language delay was similar to that addressed to the language-age control group.

**Conclusions:** Implications for assessment and intervention to aid speech-language pathologists working with Maltese-speaking mothers of children with specific language delay were outlined. A need for future research and suggestions are included to enhance parental involvement in paediatric speech and language pathology service delivery.

### AHP 5

#### A normative needs assessment for occupational therapy services in primary Health Care

*S. Vella*

*Occupational Therapy Department, Karin Grech / St. Luke's Hospital, Malta*

**Aims:** The aim of the study was to investigate if there is a normative need to introduce Occupational Therapy at Primary Care Level.

**Methods:** The normative needs assessment was carried out in three consecutive stages: a postal questionnaire (GP=70) working in the health centres in Malta; 3 individual interviews with health care professionals at corporate level and three focus groups with three categorical groups of participants 6 adults with diverse disabilities; 6 OT's (4 working in NHS ; 2 working in NGO's) and 6 various health care professionals that are established in the community.

**Results:** The results from this study identified the possibility was for the OT profession to take lead into making itself more visible and move closer into the community. OT interventions should include vocational rehabilitation, driving assessment, public building accessibility and outdoor mobility aiming at increasing social participation of adults with disability. The OT profession needs to create a marketing strategy through the local association targeting service users and professionals alike.

**Conclusions:** Further more the study indicated possible changes to be introduced in the health organization that may lead to seamless services and continuity of care between the three levels of health care.

### AHP 6

#### So others may live -The Perceptions, Thoughts and Fears of Emergency First Responders in Crisis Situations

*S. Savona Ventura*

*Department of Psychology, University of Malta*

The study was mainly concerned with understanding and describing the thoughts and emotions of Emergency First Responders, who as professionals must expose themselves to dangerous situations. The research inquired how these workers deal with the stresses of their job, and the way it effects their personal life. Given that the focus was on their unique subjective experience, a qualitative stance was employed and data was obtained through the use of semi-structured interviews. The sample consisted of 8 emergency responders; 4 rescuers from the Search and Rescue Section at the Armed Forces of Malta, and 4 ambulance personnel from the Accident and Emergency Department at Mater Dei Hospital. The findings suggested that the physical health, and emotional well-being of emergency responders, appear to be compromised by accident and emergency work and other stressors of their job. Although they emphasised that organisational factors together with the judgment and scrutiny of the public are more stressful than the emergency itself, lack of control over the situation and risk-taking of an emergency also pose risk to burnout. While some admit to enjoying the unpredictability of their job, discovering coping mechanisms to deal with this stress, as well as having the necessary characteristics to carry out this job, is critical and vital to their well-being and their future career. The study concludes that a rich social support system is necessary for the maintenance of these workers and thus rescuers should be given the appropriate psychological help. The aim of the study was to create a greater awareness so as to give emergency first responders the acknowledgement they deserve.

## AHP 7

### Designing and implementing a musculoskeletal disorder self-risk assessment tool for health care professionals

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Physiotherapy Department, Karin Grech Hospital

#### Aims:

1. Design a tool which could be utilised by nurses to identify their level of risk towards musculoskeletal disorders through an objective scale
2. To design a tool which would provide basic advice on how to avoid such injuries in order to facilitate better working practices

**Methods:** A self risk assessment tool was designed by means of a systematic review of recent relevant research papers, this included twelve questions, each relating to an individual factor known to precipitate musculoskeletal disorders (MSDs) in health care professionals. The questionnaire was then presented to 22 randomly selected nurses working at Zammit Clapp Hospital, who were asked to complete the tool.

Each risk factor was given a score of one if it had been encountered, or a score of zero if it had not been encountered. The tool therefore carried a minimum score of zero (no risk), and a maximum score of twelve (high risk). The participants were then asked if they were suffering from any musculoskeletal pain, and to rate this on a visual analogue scale (VAS), with a score of 10 indicating an indescribable amount of pain. The scores from the tool and the VAS were then correlated.

The tool was then placed in visible strategic areas around the ward which the nurses are known to frequent, their use was subsequently encouraged. One month later, participants were again asked to complete the tool and VAS.

**Results:** A statistically significant association was found between scores on the tool and VAS scores. Of the 22 nurses studied, 18 were followed up. Twelve had originally complained of pain, this number dropping to five after the one month intervention. Average scores on the tool and VAS also decreased.

**Conclusions:** The intervention was deemed a success on two fronts: the designed tool was deemed to predict the incidence of MSD pain in nurses. Secondly, the introduction of this tool decreased nurses' exposure to MSD risk factors and was coupled with a reduction in MSD pain in the short term.

## FAM 1

### Quality of referral letters for patient's referral to hospital

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Department of Medicine, Mater Dei Hospital, Malta

**Aims:** Communication with colleagues and patients is an important component of high quality medical care. Referral tickets constitute a significant part of any health care system's communication workload. The purpose of this standards-based audit was to prospectively audit the quality of tickets referring inpatients and outpatients to the Department of Medicine under the care of a medical firm by:

- producing baseline data regarding the amount and quality of information written on referral tickets;

- determining whether there are any variations between the amount of information disclosed by Private GPs, GPs in Health Centres and other referring agents, and;
- introducing a quality improvement initiative to address areas of weakness revealed by the baseline audit, and if need be, to produce a new format for referral tickets.

**Methods:** The audit was carried out over a period of three months (April – June 2009). Standard criteria and scores were set up taking into account the most important issues that should be addressed in the referral ticket, including:

- Demographic Data,
- Presenting Complaint,
- Past Medical History,
- Drug History,
- Social History,
- Examination Findings, and
- Systemic Enquiry

**Results:** Initial findings revealed significant deficiencies across the board in the quality of the referral tickets especially with regard to information on the presenting complaint, examination findings and systemic enquiry. They also revealed noteworthy variations between tickets issued by private GPs, GPs in health centres and other referring agents. Results are being further analysed using the Predictive Analytics Software (formerly known as SPSS).

**Conclusions:** An action plan shall be formulated to improve the quality of referral letters. Good practice guidance for writing letters shall be produced. This shall include a broad template document to be recommended for use by all doctors.

## FAM 2

### Health Behaviour Counselling in Primary Care: General Practitioner-Reported Rate and Confidence

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Primary Care, Ministry of Gozo

**Aims:** The aim of the study was to identify variables associated with GPs' self-reported rate of health behaviour change counselling and confidence in counselling abilities. The study also tried to elucidate the association of doctors' personal health behaviours with self-reported rate of health behaviour counselling and confidence in counselling abilities.

**Methods:** This study was based on a similar study done at the Mayo Clinic, Rochester, USA, which was published in the journal, Family Medicine, by Vickers, et al., (2007). 326 questionnaires were mailed to all GPs on the specialist register. The survey was completely anonymous. Self-reported items assessed rate of health behaviour change counselling, perceived importance of counselling, extent of counselling training, confidence in counselling abilities, and GP personal health behaviours. Comparison of the results of the 2 studies was made. Using the same questionnaire a semi-qualitative approach was used to identify GPs' barriers to, and perceptions about, health behaviour counselling.

**Results:** The response rate was 70 per cent. The male doctors were slightly overweight and their exercise frequency on a regular basis was low. Almost 74 per cent of the doctors never smoked. Quantitative analysis showed that perceived importance of

counselling and confidence in counselling were associated with GP self-reported rate of health behaviour counselling. Years in practice, extent of training, and importance of

counselling were significantly associated with confidence in counselling in a multiple regression model.

Qualitative analysis revealed that the main perceived barriers to counselling were insufficient time, patients' non-compliance and patients not ready to change. Further analysis revealed that most of the doctors believed that counselling in health behaviour change in primary care was very important and that they had to be role models for their patients as regards health behaviour.

**Conclusions:** Perceived importance of counselling and confidence in counselling were associated with GP self-reported rate of health behaviour counselling. But extent of training in health behaviour counselling was not associated with GP self-reported rate of health behaviour counselling. This could be due to the lack of training for GPs in health behaviour counselling. Years in clinical practice, extent of training, and perceived importance of counselling were significantly associated with confidence in health behaviour counselling. One third of GPs reported difficulty counselling patients on behaviours that they struggled with themselves.

### FAM 3

#### Shared Care between Hospital and GP: Doctors and Patients' Attitudes

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**Aims:** When planning training and medical education of Family Doctors it is important to take into account how women's expectations of antenatal, intrapartum and postnatal care.

How much do doctors feel that they are, or wish to be involved in the care of the pregnant women has not been assessed in Gozo. The expectations of patients is also assessed.

**Methods:** Method: Patients attending Antenatal Clinic at Gozo General Hospital are booked by the Midwife and an ultrasound is performed by the Consultant who then refers the patient back to her Family Doctor/General Practitioner for regular antenatal visits. Primigravidae are reviewed at 28, 32 and 38 weeks, whilst multigravidae are reviewed at 32 and 39 weeks at the hospital antenatal clinic. Postnatal patients were interviewed regarding their expectations and satisfaction. Doctors are interviewed regarding their expectations regarding the care of pregnant women.

**Results:** Results: Only half of the primigravidae and 80% of multigravidae agreed that their Family Doctor has an important role in their antenatal care, because their GP knew them well. One third of the multigravidae and 90% of primigravidae attend for their postnatal visit at the hospital.

**Conclusions:** Conclusions: Family doctors would prefer to be more involved in antenatal and postnatal care. Patients would like to discuss more with the doctor and midwife that will be present at their birth.

### FAM 4

#### Malta's Specialist Training Programme in Family Medicine – an evaluation of THE FIRST year of training

M.R. Sammut

Department of Primary Health Health Division, Malta

**Aims:** As a result of Malta's entry to the European Union in 2004, Family Medicine was recognised as a speciality and subsequently Specialist Training in Family Medicine was launched in 2007 by the Primary Health Department and the Malta College of Family Doctors. The three-year programme comprises designated training posts, based 50% in family practice (with one GP-trainer per trainee) and 50% in appropriate hospital specialities, together with a weekly half-day release course (HDRC) of academic group activities. An evaluation was carried out of the first year of training.

**Methods:** Evaluation forms were completed by trainees after each post in family or hospital practice and after each group-teaching session. The information from these forms was transcribed into the computer spreadsheet MS Excel® to enable quantitative and qualitative thematic analysis.

**Results:** During the first year of training, GP-trainees were over 90% satisfied with the effectiveness of the training provided during the family practice posts, and with the presentation, content and relevance of the teaching provided during the HDRC sessions. They were quite satisfied (~60-90%) with the effectiveness of training in the minor hospital specialities (Dermatology, ENT, Geriatrics, Ophthalmology, Palliative Care and Psychiatry), and less satisfied (~50-80%) with their major hospital placements (Accident & Emergency, Medicine, Obstetrics & Gynaecology and Paediatrics). Although the trainees felt that their hospital assignments did provide them with the necessary confidence to handle community cases related to the relevant specialities, they proposed a number of ways how these posts could be improved.

**Conclusions:** While training in family practice and group teaching sessions were deemed satisfactory by the GP-trainees, the following recommendations for improving hospital training were proposed:

Supernumerary posts should be enforced with protected time to address educational needs according to a clear structure and targets;

A set/structured daily timetable would enable trainees to make the best of all placements by gaining experience in provided services; Sessions undertaken should involve GP-related activities;

Teaching should be enhanced at the clinical level (with more emphasis given to hands-on out-patient sessions rather than working in wards) and through formal tutorials which are tailored to the GP-trainee.

### FAM 5

#### Cautionary tales from a schedule clinic... illustrated pitfalls accumulated over a five year

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**Aims:** Schedule V Clinics enable individuals suffering from conditions listed in the relevant Parliamentary Act to access free medication. A series of reports illustrating potential pitfalls in practice encountered in this setting are presented.

**Methods:** Case reports were accumulated from patients presenting to the Schedule V Clinic over the period 2004-8 during routine care. Cases were prospectively accumulated identifying diagnostic pitfalls encountered and adverse pharmacological effects of commonly used drugs. Photographs were taken with a Sony DSC-T1 Cybershot 5MP camera.

**Results:** The report series include selected cases of altered diagnoses with pharmacological implications and various pharmacological adverse effects. The series include two cases of slow/recurrent angio-oedema; photosensitive rashes, erythema multiforme, vasculitis and renal failure requiring dialysis.

**Conclusions:** Pharmacovigilance is one of the roles provided by Schedule V Clinics in the community. There is potential for better shared care, interaction, and documentation which may assist in risk reduction and improved patient safety.

### MSK 1

#### Tibialis posterior tendon tear associated with a closed medial malleolus fracture – a rare case report

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*Department of Trauma and Orthopaedics, Southport and Ormskirk NHS Hospital Trust, Southport*

**Aims:** Case report

**Results:** Complete rupture of the tibialis posterior tendon due to closed ankle fractures are a rare entity. To our knowledge only 6 cases have been reported in world literature. Difficult clinical diagnosis makes this condition easily missed as tears are only diagnosed intra-operatively. Failing to appreciate this tendon rupture would have led to long term patient distress and even functional foot deficit. We present a rare case report of complete rupture of the tibialis posterior tendon that was associated with a Weber C closed fracture of the ankle. Tendon tear was only found peri-operatively. After primary suture and osteosynthesis the patients' progress was extremely favourable. Learning points from this case are that closed injury to the ankle joint can lead to tibialis posterior tendon injury. A high index of suspicion should be maintained as this tendinous injury does not often present itself on clinical examination and is difficult to locate peri-operatively.

**Conclusions:** Closed injury to the ankle joint can lead to tibialis posterior tendon injury. A high index of suspicion should be maintained, both pre- and peri-operatively in cases of high energy trauma as this tendinous injury does not often present itself on clinical examination pre-operatively and is also often hidden from the operative field peri-operatively due to the stump retracting proximally [1,4,6-8]. It is important to feel for the tibialis posterior tendon behind the medial malleolus in such cases. The retraction of the tendon stump proximally warrants diligent search and accurate repair. Primary tendon surgical repair produces good outcomes and is the treatment of choice [2,7,8]. Severe soft tissue swelling on the medial side of the ankle joint, and/or difficult or failed reduction of the fracture should prompt the surgeon that underlying soft tissue injury might be associated with the ankle fracture, thus thorough exploration and primary repair intra operatively is warranted.

### MSK 2

#### Slipped Capital femoral Epiphysis in Children aged less than 10 years

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**Aims:** Slipped capital femoral epiphysis (SCFE) is rare in children aged less than 10 years, and its management in this age group raises a number of different considerations.

**Methods:** We present a series of 10 children aged less than 10 years who presented with SCFE to our institution between 1993 and 2005. Case notes and radiographic review were carried out.

**Results:** There were six boys and four girls, with an age range of 5.2–9.9 years. Mean follow-up was 50 months (22–90). The mean duration of symptoms was 54 days (1–196). Five cases were bilateral. The second slip occurred at a mean interval of 14 months (11–22) after the first slip. There were 12 stable and three unstable slips. One child had hypothyroidism and another oculocutaneous albinism. The remaining children had normal genetic and endocrine profiles. Six children were severely obese, one obese, two overweight, and one within the normal range. Multiple pins were used in nine hips and a single cannulated screw was used in six hips. Complications include loss of fixation in five hips treated with multiple pins, which were revised between 2 months and 2 years from the initial surgery, and one superficial wound infection. There were no cases of avascular necrosis or chondrolysis.

**Conclusions:** Obesity is closely related to the development of SCFE in younger children. A technique that preserves physal growth should be used for in-situ fixation. Multiple pins preserve capital femoral physal growth, but at the cost of a high complication rate. Strong consideration for prophylactic pinning of the contralateral hip is recommended.

### MSK 3

#### Idiopathic Adolescent scoliosis - the relevance of MRI and neurological abnormalities

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**Aims:** To determine the prevalence and relevance of neural axis abnormalities and neurological abnormalities in patients with progressive idiopathic adolescent scoliosis culminating in surgical correction of the deformity.

**Methods:** 104 consecutive patients (12 male / 92 female) who underwent surgery between 2002 and 2009 for idiopathic adolescent scoliosis were evaluated retrospectively. All patients had a pre-op MRI and were examined neurologically. The gender, curve characteristics, neurological findings and MRI findings were noted. Development of any post-op neurology was also noted.

**Results:** 5 patients (4.8%) had neuraxis abnormalities. Of these, 4 had the typical right thoracic / left lumbar curve and 1 had a thoracolumbar curve. 4 had unremarkable neurological examinations. 3 (all female) had syringomyelia, 1 (male) had a small syringomyelia and a mild Chiari malformation, and 1 (female) had a Chiari malformation. This patient was the one with a right thoracolumbar curve, and had absent right superficial abdominal reflexes (SARs). All 5 patients were assessed by a neurosurgeon who deemed surgery for the neuraxis abnormality unwarranted. All 5

underwent surgery for deformity correction without neurological mishap. From the cohort of 104 patients, 16 had an abnormal neurological examination; 13 (12.5%) had absent or asymmetrical SARs, 2 (1.92%) had abnormal limb reflexes and 1 (0.96%) was areflexic. Of the 14 (12 female / 2 male) with abnormal SARs, 4 had atypical curves; 3 (females) had a right thoracolumbar curve and 1 (male) had a left thoracic curve. All 16 patients underwent surgery for deformity correction without developing any neurological complications. Of the 104 patients studied, 8 (7.7%) (3 males / 5 females) had a left thoracic curve and 8 (all female) had a thoracolumbar curve. Patients with neuraxis abnormality showed no statistical predilection ( $P=0.59$ ) for abnormal or intact neurology.

**Conclusions:** Abnormal SARs is not a good indicator of underlying neural axis abnormality and both these findings were not prognosticators on the outcome of corrective surgery in idiopathic adolescent scoliosis. MRI findings, unpredicted by clinical examination, had no bearing on the outcome on the surgery for correction of the deformity.

#### MSK 4

### An Audit of Orthopaedic Trauma Theatre in Malta

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**Aims:** Orthopaedic trauma surgery covers a wide spectrum of injuries, some of which requiring surgery that is more urgent than others. Efficient utilisation of the trauma list is an important aspect of trauma care. The aim of the audit was to investigate the trauma theatre utilization over a three month period in Mater Dei Hospital, Malta.

**Methods:** 426 patients underwent 482 orthopaedic trauma surgical procedures between the 11th February and the 11th May 2008. The route of admission was noted. The patients were allocated into Groups A, B and C if they were operated within 8 hours, between 8 and 24 hours, or after 24 hours, respectively. The mean ages and the type of injury sustained were compared. The time of start and end of each operation was recorded, and any reason for delay was noted.

**Results:** There were 61 patients in Group A, 122 in Group B and 295 in Group C, with a mean age of 36, 38 and 59 years, respectively ( $p<0.001$ , ANOVA). The ratio of injuries that were open was 41.7% in Group A, 26.2% in Group B and 4.7% in Group C ( $p<0.001$ , ?2). The reasons for delay in surgery in those who waited for more than 24 hours (Group C) were due to lack of available theatre time in 223 patients. 90.2% of all patients with proximal femoral fractures were in Group C ( $p<0.001$ , unpaired t-test). The mean number of operations performed when one theatre was utilized was 4.3, increasing to 5 when more than one theatre was used. The maximum number of cases performed was 14 on a day when two theatres were available. The time in between cases was found to be 26% of the available theatre time.

**Conclusions:** Our findings compare well to other studies that quote 25% to 50% of theatre time to be unused. However, we feel that there is room for improvement in the trauma theatre utilization, as this would result in decreased waiting times for surgery and a decreased hospital length of stay.

#### MSK 5

### A second look at improving mortality after proximal femoral fractures

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**Aims:** To assess influences on postoperative morbidity and mortality in patients with proximal femoral fractures in patients aged over 65 years

**Methods:** Data collected for a previous audit of one year mortality in patients with proximal femoral fractures over 65 years of age was reassessed – for the periods January-June 2004 and January-June 2005. We now looked at the patient's pre-morbid condition, preoperative optimization, intra-and post-operative events and their influence on post-operative morbidity and mortality in this particular patient cohort.

**Results:** 286 patients with a proximal femoral fracture were admitted for treatment within the study periods. 75 of the patients died within the first year – giving a mortality rate of 26%. Most of the patients who died at one year had a higher ASA score overall - of 3 or more – especially in those patients with congestive heart failure, and intra and postoperative courses were turbulent.

**Conclusions:** Various factors influence mortality rate in elderly patients with proximal femoral fractures. Careful pre-operative assessment and optimization aid recovery and could potentially lead to reduction in patient morbidity and mortality.

#### MSK 6

### Pilon Fractures of the Tibia - A Case Report

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**Aims:** Case Report

**Results:** We report a case involving a 49 year old gentleman who presented with an open grade III pilon fracture following a fall from a height of two storeys. Named "pilon" because of the hammer-like way in which the talus drives into the weight-bearing surface of the distal tibia, these injuries are often associated with substantial soft tissue injury.

The patient presented on the 16th August 2002 with an open ankle fracture and spinal injuries. Once his general condition was stabilized, reduction and internal fixation were carried out, together with an external fixation device. A second operation to provide vascularised skin cover over the exposed fracture was performed 10 days later. This consisted of a free fascio-cutaneous flap transfer from the lateral aspect of the arm to the medial ankle. The patient underwent a good post-operative recovery, and gradually increased mobility. A year later, the ankle fracture was completely healed and the overlying skin flap was well vascularised. The patient regained full mobility and independence, and returned to work and to his regular life style.

**Conclusions:** Two factors must be considered when dealing with an open tibial pilon fracture, namely the management of the soft tissues, and the bone reconstruction. The two-staged procedure is preferred as it allows significant soft-tissue swelling to subside. It has been well documented that complication rates are decreased with good pre-operative planning and when meticulous surgical techniques are used. Based on our experience as presented in the case report, the staged procedure was successful at restoring function.

## MSK 7

### Audit-Cervical Spine Injuries

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**Aims:** To review the management of patients with suspected C - spine injuries at the accident and emergency department of Mater Dei Hospital. The assessment of patients with neck injury poses a challenge to the examining doctor due to the potential consequences of a missed fracture. A literature search found various international guidelines on neck injury, the most popular is the Canadian C spine rule, however none are followed locally. An audit was performed to compare management at Mater Dei Hospital ( MDH) to the CCR.

**Methods:** A retrospective, observational audit was carried out over February and March 2009. A proforma was prepared and implemented and a prospective audit was repeated to close the loop over June and July 2009. Mechanism of injury and age of patient were audited. Patients were divided into three risk categories depending on history and examination according to CCR, and radiology performed was documented and compared with that recommended

**Results:** 105 patients were included in both audits for a total of 210 patients. In the High risk group in Feb /March only 39/ 59 (76%) had a lateral x ray, this improved to 51/ 57 ( 89%) in June / July, p value = 0.08 . Similarly, in the Intermediate risk group 10 / 15 ( 67%) in the Feb./March audit had a lateral x - ray improving to 16/16 ( 100%) in June/ July , p value = 0.0021. There was also a decrease in the amount of inadequate laterals ( poor view of C7 – T1 ) from 35% in Feb. / March to 22% in June / July. There was an increase ( re introduction) in the number of odontoid views requested in June /July and better documentation of assessment of neck range of movement in notes. There was no change in the number of inappropriate x-rays requested at 19% . 3 patients (1. 4 %) had positive findings.

**Conclusions:** The most common cause of missing C spine fractures is inappropriate imaging with disastrous consequences. Implementation of a C spine proforma in A and E has led to an improvement in both requesting as well as adequacy of radiology. However, there is still large room for improvement to reach 100% adequate lateral x – rays in high risk patients as recommended on international guidelines. There is need for continuous audit to maintain improvement in quality of care.

## MSK 8

### Comparative anatomy of human and sheep knee joints: casts for future pre-clinical arthralgia trials

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**Aims:** To compare the anatomy of human and sheep knee joints, and to produce a cast of each for development of support devices for future preclinical testing.

**Methods:** Silicone was injected into the intact sheep and human knee joint capsules to take the shape of the synovial cavity and form a cast. The surrounding tissue was digested away, after removal of gross accessible structures to retrieve the silicone casts. Furthermore, two other specimens, one of each species, were

dissected (deep dissection) to demonstrate the structures within each joint highlighting the differences and similarities between the two species.

**Results:** The casts obtained, as well as the dissections show the considerable similarities as well as important differences between the two joints, allowing the computer aided design of devices for pre-clinical arthralgia testing.

**Conclusions:** The casts will be used to design devices that can act as intra-articular shock absorbers in the treatment of arthralgia and arthritis. The knee cast of the sheep joint will allow the design of a device that can be tested on ovine subjects before proceeding to human trials.

## MSK 9

### Intervertebral disc height in premenopausal women, treated and untreated postmenopausal women and postmenopausal women with osteoporotic vertebral fractures

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Department of Obstetrics and Gynaecology, University of Malta

**Aims:** Objective: To assess Intervertebral Disc Height in premenopausal women, hormone treated and untreated postmenopausal and postmenopausal women with radiographically confirmed vertebral fractures

**Methods:** Seven hundred and fourteen women were collected randomly from a large directory in a data base of a bone density unit. Every fifth woman in the directory was recruited from the DEXA directory. The image of the vertebral spine on the computer screen was sought for the women recruited. The adjustment mode was then employed allowing the horizontal cursors to be placed at the edges of the vertebral discs between the tenth thoracic vertebra.

**Results:** 714 Women were divided in five groups according to the menopausal/menstrual status. One hundred and eighteen (118) menopausal women were on HRT, 220 women were untreated menopausal women, 98 menopausal women were on bisphosphonates, 161 women were on calcium supplements, 79 women were premenopausal and 38 women had confirmed vertebral fractures. Age and weight differences were noted across groups and statistical. The vertebral fracture group was noted to have the lowest disc height (1.38 +/-0.617; SD 0.1cm) of the 3 discs D1 - D3. The D1 - D3 disc height in the HRT and premenopausal groups were similar (1.92 +/- 0.617; 0.35 cm) and ( 1.92 +/-&0.617; 0.3cm ) respectively. The disc heights in the other three groups (calcium 1.49 +/- 0.617; 0.48, untreated menopausal group 1.49 +/- 0617; 0.48cm, Bisphosphonates 1.41 +/- 0.617; 0.47cm) were significantly lower than the oestrogen replete groups but were significantly higher than the osteoporotic vertebral fractures group (p < 0.001).

**Conclusions:** Postmenopausal women with vertebral fractures have significantly low disc heights. The disc heights are significantly lower than HRT treated and premenopausal women. The disc heights of the calcium and bisphosphonate groups were also significantly lower than the HRT treated and premenopausal women. These results suggests that the discoid shape and viscoelastic properties of the intervertebral discs may be relevant to the genesis of osteoporotic vertebral fractures and nonhormonally treated menopausal women also have significantly low disc heights.

## MSK 10

### Trochanteric cortical thickness in various groups of women – a new marker for postmenopausal osteoporotic hip fracture – a chain is as strong as its weakest link.

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**Aims:** The assessment of the greater trochanter cortical thickness in various groups of women.

**Methods:** One hundred and sixty-two women were recruited sequentially to have the outer cortical thickness of the left lower limb's greater trochanter measured ultrasonically. Sixty-two women were young menstrual (under the age of 35 years) while there were 25 women in the older menstrual group (35+ years). The other groups were perimenopausal women (17) and treated (30) and untreated postmenopausal women (28). The woman would be placed on the right flank with both lower limbs extended. The greater trochanter would then be palpated and a 3.5 MHz ultrasound sector probe Aloka (SD 500) would be placed at right angles to the point where the trochanter could be felt. Under the sonolucent subcutaneous tissue, a “/” shaped hyperechoic signal could be seen representing the greater trochanter and is consistently noted to be thinnest point of outer cortical bone in this region. The inner and outer hyperechoic edges at the obtuse angle of the trochanteric “/” could be consistently delineated allowing the accurate measurement of the cortical thickness.

**Results:** The lowest cortical thicknesses were registered for the untreated menopausal group (0.776 +/-0.2 cm) and the perimenopausal group (0.878 +/-0.15 cm). The oestrogen replete group were consistently higher – young and old menstrual group (0.943 +/- 0.19 cm and 0.928 +/- 0.16 cm) respectively and 0.936 +/-0.18 cm in the hormone treated group. The trochanteric thickness of menopausal group was significantly lower than all the other groups of women.

**Conclusions:** The low cortical thicknesses of the greater trochanter may represent a weak point where postmenopausal fracture of the hip may initiate. This area may be most vulnerable as it experiences significant shearing forces from all directions. Moreover possibly with less mobility related to the ageing process, osteoporosis may set in at a faster rate in this region due to the diminished strain applied through the ligamentous insertions. Measurement of this region is easily performed and reproducible. This may be another marker for women at risk of the classical postmenopausal osteoporotic fracture of the hip.

## MSK 11

### Do epidural injections improve Quality of life in sciatica?

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**Aims:** To evaluate whether epidural injections improve the quality of life in patients with sciatica.

**Methods:** 20 patients suffering from sciatica attending the rheumatology clinic were recruited. Patients were asked about the characteristics of pain, analgesic therapy used, quality of life and degree of mobility. Clinical examination was carried out.

All patients completed the Visual Analogue scales about pain and disability, the Oswestry and the Roland Morris disability questionnaires both before the procedure and one month following the intervention.

#### Results:

- 10 patients were females and 10 were males. All the patients, had a BMI of more than 25.
- Prior to the procedure, 3 patients were suffering from mild pain, 13 had moderate pain and 4 had severe pain.
- In all cases, pain had been present for more than 1 year.
- 3 patients were lost to follow up.
- 7 patients had very high a priori expectations with regards to improvement in walking ability, 10 patients had moderate expectations and only 3 had low expectations. 7 had very high expectations regarding improvement in leg numbness, 3 had high expectations and 10 had moderate expectations.
- Concerning patients' expectations, 1 month post procedure, 7 patients had improved walking abilities and 10 were the same. 7 patients had worsened symptoms of leg numbness, 10 were the same.
- According to the Oswestry and Roland Morris questionnaires, 4 showed an improvement in pain score while 13 showed worsening symptoms.

**Conclusions:** Longstanding prolapsed intervertebral discs are likely to be degenerate or sequestered, rendering the intervention unhelpful and may explain the poor outcomes. Performing the intervention earlier may result in better results. The fact that all patients were overweight or obese may have had a bearing on the outcomes. Better patient selection (younger age, normal BMI, shorter disease duration) could result in more effective use of this safe intervention.

## MSK 12

### Outcome of facet joint injections for low back pain

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**Aims:** To evaluate patient expectations and outcomes after facet joint injection for low back pain.

**Methods:** 20 patients suffering from low back pain with features suggestive of facet joint pain scheduled for lumbar facet joint injection were recruited.

Validated Maltese translations of the Oswestry and the Roland Morris low back pain and disability questionnaires were completed by patients both prior and 1 month after the intervention. Patients' expectations, reasons for intervention and satisfaction 1 month post procedure were evaluated using Visual Analogue scales.

#### Results:

- 20 patients were recruited (5 males, 15 females).
- Prior to the procedure, 2 patients experienced mild pain, 9 had moderate pain and 9 experienced severe pain.
- 1 month after the procedure according to the Oswestry and Roland Morris questionnaires:
  - 11 patients improved while 5 patients reported worse symptoms
  - 1 patient showed a contradictory result (symptoms worse according to one questionnaire and better according to the other questionnaire)



- Concerning patients' a priori expectations according to the Visual Analogue Scales, 4 patients had very high expectations that their back pain would improve, 2 had high expectations, 14 had only moderate or low expectations. After 1 month, 4 patients reported the same degree of back pain, 2 experienced worse back pain, 11 were better.
- 3 patients were lost to follow up.

#### Conclusions:

- A significant number of patients showed therapeutic benefit following facet joint injection.
- Overall patients who had high or moderate expectations prior to the procedure did better.
- The small number of patients recruited in this study and the fact that back pain symptoms fluctuate may have affected the results obtained. A longer follow up period is also needed.
- Establishing the diagnosis of lumbar facet joint syndrome clinically is difficult because findings are not specific. This may explain why some patients did not benefit from the procedure. The use of MRIs may be useful in identifying patients who are most likely to benefit.

### MSK 13

#### The Effects of Treatment on Quality of Life in Rheumatoid Arthritis

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**Aims:** To assess and evaluate the impact of different pharmacological treatments on health-related quality of life in rheumatoid arthritis patients.

**Methods:** The study was divided into two main phases. During phase 1 rheumatoid arthritis patients were recruited and administered the following health-related quality of life questionnaires: Short Form Health Survey-36 (SF-36) and Health Assessment Questionnaire – Disability Index (HAQ-DI). After six months of therapy (phase 2), the patients were re-administered both questionnaires. Data compiled from phase 1 and phase 2 questionnaires were analysed using SPSS version 17.0. The results of the questionnaires were correlated to various drug therapy regimens, to identify the best treatment that improves quality of life.

**Results:** Seventy-five rheumatoid arthritis patients agreed to participate in the study. The mean score obtained for the HAQ in phase 2 was significantly lower than the mean score obtained for phase 1 (+/-0.804;0.05) indicating an improvement in disease state. The mean scores for the following SF-36 domains - physical functioning, physical and bodily pain - during phase 2 were significantly lower than the mean scores obtained for phase 1 (+/-0.804;0.05). The mean Disability Index score obtained in Phase 2 was lower than the mean score obtained for Phase 1 indicating a significant improvement in disability (+/- 0.804;0.05). On comparing the disability index to the specific pharmacological treatment groups, the lowest scores for disability were identified among rheumatoid arthritis patients treated with triple therapy, quadruple therapy and methotrexate (MTX) in combination with glucocorticoids.

**Conclusions:** After 6 months of therapy, there was an overall improvement in disability, physical functioning, bodily pain and in the emotional factor. The following treatment combinations were found to be more effective in improving rheumatoid arthritis patient's health-related quality of life: Methotrexate in combination with glucocorticoids and Triple Therapy and Quadruple Therapy.

### MSK 14

#### Allopurinol Desensitization – A New Regimen

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**Aims:** Determination of the efficacy and safety of an oral desensitization protocol of allopurinol.

**Methods:** This study was performed over a period of 13 weeks in 2 patients with hyperuricaemia and tophaceous gout with allopurinol hypersensitivity manifested by severe rash. Allopurinol 20mg/mL suspension was prepared as per standard formula. This suspension was used to prepare further diluted oral doses as shown in the table with a gradual and progressive increase in dose every 7 days progressing to a target dose of allopurinol 300mg daily. Each dose was prepared on the day for immediate use.

**Results:** One patient passed away due to unrelated complications (heart failure). The other patient completed the desensitization protocol to a target allopurinol dosage of 300mg daily successfully.

Week	Allopurinol Dose		
	Solution	Equivalent to	Daily Dose
1	0.5mg/mL	0.5mL	25mcg
2	0.1mg/mL	0.5mL	50mcg
3	0.1mg/mL	1mL	100mcg
4	0.1mg/mL	2mL	200mcg
5	0.1mg/mL	5mL	500mcg
6	0.2mg/mL	5mL	1mg
7	0.4mg/mL	5mL	2mg
8	1mg/mL	5ml	5mg
9	2mg/mL	5mL	10mg
10	20mg/mL	1.25mL	25mg
11	100 mg tab	Half a 100mg tab	50mg
12	100mg tab	100mg tab	100mg
13	300mg tab	300mg tab	300mg

**Conclusions:** This allopurinol desensitization procedure is beneficial in selected patients who suffered from hyperuricaemia and severe rashes following administration of this drug. When administered again in a very gradual manner, patients' tolerability to allopurinol can be restored.

### MSK 15

#### Pigmented Villonodular Synovitis (PVNS) in Malta: Incidence, Management and Outcomes

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**Aims:** To estimate the incidence of Pigmented Villonodular Synovitis (PVNS) in Malta. Management and outcome were also reviewed.

**Methods:** This was a retrospective case-record study. 16 cases (10 males and 6 females) have been documented in Malta since 1992. The patient pool was collected from histology reports recorded as PVNS. Data collected included sex, age at onset and diagnosis, joints involved, presenting symptoms, management and outcomes.

**Results:** Of the 16 patients identified only 14 case notes were found. The age at onset of symptoms ranged between 21 and 74 years while time taken between symptom onset and diagnosis ranged between 2 and 120 months. 5 patients had diffuse PVNS, while 2 had localised PVNS. In 7 cases the type was not specified. The presenting complaint was joint swelling in 6 cases, pain in 4 cases, and both pain and swelling in 3 cases. 12 patients had articular PVNS involving the knee and 2 patients had extra-articular PVNS involving the hand. Diagnosis was made on biopsy at arthroscopy (n=8), from histology of tissue removed at open surgery (n=4) or from cytology of knee aspirate (n=2). Management included: arthroscopic synovectomy (n=2), open synovectomy (n=3), knee replacement (n=1), chemical and surgical synovectomy (n=1) and no treatment (n=7). Of the latter group, 2 are awaiting arthroscopy. Recurrence was documented in 5 patients. Of these, 2 are awaiting treatment and 3 patients were lost to follow-up.

**Conclusions:**

- Several case notes lacked relevant data and documentation is especially poor in recurrent disease.
- 5 cases were diagnosed on biopsy at arthroscopy, but no further treatment was documented.
- Pool of patients may be under-representative of the true incidence of PVNS, since cases could only be identified from histology reports, as there is no formal register available.
- Incidence of PVNS in Malta over the past 17 years was 0.94 cases per year. Calculated incidence was 2.32 cases per million. These results are in keeping with other published studies.

## MSK 16

### Rheumatology Helpline Service

*D. Aquilina - Acknowledgment is given to the medical team and the clinical pharmacist working at the Rheumatology section*

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**Aims:** The Rheumatology Helpline service was developed with the aim of providing a point of contact for the patient attending the unit when there was any query, adverse events, flair ups and any other pain caused by the course of the disease.

**Methods:** In 2006 a telephone line was set up for this purpose. The specialist nurse runs this service. According to the NICE guidelines, there should be one person from the multidisciplinary team that co-ordinates the care of the rheumatoid patient (2009). The patients are given a helpline card and advised on how to use the helpline. The specialist nurse will answer the calls and acts accordingly. Sometimes the Rheumatologists need to be contacted according to the problem presented by the patients.

**Results:** The service has become quite popular with the number of users increasing every year. In 2006 we had 268 calls, in 2007, 352 calls and in 2008 we had 525 calls. In 2006 and 2007 a log book was kept recording the incoming calls, whilst in 2008, a data base was created to monitor patients who make use of the helpline. We had 7.01% (34) calling because of adverse events from medication, 7.01% (34) calls were received from fibromyalgia

patients, and 12.99% (63) calls were attributed to pain. Regarding prescription problems and blood enquiries there were 1.44% (7) and 10.31% (50) respectively. 11.75% (57) called because they had some kind of problem with their injection, mostly the biologic users and 18.35% (89) called because of appointment problems. 24.33% (118) calls were made because of several minor problems and they were classified as others. The latter would consist of questions about medication, vaccination, prescriptions, or any other problem related to the disease.

**Conclusions:** The number of patients calling the helpline would have tried to access the rheumatologists during their outpatients clinics or during their ward round sessions, disrupting the smooth running of the service. A study by Jackie Hill about the cost effectiveness of the helpline showed that 37% of patients would contact their consultant if they could not access their rheumatology nurse specialist causing heavy burden on the NHS resources (2005).

## MSK 17

### A survey of laboratory monitoring of patients with rheumatological conditions who are on methotrexate

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**Aims:** To assess whether adequate laboratory monitoring for patients on methotrexate is being carried out.

**Methods:** The files of patients with rheumatological conditions, who are taking methotrexate and attended the rheumatology clinic of two rheumatologists, over a period of eight months between February and September 2009 were reviewed. The information gathered included demographic data, diagnosis, date of commencement of methotrexate, dates of changes in methotrexate dose, as well as dates on which blood investigations were performed.

**Results:** The results are presented in graphic and tabular form and discussed with reference to locally developed guidelines for drug monitoring.

**Conclusions:** Adherence to laboratory monitoring requires both physician and patient collaboration. Patient compliance with medication and blood monitoring is enhanced by patient education and active participation in decision making. This contributes to patient safety.

## MSK 18

### Developing and evaluating a patient information leaflet for rheumatoid arthritis patients receiving hydroxychloroquine

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**Aims:** To develop and evaluate a patient information leaflet on the use of hydroxychloroquine in rheumatoid arthritis patients.

**Methods:** A literature review on hydroxychloroquine was carried out to highlight what information should be included in the leaflet. The leaflet was designed using Microsoft Publisher Version 2007 and consisted of 12 topics. The amount of words per sentence was kept less than 20 words to make the leaflet user friendly. An English and Maltese version of the leaflet was presented to the expert panel consisting of a rheumatology consultant, a rheumatology clinical pharmacist, a rheumatology nurse specialist, 2 basic specialist trainees, 2 community pharmacists, 2 housewives, a teacher of English and a teacher of Maltese. The English version was also evaluated by a health economics professor from Cardiff and a clinical pharmacist at the Western General Hospital, United Kingdom. The leaflets were distributed to 20 patients who were asked to answer a previously validated questionnaire 12 weeks after receiving the leaflet.

**Results:** Topics addressed in the leaflet included background information on hydroxychloroquine, dosage regimen, side-effects, interactions, family planning issues and appropriate storage. The mean number of words per sentence was 10. Comments received from the expert panel suggested the use of red font for important points and the use of point form rather than paragraph style. There was general consensus that the number of the rheumatology helpline should be included in a separate section of the leaflet for easy reference. The expert panel concluded that the leaflet was comprehensive, concise and patient friendly, and would improve the patient's knowledge of the medication.

The majority of the patients (19/20) answered that they found the leaflet useful, and understood the topics in the leaflet. Eighteen patients (18/20) said they still had a copy of the leaflet after 12 weeks. All patients agreed that the leaflet was well presented and that it was beneficial to them. Two patients suggested that more patient information leaflets on drugs should be prepared by the Rheumatology Clinic team.

**Conclusions:** The study concluded that patient information leaflets is an essential part of patient management for rheumatology patients and such a service is being requested by the patients.

## MSK 19

### Measuring outcomes of pharmacist intervention in the management of patients with rheumatoid arthritis

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**Aims:** To evaluate the impact of pharmacist's intervention using the Health Assessment Questionnaire<sup>1</sup> and questionnaires regarding desire for information<sup>2</sup> and beliefs about medications<sup>3</sup>.

**Methods:** Eighty patients with rheumatoid arthritis were included in the study and divided into, Group A (control n=40), Group B (n=40) and Group C (patients on hydroxychloroquine n=20). All patients were interviewed. A pharmaceutical care session with the pharmacist was then offered to Group B and Group C. All patients were re-assessed after 12 weeks.

**Results:** A statistically significant improvement in the quality of life of patients was registered following the pharmacist's session ( $p < 0.05$ ). A decrease in the concern ( $p < 0.05$ ), and an increase in the necessity for the medications ( $p < 0.05$ ) was registered compared to baseline.

**Conclusions:** The pharmacist's intervention resulted in improved patients' lifestyle, resolved concerns and patient awareness of increased the necessity of patient compliance with treatment.

## MSK 20

### Epidemiology of patients attending the Rheumatology Out-Patient Clinic.

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**Aims:** To study the patient characteristics of patients attending the Rheumatology Out-Patient Clinic over 2 periods of 3 months duration each.

**Methods:** Patients' medical notes were screened for demographic data, rheumatological diagnosis, co-morbidities and drug therapy. This data which was verified through patient interviews was inputted into Microsoft Office Excel 2003. Ethics approval, patients' consent and consultants' approval were sought.

**Results:** A total of 253 patients (females =177, males =76) aged between 21 and 87 years (mean age 57 years) agreed to participate. There were 275 rheumatological conditions documented. Twenty patients suffered from 2 concurrent rheumatological conditions, 1 patient suffered from 3 concurrent rheumatological conditions whereas 232 (91.7%) patients had only 1 rheumatological condition. Rheumatoid arthritis was documented in 53.4% (n=135) of the patients with a prevalence of females to males of 3: 1 followed by systemic lupus erythematosus (12.3%) with a female to male prevalence of 9:1 and psoriatic arthritis (n=27, 10.7%) with a nearly equal male to female ratio (1:1.1). A total of 102 co-morbidities were documented (mean of 1.3 co-morbidities/patient). The most common co-morbidity was hypertension (22.3%, males =21, females =37) followed by diabetes (13.4%, males = 13, females = 21). A total of 121 different medications were prescribed. The most commonly prescribed medication was prednisolone (41.9%, n=106) followed by methotrexate (40%, n=101) and folic acid (39%, n=99).

**Conclusions:** The gender prevalence of rheumatoid arthritis, systemic lupus erythematosus and psoriatic arthritis correlates with that of local and international findings 1-4.

## MSK 21

### Characteristics of a Cohort of Maltese Patients with Rheumatoid Arthritis

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**Aims:** Rheumatoid arthritis is one of the more commonly encountered inflammatory rheumatological conditions encountered at the Rheumatology Clinic. This study was designed to study the characteristics of a cohort of Maltese patients with Rheumatoid Arthritis attending the rheumatology clinics of two rheumatology consultants at Mater Dei Hospital over a four month period in 2009.

**Methods:** The files of patients with rheumatoid arthritis were reviewed. The data collected included the demographic data, date of referral, first visit, and date of diagnosis, and the results of immunological tests. Note was taken of all present and previous medications, and co-morbidities, including cardiovascular morbidity, hypertension, diabetes and osteoporosis.

**Results:** The results are presented in tabular and graphic form, and are discussed with reference to the literature.

**Conclusions:** The results give an idea of the characteristics of patients with rheumatoid arthritis, as well as the comorbidities that they suffer from. Furthermore, it is planned to extend this study to at least a period of one year which would give a more complete overview of the characteristics of patients attending our clinics

## MSK 22

### Characteristics of a Cohort of Maltese Patients with Paget's disease attending the Rheumatology Clinic at Mater Dei Hospital

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**Aims:** Paget's disease of bone is a condition that is frequently seen in the Maltese population. This study was designed to study the characteristics of a cohort of patients attending the Rheumatology clinics of two rheumatology consultants at Mater Dei Hospital over a four month period in 2009.

**Methods:** Data was collected from the files of patients with Paget's disease. The patients consisted mainly of follow-ups, but new cases were also included. The data collected included demographic data, including age, and sex. Other aspects that were looked at included mode of presentation, a family history of the conditions, documented fractures or other disease complications. Bone scintigraphy results, follow up serum alkaline phosphatase levels, as well as treatments prescribed were recorded.

**Results:** The results are presented and discussed and compared to previous studies held both locally and abroad. The literature is reviewed.

**Conclusions:** This study gives a general overview of the characteristics of patients with Paget's disease. However, we plan to extend this study beyond the four month period to at least a period of one year to give a more accurate idea of the characteristics of patients with Paget's disease attending our clinics.

## MSK 23

### Characteristics of a Cohort of Maltese Patients with Osteoporosis attending the Rheumatology Clinic at Mater Dei Hospital

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**Aims:** This study was designed to study the characteristics of a cohort of patients with osteoporosis attending the rheumatology clinics of two rheumatology consultants at Mater Dei Hospital over a four month period in 2009.

**Methods:** Data was collected from the files of patients with osteoporosis. These included both new cases and follow ups. The data collected included demographic data, source of referral, and date of diagnosis. It was further documented whether the osteoporosis was primary or secondary. Bone density measurements and treatments used were also recorded. Risk factors including fragility fractures before or after commencement of treatment, family history of fragility fractures, age at menopause, usage/ dosage of corticosteroid treatment or other medications causing bone loss, as well as the blood investigation results used to exclude underlying causes were also reviewed.

**Results:** The results are presented and discussed. A significant number of patients had secondary osteoporosis, in particular glucocorticoid induced osteoporosis. This is in keeping with expectations when considering that the cohort of patients was obtained from Rheumatology unit where patients with inflammatory rheumatological conditions that require use of prolonged courses of glucocorticoids are seen. Furthermore, since this is a secondary referral centre, there were a number of patients referred by the gastroenterologists with osteoporosis secondary to celiac disease. However, it is significant to note that there were also a number of patients who were referred for the management of seemingly primary osteoporosis, for whom an underlying cause was found on routine screening. The literature is reviewed.

**Conclusions:** This study does not reflect the epidemiology of osteoporosis within the general population, as the fact that the clinic is a Rheumatology clinic and not a Primary Health Care clinic introduces a selection bias that predisposes to an increase in the number of patients with secondary osteoporosis. However, it highlights the importance of investigating patients with osteoporosis prior to starting treatment, as treating the underlying cause is one of the cornerstones of management.

## MSK 24

### Side Effects Caused By Corticosteroids, Disease Modifying Anti-Rheumatic Drugs and Biological Agents in Patients with Inflammatory Rheumatological Conditions

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**Aims:** This study was designed to identify the side effects due to corticosteroids, Disease Modifying Anti-Rheumatic Drugs (DMARDs) and Biological Agents, encountered in patients attending

the Rheumatology clinics of two rheumatology consultants at Mater Dei Hospital.

**Methods:** The files of patients with inflammatory rheumatological conditions who attended the clinic over a four month period in 2009 were reviewed. The data collected included the demographic data, as well as a list of all present and previous medications together with documented side effects, as well as any therapeutic intervention taken such as stopping the medication in question, decreasing the dose, adding another medication or a surgical intervention.

**Results:** The results are presented in tabular and graphical form and discussed with reference to the literature.

**Conclusions:** When prescribing corticosteroids, DMARDs and biological agents, it is important for the clinicians and other members of the multidisciplinary team to have a clear understanding of the side effects that may be experienced by the patient. It is equally important for the clinicians to bear in mind that patients have a right to know about possible side effects that they may experience with the medications that they are prescribed. Only then can it be truly said that the patient has given informed consent and has actively participated in decision making with regard to his own treatment, thus respecting the ethical principle of autonomy. The clinicians, pharmacist and specialist nurse work together within the multidisciplinary team to ensure that this is so.

## MSK 25

### **Pigmented villonodular synovitis: is it a benign illness?**

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#### **Aims:**

**Case Report:** Pigmented villonodular synovitis (PVNS) is a rare proliferative disorder of the synovium, typically affecting young adults in their 3rd or 4th decades. PVNS is usually monoarticular, most commonly involving the knee, but it can occur in tendon sheaths and bursae. Two forms are described: localised and diffuse. Although described as histologically benign, the diffuse form is locally destructive and recurrence occurs in 8-46% post surgery. For localised PVNS, marginal excision is usually sufficient while for diffuse PVNS total synovectomy is the standard management. Due to the high rate of recurrence adjuvant treatment is often needed including intra-articular radioisotope instillation such as yttrium 90 or external beam radiotherapy. Joint arthroplasty is the last resort in these patients who are usually young.

#### **Methods:** Case report

**Results:** We report a case of a 24 year old lady who presented in December 2005 with a 7 month history of progressive pain and swelling of the left knee. Knee aspiration showed haemorrhagic synovial fluid. MRI scanning confirmed the effusion but was otherwise reported as normal. A diagnosis of PVNS was made on synovial biopsy. Several treatments including aspiration and intra-articular steroid injections, osmic acid synovectomy, oral methotrexate 15 mg weekly and prednisone 5mg dly failed to control the disease. In September 2007 an open total synovectomy was carried out with good effect. A year later swelling recurred. This time MRI showed marked synovial hypertrophy, areas of decreased signal intensity caused by haemosiderin deposition and bone erosions characteristic of PVNS. At this stage options being considered include, repeat open

debulking synovectomy followed by yttrium 90 intra-articular injection or external beam radiotherapy and joint arthroplasty with a tumour type prosthesis.

**Conclusions:** PVNS needs to be considered in young patients presenting with monoarticular swelling and haemorrhagic effusions. MRI findings are not specific to PVNS and cases with low haemosiderin content may be missed. Complete eradication can be very challenging and combined medical and surgical approaches may be needed. Studies comparing the various treatment modalities and long term follow up of patients are needed.

## MSK 26

### **The Effect of TNF inhibitors on Severe Rheumatoid Arthritis as Assessed by the DAS28 and Health Assessment Questionnaire (HAQ) Score**

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**Aims:** Systemic sclerosis (SSc) is a multi-organ autoimmune disease characterised by fibrosis of the skin and various internal organs together with a vasculopathy. The treatment of this condition is a challenge because the pathogenesis is unclear and because it is an uncommon and clinically heterogenous disease affecting different organ systems<sup>1</sup>. In May 2009 the EULAR Scleroderma Trials and Research group (EUSTAR) published a list of recommendations for the treatment of systemic sclerosis<sup>1</sup>. At the Rheumatology Outpatient Clinic/Mater Dei Hospital (MDH) a number of patients with SSc are followed up on a regular basis. This study has been undertaken to assess whether the management of these patients complies with the EUSTAR recommendations.

**Methods:** A review was carried out of the case notes of patients attending the Rheumatology Outpatient Clinic/MDH who satisfied the ACR criteria for a diagnosis of systemic sclerosis. Since this is a heterogenous condition, the particular disease manifestations of each individual patient were identified along with the corresponding treatment. This was compared to the recommendations laid down by EUSTAR.

**Results:** The degree of correlation between EUSTAR recommendations and the management of different aspects of systemic sclerosis at the Rheumatology Outpatient Clinic/MDH is being presented. The correlation was strong in the case of a number of aspects such as SSc-related vasculopathy but not as strong in some others such as gastrointestinal disease.

**Conclusions:** The management of various aspects of systemic sclerosis in Maltese patients seen at the Rheumatology Outpatient Clinic/MDH is in line with EUSTAR recommendations. A slight change in local practice will allow a more complete correlation that may translate into a better outcome for these patients.

## MSK 27

### The use of the sf36 questionnaire to assess the quality of life of patients with severe rheumatoid arthritis as well as the effect of treatment with a tnf inhibitor

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**Aims:** Quality of life is a multidimensional construct based on emotional or psychological wellbeing, physical functioning, social functioning, symptoms of the condition or disease and treatment of the condition or disease. Active rheumatoid arthritis (RA) adversely affects various aspects of a patient's quality of life (QOL). This may be assessed by means of generic quality of life instruments such as the SF36 where the higher the score, the better is the quality of life. In this study, the effect of severe RA on the QOL of ten patients has been assessed by using the SF36 questionnaire.

The efficacy of treatment of RA may be gauged by assessing its ability to improve patients' QOL. In this study the SF36 has also been used to assess the effect of introducing TNF inhibitor therapy on the QOL of ten patients with severe RA.

**Methods:** Ten patients with severe RA who attended the Rheumatology Outpatient Clinic/Mater Dei Hospital were administered the SF36 questionnaire. Values were obtained for the 8 domains in the questionnaire representing different aspects of QOL. The SF36 was then repeated 6 and 12 months after starting treatment with a TNF inhibitor.

**Results:** The values of the 8 domains of the SF36 were low prior to starting treatment with a TNF inhibitor reflecting the negative impact that severe RA has on patients' QOL. At 6 and 12 months there was a statistically significant improvement in each of these 8 domains: p values all < 0.05. This indicates the better QOL associated with effective disease suppression achieved by TNF inhibitors.

**Conclusions:** The use of the SF36 questionnaire allows a comprehensive assessment of the different aspects of QOL of patients with RA. It also allows assessment of the positive effect on QOL that results from suppression of disease activity achieved by antirheumatic drugs such as TNF inhibitors.

## MSK 28

### Correlation between the management of Maltese patients suffering from systemic sclerosis and EUSTAR recommendations

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**Aims:** Systemic sclerosis (SSc) is a multi-organ autoimmune disease characterised by fibrosis of the skin and various internal organs together with a vasculopathy. The treatment of this condition is a challenge because the pathogenesis is unclear and because it is an uncommon and clinically heterogenous disease affecting different

organ systems<sup>1</sup>. In May 2009 the EULAR Scleroderma Trials and Research group (EUSTAR) published a list of recommendations for the treatment of systemic sclerosis<sup>1</sup>. At the Rheumatology Outpatient Clinic/Mater Dei Hospital (MDH) a number of patients with SSc are followed up on a regular basis. This study has been undertaken to assess whether the management of these patients complies with the EUSTAR recommendations.

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**Conclusions:** The management of various aspects of systemic sclerosis in Maltese patients seen at the Rheumatology Outpatient Clinic/MDH is in line with EUSTAR recommendations. A slight change in local practise will allow a more complete correlation that may translate into a better outcome for these patients.

## MSK 29

### Dying to Give Birth

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**Aims:** Systemic Lupus Erythematosus (SLE) is a multisystem autoimmune disease occurring predominantly in women of childbearing age. It is characterised by autoantibody production and a dysfunctional immune system resulting in organ damage. The risk of complications and adverse foetal outcomes in pregnant women with SLE is high. Pregnancy can cause major flares making treatment difficult.

**Results:** Case report: We report a case of a 27 year old primigravida with SLE. Up to time of conception she was still having occasional flare-ups characterised by rashes and arthritis. At 32 weeks gestation she presented with pre-eclampsia (BP 120/85, oedema, proteinuria). Anticardiolipin antibodies were negative but acute phase markers were found to be grossly elevated (ESR 92mm/hr, CRP 93mg/l). IV methylprednisolone was given to control the SLE. Two days later she developed breathlessness, fever and tachycardia and echocardiography showed a pericardial effusion. A further steroid pulse was given. The following day she developed persistent epistaxis. Acute phase markers remained raised, platelets dropped from 159 to 64 and haemoglobin dropped to 7g/dL. FDPs were positive consistent with DIC. A decision was made to deliver the baby by emergency Caesarean section as mother was deteriorating acutely and a healthy preterm baby was delivered. Post-partum, she developed severe pulmonary oedema as a result of fluid overload and hypertension and was transferred to intensive care. Despite diuretics, severe fluid restriction and signs of clinical dehydration, the CVP failed to drop below 20mmHg, raising the possibility of lupus pneumonitis. Echocardiography revealed a pericardial effusion with multiple valvular dysfunction and evidence

of LVH. Gradually her condition improved over the course of a few days and she was eventually switched to oral steroids. She was on five different antihypertensives (methyldopa, two  $\beta$ -blockers, an ACE inhibitor and a calcium channel blocker) in an attempt to control her hypertension. Over several days, medication was weaned off and she remains stable.

#### Conclusions:

1. Pre-eclampsia can mimic SLE with both presenting as oedema, thrombocytopenia, anaemia, hypertension and proteinuria.
2. Majority of women do well if SLE is well controlled before conception.
3. Most pregnancies result in a preterm baby.
4. Multidisciplinary management is crucial for a successful outcome.

### MSK 30

#### Dermatomyositis masquerading as Pulmonary Fibrosis

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**Aims:** The inflammatory myopathies are a heterogeneous group of systemic diseases of unknown aetiology characterised by progressive proximal muscle weakness and inflammatory infiltrates in skeletal muscles. They are rare with an annual incidence of 5-10 cases per million and a prevalence of 50-90 cases/million. Incidence is bimodal, with the first peak in childhood (5-15 years) and the second peak in adult middle-life (30-50 years) Females outnumber males by 2-3 :1. Classical clinical features include difficulty in climbing stairs, rising from a sitting position and raising arms above shoulders, oropharyngeal dysphagia, malaise, fatigue and weight loss.

**Results:** Case report: We report the case of a 58 year old builder who initially presented with dyspnoea on exertion. Pulmonary function tests showed a restrictive defect. On further questioning the patient admitted to a three week history of increasing neck and shoulder pain. Examination revealed markedly weak neck extension with power of 3/5. He also exhibited a classical heliotrope rash, Gottron's papules, mechanic's hands and dilated nail fold capillaries with prominent dropout on capillaroscopy. Creatinine Kinase (CK) was found to be very high at 4119u/l, but ESR and CRP were normal as were myositis specific antibodies (MSAs). A muscle biopsy showed features consistent with polymyositis. A diagnosis of Acute Dermatomyositis was made. He was started on pulsed intravenous methylprednisolone and weekly methotrexate. There was an immediate dramatic improvement in muscle strength and CK dropped by 1000U/L every 2 days.

#### Conclusions:

1. Weakness of neck extensors is easily missed unless a careful physical examination is done.
2. Normal-CK active myositis occurs, particularly in dermatomyositis
3. Biopsy remains a valuable diagnostic tool, needle muscle biopsy is helpful and less invasive than open biopsy.
4. Acute phase markers are commonly normal or only slightly elevated.
5. Dermatomyositis responds better to medication than does Polymyositis.

6. Pulmonary involvement may be secondary to respiratory muscle weakness, pulmonary fibrosis, aspiration pneumonia or cardiac disease (congestive cardiac failure from myocarditis).
7. Myositis specific antibodies define clinical syndromes but relationship to pathogenesis is unknown.
8. There is a strong correlation between improvement and total dose of prednisolone given during first three months of treatment as well as the early introduction of methotrexate - so be aggressive!

### MSK 31

#### Identification of pharmaceutical care issues within the Rheumatology Service

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**Aims:** To identify pharmaceutical care issues in relation to patients seen by the Rheumatology Consultants as in-patients' and out-patients'.

**Methods:** Pharmaceutical care issues identified during official ward rounds with the Consultant Rheumatologists and at the Rheumatology Clinic were documented and categorized into either actual drug therapy problems requiring changes in the therapeutic process and plan or potential drug therapy problems requiring checks or assessment of the therapeutic process or plan. The drug therapy problems were further classified according to a standard categorisation system namely untreated indication, inappropriate medication selected, suboptimum dose, dose too high, failure to receive medicines appropriately, adverse drug reaction, medicine interaction, medicine use without indication, duplication of therapy, monitoring need, counselling need, seamless care needed and recommendation not accepted.

**Results:** A total of 2831 pharmaceutical care issues (median 94. IQR 495) were identified between January 2008 and March 2009 for four Consultant Rheumatologists. Of the total care issues which were categorized as either actual drug therapy problems or potential drug therapy problems, 87.5% (n=2478) were actual requiring an alteration or change in the drug therapy plan or process and 12.5% (n=353) were

potential drug therapy problems requiring further assessment of the therapy plan or process. The majority of the changes in the actual drug therapy plans were related to counselling needs (33.9%, n=839), seamless care (20.7%, n=513), untreated indication (20.5%, n=509), failure to receive medicines appropriately (9.1%, n=225) and medication use without indication (6.6%, n=163). The majority of the checks in drug therapy process identified was related to monitoring needs (85.8%, n=303). There was only 1 case where the pharmacist's recommendation was not accepted because it was deemed an early recommendation in the therapy plan.

**Conclusions:** Documentation of the pharmaceutical care issues identified during ward rounds and

the Rheumatology Out-Patient Clinic shows that clinical pharmacists complement other health care professionals with the aim of improving patients' quality of life.

### MSK 32

## Prescribing and monitoring practices of biological agents within Rheumatology Services

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**Aims:** To evaluate the prescribing, monitoring and assessment practices of prescribers using biological agents within the Rheumatology Clinic over a 3 year period.

**Methods:** The prescribing criteria, monitoring and assessment practices of rheumatology prescribers using biological agents were assessed. Local guidelines developed by one of the consultant rheumatologists based on guidelines established by the British Society for Rheumatology were used as gold standard.

**Results:** There was strict adherence to the British Society for Rheumatology criteria as to when to start biological agents. A similar adherence was also followed to the hospital policy whereby patients were started on etanercept as first line and changed only to infliximab or more recently to adalimumab in the presence of adverse drug reactions to etanercept or failure to achieve remission with etanercept. All patients (n=4) who were prescribed rituximab for their rheumatological condition had failed to achieve a response with various tumor necrosis factor inhibitors in accordance with internationally established criteria and hospital policy. All prescribers ordered a chest X ray together with screening for tuberculosis and hepatitis B prior to starting treatment with biological agents. A disease activity score, ESR, early morning stiffness, pain score and global assessment and a Health Assessment Questionnaire is carried out at baseline and during visits to the Rheumatology Clinic in collaboration with the Rheumatology Nurse Led Clinic. Patients are screened by the nurse specialist prior to the administration of infliximab and rituximab which are administered as an intravenous therapy. Patients on subcutaneous treatment are educated and monitored for appropriate self-injection techniques by the Rheumatology Specialist Nurse.

**Conclusions:** The prescribing, assessment and monitoring trends of tumour necrosis factor inhibitors and the biological agent, rituximab over a 3 year period adopted by the Rheumatology Clinic team follow guidelines established by the British Society for Rheumatology on which the local hospital protocol and guidelines are based.

### MSK 33

## The Antiphospholipid Antibody Syndrome - A Spectrum of Symptoms

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**Aims:** Case Reports

**Results:** The antiphospholipid antibody syndrome is a prothrombotic syndrome. Almost uniquely it results in arterial as well as venous thrombosis and is marked by the presence of circulating antiphospholipid antibodies. It may be primary or secondary to an underlying connective tissue disorder, although the clinical features are similar in both conditions. We report five cases of patients with antiphospholipid antibody syndrome and highlight the different presentations of these patients. Our first case

describes a 74 year old lady who presented with a cerebrovascular accident and had a past history of a deep venous thrombosis. She was started on lifelong anticoagulation. Our second patient is a 47 year old lady with a history of lupus since 19 years of age, who presented with a transient ischaemic attack. The third case is about a 17 year old lady who initially presented with Raynaud's phenomenon in her left medial three fingers and was treated with intravenous prostacyclin, aspirin and amlodipine. She has recently developed a photosensitive rash and arthralgia of her fingers. The fourth case is a 26 year old man who presented with refractory thrombocytopenia. He subsequently died of a brain hemorrhage. The last case describes a 12 year old girl who presented with a deep venous thrombosis and subsequently suffered a cerebrovascular event.

**Conclusions:** The literature is reviewed.

### MSK 34

## A Case of Fragile Bones

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**Aims:** Case Report

**Results:** An unusual and interesting case where in retrospect, a lady was found to have an ectopic mediastinal parathyroid adenoma after presenting with hypercalcaemia and multiple pathological fractures. The incidence of mediastinal ectopic parathyroid adenomas among all parathyroid adenomas ranges from 1.3 to 2.4%. This case outlines the importance of investigating a possible underlying cause for pathological fractures which might be contributing to the presenting condition. It is a wake-up call for more vigilance when such cases are encountered to identify an important diagnosis which is curative and has the potential to restore the quality of life for a patient.

Mrs CM is a 51 year-old lady who presented to the orthopaedic surgeons with fractures of the right femur and the right humerus both sustained after separate falls. She was otherwise asymptomatic. The humeral fracture was treated with a sling whilst open reduction and internal fixation was performed for the femoral fracture. A biopsy was taken from a cyst in the femur which revealed an osteoclastoma and no malignancy on histological examination. The diagnosis of a Brown's tumour was made. A serum calcium level was taken which revealed hypercalcaemia of 4.29mmol/L. She was then referred to the endocrinology team, further investigations were taken, and the patient was started on an intravenous infusion of normal saline 1 litre every eight hours, frusemide 40mg IV tds and pamidronate 60mg IV daily. A full hormone profile including serum parathyroid hormone level (PTH) was taken. The PTH level was 739pg/ml and subsequently kept rising to 1565pg/ml over a period of 2 weeks. Calcitonin was <2pg/ml. An ultrasound scan of her neck did not show any abnormalities.

Thyroid and parathyroid scintigraphy revealed a probable ectopic mediastinal parathyroid adenoma. She was further investigated by a CT chest which did not reveal any lung lesions. The cardiothoracic surgeons performed a total excision of a greyish tumour in the anterior mediastinum through a median sternotomy. Histopathological examination of the lesion revealed a hyperplastic ectopic parathyroid gland in an atrophic thymus. The patient was then started on calcium carbonate 1g tds and Vitamin D3 1mg bd. Serum PTH level 6 weeks after the excision was normal at 42pg/ml.



**Conclusions:** It is relatively common in medicine that a seemingly common presentation leads to a more complicated and broader picture. A fracture of a bone sustained after trauma might easily be treated routinely, but as this case highlights, there can be more than meets the eye. The diagnosis in this patient involved many investigations and contributions from different specialities. Multidisciplinary input and persistence by the treating physicians helped achieve a definite diagnosis, permanent cure and a normal life for this patient.

## PUB 1

### Smoking in medical/dental students at the University of Malta

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**Aims:** To answer the questions: What is the prevalence of smoking amongst medical students in Malta? How much do medical students in Malta smoke and what are the best deterrents to smoking amongst medical students in Malta?

**Methods:** All medical students enrolled in the five years of the curriculum of the medical school in Malta in the academic year 2007/2008 were eligible for participation in the study. Dental students in the first two years of their course were included, as they share the same curriculum up to that point. The response rate was 82.9 %.

Data collection was performed during lectures mandatory for all students, using an anonymous, confidential and self-reported questionnaire based on a questionnaire used by WHO MONICA project

**Results:** Of our study population, 82.5% respondents were non-smokers, 12.3% were current smokers whilst 5.2% were ex-smokers. Most non smokers (57.9%) and ex smokers (53.8%) stated that they do not smoke for health reasons. The other most cited reasons were bad odour (20.0% ex-smokers, 16.3% non-smokers) and expense (6.67% ex-smokers, 6.1% non smokers). 47.2% of smokers smoked 0-5 cigarettes a day. 22.2% smoked 6-10 cigarettes a day whilst 19.4% smoked 11-20 cigarettes per day. The remainder (11.1%) did not disclose the amount smoked. 48.4% of current smokers have tried to quit unsuccessfully in the past.

**Conclusions:** Our study confirms that the smoking prevalence among medical students in Malta is high. The literature suggests that medical students who smoke may become doctors who may not be as effective as other non smoking doctors in advising and succeeding in getting their patients to quit smoking. We therefore recommend relevant health authorities recognize the importance of targeting this specific population and that free counselling and medications are provided to help them quit during medical school. It is also necessary for students to be taught effective methods of smoking cessation counselling to be more effective as future doctors.

## PUB 2

### Eat, drink & be merry - the health of young people in Malta

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**Aims:** The Health Behaviour of School-aged Children study aims to gain insight into, and increase understanding of young people's health and well-being, their health behaviours and the social context in which they live, learn and play. The paper will present the local study and results, and will discuss its strengths and constraints in some detail.

**Methods:** The study investigates the positive aspects of health as well as risk factors for future ill-health and disease. It takes a social as opposed to a purely biomedical research perspective, studying the social, environmental and psychological influences or determinants of child and adolescent health and health behaviour. The study targets 11, 13 and 15 year olds and the cohort is chosen through cluster random sampling. The research tool is a self-administered questionnaire that covers health-positive and health-negative aspects of behaviour and habits, perceived environmental conditions, self-reported health and demographic variables.

**Results:** Local results of the study have been surprising and became the topic of much public discussion. Some of these results will be discussed here, and offered as food for thought for the way forward in the promotion of the health of young people.

**Conclusions:** The paper will conclude by discussing the outcomes of the study in informing health policies that have a direct influence on the health of the future population of Malta.

## PUB 3

### A study of stress levels amongst health care staff working in two older persons institutions using the Effort Reward Imbalance Model

*C. Borg*

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**Aims:** Identifying occupational stressors amongst health care staff working in these environments. Explore the intensity of these stressors. Identify the main stressors present in these environments such as intrinsic, extrinsic and reward stressors. Investigate level of job satisfaction. Identify the relationship between Effort Reward Imbalance to physical, psychological exhaustion and health.

**Methods:** Descriptive Correlation design using qualitative and quantitative data.

**Results:** The most frequent and intense stressors reported by employees were oriented mainly towards management, extrinsic demands, low rewards and to intrinsic issues.

**Conclusions:** Organisations need to have adequate staffing, policies to decrease stress from excessive workload, a more decentralised management and organising educational programmes on leadership and management training.

## PUB 4

### Misclassification of data between health interview & health examination surveys

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**Aims** To assess the degree of misclassification between self-reported morbidity data and data arising from examination surveys.

**Methods:** In health interview surveys, respondents are asked whether they have ever suffered of any condition. That implies that a proportion of the 'no' respondents would have the condition but would not be aware of it yet. A health examination survey would screen respondents for evidence of the condition. Using the MONICA 1984 dataset, this degree of misclassification was estimated for a number of conditions about which respondents were first asked and then screened.

**Results:** A lifetime history of high blood pressure was reported by 19% of the study population. Upon examination, 48% were found to have high blood pressure. Higher misclassification was reported on hypercholesterolaemia, of which only 2% were aware of this condition while 78% had their blood cholesterol above normal limits. Such misclassification appears to occur less in higher educated individuals, but increases with age of the respondent.

**Conclusions:** The estimates observed in the MONICA study in Malta tally with most other estimates in other population, ranging from Finland to Southern Italy. Policymakers should understand that, when health interview surveys highlight a problem, this is likely to be even more severe in reality. Statistical methods are being studied to address this misclassification by estimating differential corrective factors from health examination surveys to cheaper and more frequent data from health interview surveys. However, using twenty-year old estimates to correct recent data may result in serious biases and erroneous estimates. For this reason, a new health examination survey is sorely required.

## PUB 5

### Uterine Cervical Screening in Malta

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**Aims:** Incidence and mortality rates of invasive uterine cervical cancer in the last 36 years maintained a steady trend, with minor fluctuations, in spite of the fact that screening services have become more available in these last 2-3 decades. The aim of this study is to analyse for the first time the situation of cervical screening activity on the islands.

**Methods:** The data collection included all the cervical cytology examinations performed from 2003 and 2005. Data was collected from 7 laboratories (1 public and 6 private) which between them perform all the cervical screening activity in Malta.

**Results:** The data revealed that on average 30,000 smears are performed annually. Organised cervical screening programmes usually cater for women aged between 20 and 69 years of age. Based on population estimates of mid-2004 the number of Maltese women in this age group amounted to 132,473. If an organised screening programme is implemented in the near future, and the target population is invited for screening every 3 years, this will amount

to 44,000 annually. Our opportunistic screening programme to date is attracting 66% of the target population.

The data also revealed a number of interesting findings in the distribution of cytological examination by age group. Smear taking peaked between the ages of 25 and 49 years. The activity started to slow down from age 50 years, followed by an even sharper drop in the 6th. and 7th. decades of life. These results contrast with the normal expectations of an organised screening programme, since in most countries wherever such a programme is operating, invitations to women are sustained up to 70 years of age.

**Conclusions:** As a result of this study one can for the first time analyse the situation of cervical screening activity on the islands. This can be used to assess the current situation so as to identify problems of attendance in specific age groups. This should eventually lead to a number of proposed changes which should improve the uptake of cervical screening on the Islands. The study was performed as part of the Eurochip 2 programme within the Health and Consumer Protection Directorate General.

## PUB 6

### Sexual Health within the Maltese population

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**Aims:** To outline the rate of sexual activity within the Maltese population and its relation to socio-demographic variables and chronic illness. To outline trends of contraceptive use and its relation to major socio-demographic variables.

**Methods:** These results are taken from the Malta 2008 European Health Interview Survey; a self-reported questionnaire conducted through face-to-face interviews. The survey was conducted on a random sample of 5,500 individuals. A weighted stratified sample was used on a resident population register of individuals aged 15 years and over. The sample was stratified by age group, gender and locality of residence. A response rate of 72% was achieved. Cross tabulation and multiple regression analysis was used to outline the relationship between socio-demographic variables, sexual activity and contraception use.

**Results:** Of the population, 79.7% (n=2930) reported having had sexual intercourse with a mean self-reported age of first sexual encounter of 21 years. Age of first intercourse varies significantly with age and education. 86.7% (n=2539) were sexually active in the previous 12 months with 55.5% reporting the lack of contraceptive use in the same time period. The most common forms included withdrawal (26%) and condom use (24%). There are no significant differences in use of contraception and gender.

The lack of usage of contraceptive measures increases with age and lower education levels; of those respondents completing tertiary education 29.7% claimed always to use contraception compared to those having only completed their primary education (1.2%) or secondary education (11.6%). Region also affected contraceptive use with Gozo and the South Eastern district showing the least use of contraceptive measures whereas the Northern district showed greatest response of contraceptive use. An increase in income was also related to and improved use of contraception. (p=0.05)

A number of chronic diseases including stroke, osteoarthritis, chronic anxiety and chronic depression showed significant decreased activity. (p=0.05)

**Conclusions:** Contraceptive use appears to be dependent on age and educational level. There was no difference in contraception use with gender. The most commonly used forms of contraception are withdrawal and condom. The use of contraception decreases with age. The level of sexual activity is affected negatively by a number of chronic diseases.

## PUB 7

### Maternal awareness of health promotion messages, parental obesity and obesity in preschool children: cross sectional study

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**Aims:** To assess the impact of maternal awareness of public health promotion messages: “Positive Health Behaviour” and “Healthy Eating Habits” on parental overweight and obesity, and on the risk of obesity and the risk of being overweight in three-year old preschool children.

**Methods:** Data were collected on the height and weight of two hundred randomly selected three-year old children accompanied by their parents. Data of height and weight of accompanying parents were also collected. Parental socioeconomic status, details of the children’s early feeding and dietary styles and level of health promotion awareness on healthy eating habits were assessed in face-to-face structured health interviews with the accompanying parents.

**Results:** were marked statistically significant relationships between childhood obesity and parents’ obesity ( $r=0.2$  for both mothers and fathers;  $p<0.001$ ). A higher proportion of obese and overweight preschool children had no maternal awareness of health promotion/health education as compared to children with normally accepted weight ( $\chi^2(6, N=200) = 17.32, p=0.008$ ). The prevalence of obesity in children, whose mothers had no awareness of health promotion/education on healthy eating habits, was 7% as compared with 2% in children whose parents had full awareness. The prevalence of overweight in children, whose mothers had no awareness of health promotion/education on healthy eating habits, was 14.5% as compared with 9.5% in children whose mothers had full awareness. Full maternal awareness of health promotion on healthy eating appears to have a protective effect against the development of obesity/overweight in three year old children (odds ratio 0.38, 95% CI 0.20 to 0.70). A higher proportion of obese and overweight mothers had no awareness of health promotion/health education as compared to mothers with normally accepted weight ( $\chi^2(4, N=200) = 13.29, p=0.01$ ). This result was not statistically significant for fathers ( $\chi^2(4, N=200) = 4.57, p=0.33$ ). Full maternal awareness of health promotion on healthy eating appears to also have a protective effect against the development of mothers’ obesity/overweight (odds ratio 0.51, 95% CI 0.28 to 0.95).

**Conclusions:** Childhood obesity is emerging as the epidemic of the millennium gradually becoming a pandemic if a more concerted effort is not undertaken. This study demonstrates that maternal awareness of health promotion/health education has a protective effect against maternal obesity and preschool childhood obesity in a developed country. Additionally, this study showed that overweight and obese preschool children had parents who were also overweight and obese.

## PUB 8

### Increasing public awareness on salt and health as part of the National Salt Initiative

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**Aims:** This is a case report that aims at increasing awareness on salt and health amongst the general public.

**Results:** In line with the White Paper on A Strategy for Europe on Nutrition, Overweight and Obesity related health issues, Member States expressed their opinion to start to work together on salt reformulation. Malta was one of the Member States that committed itself to working on such an initiative. A European framework on salt reduction was developed that aimed at reducing salt intake at population level in order to achieve the World Health Organization recommendation – 5g of salt per day. The framework consisted of five key elements. One of these was to develop actions to raise public awareness. In February 2009, Malta held its first National Salt Awareness Week in collaboration with the World Action on Salt and Health (WASH). A campaign titled ‘A Pinch of Salt Only’ was launched. This was later developed through World Hypertension Day in May 2009. A small-scale survey that observed the impact of the campaign and the level of awareness amongst the general public also took place to evaluate the National campaign.

**Conclusions:** Raising public awareness supports reformulation action. However monitoring of activities that target the public in raising awareness are required to be carried out more extensively. This will determine the overall impact as well as the next step that needs to be taken in order to continue to increase awareness. Therefore measuring the awareness level of consumers and their behavioural change as well as salt intake via sodium excretion surveys are greatly recommended in order to achieve the aim of public awareness campaigns.

## PUB 9

### National Hospital Information system (NHIS) - Gozo General Hospital Activity Analysis

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**Aims:** The Hospitals Information System (NHIS) at the Department of Health Information and Research (DHIR) aims to eventually collect hospital activity data from State and Private Hospitals. The collected data would be able to answer hospital health care data requests at a National level from local and International Organisations.

The System has been collecting and storing, for and on behalf of Gozo General Hospital, activity data from the Hospital’s acute wards from July, 2004.

**Methods:** Data collection is episode based and is in paper format. The data is validated at DHIR and is then entered into a dedicated Gozo General Hospital Activity Analysis database. Data collection and data entry into the database is in the format recommended by the “European Hospital Minimum Dataset”.

Data fields stored in the database include:

- Patient demographics,
- Date of admission to hospital,
- Method of admission i.e. booked / emergency / day care,
- Care type given,

- Transfers to other wards within the same episode of care,
- Date of discharge from hospital and length of stay in hospital in days,
- Method of discharge from hospital i.e. on medical advice, at patient's request, or dead,
- Main diagnosis for the episode of care and any co-morbid conditions – coded in ICD10 (WHO),
- External cause in cases of admissions following accidents or injuries i.e. how the patient sustained an injury – again coded in ICD10,
- Surgical and non surgical procedures performed during the episode of care.

**Results:** Data capture and storage into the hospital activity database has improved considerably over the past four years. The 2008 Gozo General Hospital activity database has records for 5863 episodes of care. 26.9% of these were for day cases. There are records for 4287 episodes for inpatient care and these accounted for 20649 hospital days. Their average length of stay in hospital (ALOS) was 4.82 days.

**Conclusions:** The most common diagnoses in, and surgical procedures performed on day cases will be illustrated. Percentages of the most common diagnoses and length of stay for inpatients will also be demonstrated.

## PUB 10

### Maternal demographic changes over the past 10 years in the Maltese islands

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**Aims:** To describe any maternal demographic changes on the Maltese Islands over the past ten years. Background: Maternal demographic factors including maternal age, nationality and marital status have all been documented to have impact on both maternal and infant outcomes. Younger and older maternal ages, unmarried marital status and mothers from ethnic minority groups have all been associated with adverse pregnancy outcomes including preterm births and increases in perinatal mortality. Detailed national medical births data has been collected for the Maltese Islands since 1999; it is now possible to describe accurately maternal demographic trends over the past 10 years. These changing trends have public health implications related to the associated outcomes.

**Methods:** Data from the National Obstetrics Information System (NOIS) was used. Data for every delivery is collected from all hospitals on the Maltese Islands once the mother delivers her baby. Data is processed and computerised at the Department of Health Information and Research. Anonymous case based data for all deliveries between 1999 and 2008 was used and analysed in this project.

**Results:** A total of 39,878 deliveries were recorded on the Maltese Islands between 1999 and 2008. A statistically significant increase in the absolute numbers and rates of teenage mothers was found. The proportion of mothers in the older age group over

35 years has, on the other hand, shown a statistically significant decreasing trend. The proportion of foreign national mothers has more than doubled from 4.5% to 9.7% in 10 years. The largest increase was seen in mothers of sub-Saharan nationality, from 0.16% (7) in 1999 to **1.64% (68)** in 2008. A significant increase was also seen at a lesser degree in mothers of Russian Nationality from 0.26% (11) in 1999 to **1.04% (43)** in 2008. In 2008 mothers of Sub-Saharan African nationality constituted the second largest group of non-Maltese national mothers following mothers of European nationality. Single marital status was found to have increased very significantly from 9.7% to 24.0% of all deliveries.

**Conclusions:** The recorded trends of increasing mothers in the younger groups, increasing number of foreign national mothers and unmarried mothers which are all associated with adverse outcomes highlight an increasing challenge to maternal and infant health care.

## PUB 11

### Analysis of Fatal Traffic Accidents in Malta over the period 1995-2006

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**Aims:** Though fatal traffic accidents in Malta are less common than the European average, deaths from motor vehicle accidents (MVAs) commonly occur in younger age groups. This study aimed to analyse factors associated with fatal MVAs in order to expand the knowledge and database already available. This may serve interested parties in formulating and implementing public health preventive measures.

**Methods:** All deaths due to MVAs between 1995-2006 which were registered in the National Mortality Register were linked to toxicology reports and further information was obtained from autopsy reports. Information regarding site, time of accident and vehicle involved were obtained from media reports.

**Results:** There were 213 deaths due to MVAs in the ICD10 codes V01-V89, an average of 18 deaths per year. This included deaths in residents and non residents. The majority of deaths, 83% were males and average age at death was 39.5 (median age: 33 years). For fatal accidents for which information about site of accident (184) was available, 93% of accidents occurred in Malta and only 7% occurred in Gozo. Foreign deaths accounted for 17 deaths, the majority of which (65%) were pedestrians.

Average age at death for both drivers and passengers was much younger (31 and 24 respectively) than that of pedestrians (58 years). Half of all deaths occurred at the site of accident. This was much commoner in drivers and passengers, while many of the pedestrians made it to hospital. For drivers dying at site of accidents for whom toxicological analysis was performed (42 deaths), 38% were found to have alcohol levels above 80mg/100 mls. The majority (81%) of fatal accidents involving alcohol occurred at night. Illicit drugs were only involved in 2 out of the 42 deaths. Main roads were often involved.

**Conclusions:** Deaths involving drivers were all in males. Alcohol involvement was quite high and often associated with night driving. Passenger deaths involved persons of a young age and often injuries sustained led to instantaneous death. Education and Law enforcement with regard to drink driving and speeding is

essential. Foreigners dying from MVAs were commonly pedestrians and better road signing about direction of traffic may prevent future deaths of this kind.

## PUB 12

### Hypospadias in Malta between 2001 and 2005

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**Aims:** To describe the epidemiology of hypospadias in Malta between 2001 and 2005, identifying the characteristics and demographic information of cases and their mothers.

**Methods:** This descriptive study includes all male infants born and diagnosed with hypospadias and registered in the Malta Congenital Anomalies Register of the Department of Health Information and Research between 2001 and 2005. Male cases who also suffered from a syndrome (n=2) were excluded from further analysis. Microsoft Excel and SPSS version 16 were used for analysis.

**Results:** There were a total of 89 male infants born and registered with hypospadias between 2001 and 2005. The overall prevalence rate of hypospadias in male infants in this period was 87.3/10,000 male live births. Of the cases of hypospadias registered, 62.9% were coronal or glandular, 30.3% were penile, 1.1% were penoscrotal, 1.1% were perineal and 4.5% were unspecified. 24 cases also had chordee (15 of the cases with penile and 9 of the cases of coronal or glandular hypospadias). All infants were born alive, with a mean birth weight of 3124g (CI: 3001, 3247) and a mean gestational age of 38 weeks (CI: 37.5, 38.5). Among cases, there were three twin pregnancies, one of which resulted in two male infants with hypospadias. Maternal conditions included gestational diabetes, epilepsy on treatment, thalassaemia trait, depression and glucose 6 phosphate deficiency. However, these numbers were very small. All the cases of hypospadias were born to mothers of Maltese nationality. The mean body mass index of the mothers was 26 kg/m<sup>2</sup> (CI: 25.5, 25.7), the mean maternal age was 27 years (CI: 25.8, 28.2), 67.4% were primiparous and 11.2% smoked before or during the pregnancy.

**Conclusions:** This study describes various characteristics of infants born with hypospadias and their mothers. It is a good foundation for future case-control studies which could assess these characteristics and compare them with rates in infants born without hypospadias. Such further studies are also warranted to identify any significant risk factors associated with hypospadias in Malta in the light of findings from international studies.

## PUB 13

### An Audit of Smoking Cessation Attitudes and Practices amongst Doctors at Mater Dei Hospital

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**Aims:** To perform an audit of attitudes towards smoking cessation and techniques recommended by doctors at Mater Dei Hospital.

**Methods:** A validated closed ended questionnaire containing eighteen questions was given by hand to all house officers and senior house officers working in the medical, surgical and A&E departments. The subjects were asked to rank by frequency of

use and perceived effectiveness the various smoking cessation techniques. Other questions targeted attitudes towards smoking cessation as a public health measure and the amount of time spent on smoking cessation measures per patient. Respondents were also asked how informed they felt about the individual techniques on a scale from one to ten, the doctor was considered adequately informed if the score was greater than 5. The collected data was inputted into an excel sheet and analysed using microsoft excel.

**Results:** 47% of questionnaires were returned (no= 58). When asked about which technique is used most frequently, none of the respondents prescribed nicotine replacement therapy (NRT) or bupropion as a first line smoking cessation technique, 48.3% simply told the patient to stop, 10.3% counselled on a single occasion, 8.6% counselled on more than one occasion while 1.7% referred to an intensive support group, 31% gave an invalid answer. More than 68% of doctors felt competent at counselling, less than 52% felt confident using NRT or bupropion alone or in combination with counselling and 65% of doctors felt they knew how to refer to an intensive support group. Combining NRT, bupropion and counselling were perceived as the most effective technique, followed by referral to intensive support groups. Prescribing NRT or bupropion alone without counselling were perceived as the least effective. 39% of doctors thought they spent an adequate amount of time on smoking cessation with each patient. It resulted that 89% would prescribe NRT more frequently if it were available for free.

**Conclusions:** While the use of NRT, bupropion and intensive support groups have been demonstrated to be effective smoking cessation tools, their use at Mater Dei Hospital needs to be further encouraged.

## PUB 14

### The National Cancer Plan 2010-2015

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**Aims:** The aims of the National Cancer Plan 2010-2015 are:

- Preventing inherently preventable cancers
- Providing accessible and high quality cancer services geared towards improving survival and quality of life of the cancer patients and their carers

**Methods:** Interventions include:

Consolidation of inter-sectoral partnerships to address cancer prevention: reducing tobacco and alcohol consumption, encouraging healthy dietary lifestyles, and addressing occupational and environmental exposures, across all strata of society. The launch of the Breast Cancer Screening programme and the carrying out of an assessment of the feasibility and resources needed for national screening programmes for other cancer sites.

The implementation of the reform in primary health care especially through the augmentation of the role of primary healthcare practitioners (especially family doctors), in early detection and co-ordination of cancer care. This shall be co-ordinated through the set-up or updating of clinical guidelines in the major fields of cancer care, fast-tracking cancer referrals, improving access to electronic clinical records and expanding oncological and palliative care services. Diagnostic imaging, diagnostic and therapeutic surgery, pathology, pharmacotherapy and radiotherapy services shall be

improved through ongoing recruitment, training and specialisation of staff, evaluation and addition of new drugs to the government formulary, purchasing and modernizing of equipment, and exploring new techniques and collaboration with reference centres. Financial control systems for purchasing and distribution of pharmaceuticals, and the expansion of the government formulary relative to cancer drugs will be further developed. New methodologies for financing emerging cancer drugs will be explored and implemented. The inception of a human resource plan to augment the capacity of the generic and specialised workforce needed for the expanded cancer services. The patient will continue to be central and will be empowered by providing information, improving communication skills of staff, ensuring greater observance of patient's rights, and facilitating self-care and a return to an active life. Palliative care provision will be strengthened by the setting up of a dedicated unit at the new Cancer Hospital, increasing planned respite facilities, improving the provision of community palliative care and enhancing patient psychological and spiritual support, and service-provider psychological support.

A national infrastructure for the coordination of cancer research will be established and surveillance will be strengthened, so as to monitor disease prevalence and survival and document the quality of cancer services and their outcomes. Cancer research will focus on molecular science and genetics, cancer services and public health issues including epidemiology.

## PUB 15

### Sexual History and Education in Casualty

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**Aims:** To assess how often and in which way Casualty doctors take a sexual history, and offer advice on sexual health in adolescents aged 11 to 25 presenting to Casualty with genito-urinary (GU) complaints or fever of unknown source (FUS).

**Methods:** This was an audit collecting data in the form of an anonymous questionnaire distributed to house-officers, BSTs and HSTs working in casualty during June and July 2009. Data collected included frequency of asking sexual history, which questions were asked, factors influencing taking such a history, and whether advice about sexual health was given. Doctors gave their opinions about their current practices grading the frequency as never, seldom/sometimes or frequently/always.

**Results:** 12 questionnaires were returned. 66.7% of doctors frequently see adolescents presenting with GU complaints or FUS. 66.7% frequently thought it relevant to take a sexual history, and 83.3% consistently proceeded to do so. The question most frequently asked was whether the patient was sexually active. Only 25% asked about the form of protection used. Factors influencing whether a sexual history was taken included whether the patient was accompanied (63.3% when unaccompanied versus 33.3% when accompanied); and age of patient. All doctors take a sexual history in adolescents aged over 21 versus 41.7% in adolescents between 11 and 15 years. 45.4% often felt that the environment of Casualty was a determining factor in their taking the sexual history. 66.7% of doctors thought it was often important to offer advice about sexual health, and 58.3% consistently gave it. 54.2% of doctors advised the patient to attend GU clinic, their gynaecologist or their G.P.

**Conclusions:** Adolescents with GU complaints or FUS are a common presentation in Casualty. Often these patients need counselling about sexual health. Most doctors take a sexual history in such cases.

The environment of Casualty is often a determining factor whether a sexual history is taken or advice given. This is probably related to time constraints and lack of privacy.

The majority of doctors still offer advice regarding sexual health issues, thus Casualty doctors can contribute to this important issue in Public Health.

## PUB 16

### Injury database 2005 - 2008: Gozo General Hospital

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**Aims:** The Injury Database (IDB), commissioned by the EU and initially set by DG Sanco, is based on a systematic injury surveillance system that collects data from emergency departments and comprises existing data sources, such as causes of death statistics and hospital discharge registers. Main aims are:

- to provide all stakeholders at Community and Member State level with the best available statistical information about the magnitude of the problem, the affected population groups and external causes
- to establish a basis for the formation and implementation of evidence-based injury prevention strategies,
- to promote safety issues and public health research

**Methods:** On patient's arrival, A & E staff fill in a specific form with standard information harmonized with that collected by other Member States. Completed forms are forwarded to the Department of Health Information and Research (DHIR) where they are coded against the IDB Coding Manual Data. All data is then entered into the main database.

Cross links are carried out quarterly with the National Death Register and the Hospital Discharge Register in order to capture injuries and injury-induced deaths that bypass the A & E Department.

**Results:** From 2005 to 2008 patients recorded at A & E, Gozo General Hospital suffering from injuries were 5,900. 63.9% of the injured were males. There were more injured males than females in the young to middle-age. 41.2% of all accidents recorded occurred within the home (residential area), and 20.4% on the streets (transport areas). Most frequent accident mechanisms, 66.2%, are of blunt force nature (mostly falls). Cutting, piercing or penetrating force follows with 13.6%. 27% of injuries were due to objects in building, building components or other related fitting. Material not elsewhere classified comprises 22% (including wood, gravel, sand, processed surfaces, stone and metal).

**Conclusions:** Whilst females have significantly more accidents at home than males, this trend is reversed at place of work, mostly in industrial areas. Type of activity during injury is still under-reported. Combining activity data with place of occurrence will help identify the responsible sector and may thus help guide the development of more effective injury prevention and control strategies.

## PUB 17

### Alcohol and tobacco consumption within the Maltese population

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#### **Aims:**

- Outline the rate of reported alcohol and tobacco consumption within Malta.
- Outline any relationships between socio-demographic variables and alcohol and tobacco consumption.

**Methods:** These results are taken from the Malta 2008 European Health Interview Survey which is a self-reported questionnaire conducted through face to face interviews. The survey was conducted between June and August 2008 on a random sample of 5,500 individuals. For sampling, a weighted stratified approach was used on a resident population register of individuals aged 15 years and over. The sample was stratified by 5 year age groups, gender and locality of address. A response rate of 72% was achieved. Nominal regression analysis was conducted to outline the relationship between socio-demographic variables and the consumption of alcohol and tobacco.

**Results:** From 2002 there has been a marked reduction in the amount of daily smokers but an increase in the amount of occasional smokers. There are significant independent relationships between smoking and gender, age and education. There are more daily male smokers than female smokers. As age increases daily smoking increases with a peak of 26% in the 45-54 age group. The peak for occasional smoking is 9.8% in the younger age group. Daily smoking is highest amongst those with a secondary level of education.

Alcohol consumption has also increased since 2002. The reported rate of monthly consumption tripled while for weekly consumption it is 6 times higher. Rates of alcohol consumption are independently related to gender, age, education and income. Men consume more alcohol than women. Weekly alcohol consumption amongst women shows a peak in the 15 – 24 age group (15.1%) while for men the peak is in the 25 – 34 age group (27%). Weekly alcohol consumption increases as education increases while daily consumption is quite constant in all education levels. Weekly consumption is also highest amongst the highest income group ( $\geq \text{€}1979$ ).

**Conclusions:** Daily smoking rates have dropped in the past 6 years but alcohol consumption rates have increased. Socio-demographic variables play an important factor in smoking and alcohol consumption habits. Age and gender show the most prominent patterns.

## PUB 18

### Feasibility of the implementation of a National Hospital/Clinic Minimum Dataset

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**Aims:** A Harmonized Data Collection system would lead to the implementation of the National Hospital/Clinic Minimum Data Set (NHCMDs). This would include a set of indicators that are required from all health care providers in the country. The rationale of such a

system would be to obtain good quality comprehensive data for the purposes of local services management.

A National Hospital/Clinic Minimum Data Set is a minimum set of data elements agreed for mandatory collection and reporting at national level. NHCMDs is compiled from raw data from establishments within national health systems. The demand for this data has increased substantially over recent years; at the same time, there is also a growing concern about the lack of comparability in the data collection. This has led to a joint effort by the Organization for Economic Co-operation and Development (OECD), European Commission (EC), and World Health Organization (WHO), together with the member states including Malta, to improve the comparability of data by agreeing on common boundaries and breakdown categories.

Implementation of a policy such as the introduction of NHCMDs is in the hands of many different groups of people, all of whom maybe involved in policy formulation. It is necessary to mobilize sufficient power to execute a policy such as this, and this depends a great deal on the policy environment and the country's beliefs, culture and legal structures.

**Methods:** All the public and private health establishments were invited to participate in this study with a response rate of 100% from public institutions and 73% from private entities. A self administered questionnaire was formulated by the researcher and used to collect the data. Quantitative data were analysed using statistical tests whilst qualitative data was analysed by context and thematic analysis.

**Results:** Findings from the research showed that some of the institutions that participated already knew about NHCMDs whereas others did not. Differences in the data availability and in the format – whether paper based or electronic or both were noted between the institutions participating. Other findings specified the establishments' views on the current situation, together with the participants' attitudes towards the change processes needed to introduce such a data collection.

**Conclusions:** Some resistance to change can be expected but implementation will be facilitated if reasonable explanation as to why the data collection is needed and the gain perceived from this implementation is offered to the staff at the health institutions. These local experiences together with other countries efforts in the implementation of this data system shows that it is possible to implement NHCMDs and have a detailed ongoing and working updated data system. Many difficulties are likely to be encountered and only hard work and goodwill from everyone involved will obtain the much desired results which is that of a national, good quality data collection system.

Creating ownership for this data collection system and demonstrating acceptance towards the implementation of all changes in this system brings about leaders or administrators of the participating institutions to act by giving examples to their respective staff and to develop an environment where a compelling 'case' for change is truly needed, so that all stakeholders support it.

## PUB 19

### Risk assessment of vector borne diseases in Malta

*T. Celillo Fenech, G. Spiteri, C. Gauci*

**Aims:** identify the main vector borne diseases with public health relevance occurring in the Maltese islands.

**Methods:** Collection of already published data on vector borne diseases in Malta and further information obtained through meetings held with local specialists working in these fields. Field missions were also done in different sites in Malta and Gozo for mosquito and sandfly surveillance.

**Results and Conclusions:** The vector borne diseases were prioritized according to current public health impact, proven presence of the vector and like hood for vector presence.

*Priority 1:* Leishmaniasis, Rickettsial disease, West Nile fever.

The causative agents, *Leishmania infantum* are transmitted by sandflies in Malta, the vectors *phlebotomus papatasi* and *p. perniciosus* have been found to be present in Malta. Leishmaniasis is an increasing threat in Mediterranean countries including Malta and further investigations need to be done to understand the aetiology of Cutaneous Leishmaniasis.

*Rickettsia conorii* which causes Mediterranean spotted fever is transmitted by *Rhipicephalus sanguineus* or dog tick. The small number of reported cases locally is due to lack of biological confirmation of clinical cases as well as limited diagnostic capacity.

West Nile fever has never been diagnosed in Malta but mosquito vectors like *Culex pipiens* are present locally. The virus may be introduced by migratory birds. With the vector present and outbreaks of WNF occurring in neighbouring countries it is reasonable to assume that the disease may occur in Malta.

*Priority 2:* Sandfly fevers

Sandfly fevers caused by phleboviruses such as Toscana or Sicilian sandfly viruses, which clinically present as mild neuro-invasive illness have never been diagnosed on the islands however the vector *Phlebotomus papatasi* has been found to be present on Malta.

*Priority 3:* Crimean Congo Haemorrhagic fever, Rift Valley fever, Chikungunya, Dengue, Malaria

The potential presence of these vectors occurring in Malta need further investigation.

## PUB 20

### What Health Research Does Malta Need?

*I. Stabile*

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**Aims:** A great deal of research has been done in the health field in Malta over the years. Much of this research has been driven by the interests of the researcher. The primary author has begun to compile this work into a fully searchable online database (<http://staff.um.edu.mt/ista1/MHSRD/index.htm>). The purpose of this study was to identify the priorities that Health Care Practitioners and researchers believe should be tackled. The ultimate goal is to

have a list of research projects that should be undertaken in order to facilitate locally-relevant evidence-based clinical decisions.

**Methods:** The list of health practitioners and administrators working at the Health Division was obtained from the Personnel section of the Department of Health after obtaining permission from the Director General Health. Invitations to participate were also circulated through the relevant professional associations. Subjects were asked to respond to a short structured questionnaire listing the research areas that they believe are important in order for evidence-based decisions to be made about health care in the Maltese Islands. Subjects were asked to add as many research questions as they felt were appropriate. Responses were coded and analysed using descriptive statistics generated with SPSS version 13.

**Results:** Topics such as "What services do we need to put into place to reduce hospital length of stay?"; "What is the prevalence of specific diseases such as mental illness, cardiovascular disease, diabetes etc in Malta?"; "Which health promotion activities are most effective in the local setting?"; "What are the patient's expectations of their family doctor?" exemplified the responses obtained. The latter study has now been completed and the data are the subject of another presentation at this conference.

**Conclusions:** The main priorities that Health Care Practitioners and researchers believe should be tackled are issues of great relevance to our health care economy.

## PUB 21

### Illness perceptions and degree of adherence for a chronic disease sample

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**Aims:** To determine whether chronic disease patients who vary with respect to their degree of adherence to treatments, differ significantly by illness perceptions. The theoretical basis of the study was the common-sense model (CSM), which states that patients construct cognitive representations to understand and cope with their disease

**Methods:** CSM constructs regarding perceived causal attributes of a disease were collated for the final cross section component of a 3 way panel design study. Illness perception data were obtained from the Illness Perception questionnaire-revised (Moss-Morris et al., 2002) which assessed dimensions such as: timeline nature (acute/chronic/cyclical), treatment control beliefs and the perceived consequences of a disease. For adherence scores participants rated their degree of adherence on a 5-point Likert scale (1 = no adherence; 5 = full adherence). Full adherers were individuals who adhered all the time, good adherers for a good amount of time whilst poor adherers adhered sometimes/a little/never. Thirty-eight individuals with single gene (thalassaemic, dystrophy) and 77 with multigene (coeliac, psoriasis) diseases were interviewed. A one way ANOVA and post-hoc Tukey tests demonstrated the direction of any significant relationships.

**Results:** A principal components analysis with varimax rotation was computed on the perceived causes of their disease index and the following factors identified: psychosocial (e.g., stress), lifestyle (e.g., poor diet) and environmental (e.g., smog). Full adherers had higher treatment control beliefs than the poor adherers (F (2,



112)=5.07,  $p < 0.01$ ) and perceived their diseases as less cyclical in nature than the poor and good adherers ( $F(2,112)=4.23$ ,  $p < 0.01$ ). Full and good adherers varied between themselves, with the good adherers citing a psychosocial cause (e.g., stress) for their disease significantly more ( $F(2,112)=4.87$ ,  $p < 0.01$ ).

**Conclusions:** When intervening to improve patient adherence to treatment for a chronic disease, health professionals may potentially target additionally various dysfunctional perceptions regarding treatment control, nature of timeline beliefs and perceived causal attributes for a disease.

## PUB 22

### Models of Interpersonal Health Behaviour and Childhood Obesity

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**Aims** Childhood obesity is becoming an ever growing public health concern, whose ramifications are from both a health and economic perspective. A variety of behavioural models of intervention have been developed to help obese children lose weight and prevent obesity at the outset. However the problem is that this research is widely scattered in the social science literature, and there is a need for studies that synthesise existing research.

**Methods:** This critical literature review surveyed the dominant scholarly explanations of how and why childhood obesity occurs as well as the most prevalent interventions developed by health care professionals. The study also described the theoretical bases for these interventions. The models examined included the theory of planned behaviour, Tran theoretical model of behaviour change, and social cognitive theory, among others.

**Results:** Findings of the literature review revealed that the condition of obesity in youth is not simply a physiological malady but also a mental one. Although the various models of intervention represent different points along an action spectrum—such as social cognitive theory's emphasis on self-efficacy, and the Tran theoretical model of intervention's perception component—they all focus on aspects of decision making that are intimately related.

**Conclusions:** Findings of this literature review demonstrated that by using structured intervention with integrated theoretical models, greater success can be achieved. In addition, this study has positive social change implications by highlighting the most successful components of current models of intervention in obesity. A childhood free from the scourges of obesity will provide psychosocial benefits, of whose values to society are incalculable.

## PUB 23

### Integration of Medicines Entitlement System

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**Aims:** To improve access, and long-term equity through integration of the medicines entitlement services within the National Health System to better meet the health needs of the local population wherever they live or whatever their financial circumstances.

**Methods:** Data and information was collated throughout the last 6 months. The shortcomings in the Medicines Approval Section (MAS) and the Schedule V Section were identified, and the following criteria were established:

1. The necessity to amalgamate medicines entitlement services.
2. The setting up of a clear policy and standard operating procedures (SOPs) for everybody to follow.
3. An educational campaign explaining the processes

An algorithm was set-up to portray and integrate the existing entitlement system. Schedule V and MAS workforce, were integrated within the same premises. A clear concise policy that defines the medicines entitlement priorities was proposed to provide a transparent framework within which stakeholders could understand their roles and responsibilities. The policy was reviewed and validated by discussing it with the stakeholders. The necessary amendments were made and the policy was finalised. The policy was published, together with clear criteria for approval and specific forms, the government formulary list, and the protocols.

**Results:** The following are the outcome measures:

- a. A policy to compensate for the missing links in the system, that could be assessed from time to time and revised as appropriate. This aids the clinician on applying for medicines through the Schedule V, Protocol Regulated and Exceptional Medicinal Treatment requests.
- b. The publishing of a hardcopy containing all the processes involved to be distributed to all users in the field.
- c. Information Technology (IT) system integration and enhancement, and the compilation of tailor-made reports for trend analysis and final assessments.

**Conclusions:** The reviewed system and processes contributed a structured framework to the department. The policy and guidebook have been designed to aid the user on requesting a particular medicine, reducing unnecessary conflicts and misunderstandings. The IT system will further ameliorate the services, enhancing the tracking system and accountability.

## PUB 24

### The pilot study about the reliability and validity of Chinese version of Life incidence of traumatic event –student form and Child-report posttraumatic symptom

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**Aims:** Validating Chinese Version of the Life Incidence of Traumatic Event- Student form and Child-report Posttraumatic Symptom introduced from USA, in order to evaluating its utility locally

**Methods:** The cluster sampling method was employed to recruit the 8-18 pupils and students in the normal community schools and two special school (one school for the blind and the other school for borderline delinquency male students). Achenbach's YSR was chose to serve as the validity criteria. The translation and back translation procedure was done follow the author's recommendation. Several psychometrical indicators were analyzed for reliability and validity about the Chinese version of LITE-S and CROPS, such as Cronbach a coefficient, test-retest coefficient, construct validity, discriminate validity, criteria validity

**Results:** The Cronbach a coefficient for LITE-S and CROPS was 0.794 and 0.903 respectively. The five-week test-retest coefficient for LITE-S and CROPS was 0.760 and 0.903, respectively. There

five factors were produced through the factor analysis with oblique rotation, namely the first factor was avoidance and depression, the second was intrusion and high arousal, the third one was somatic complaint, the fourth was sense of guilty and sadness, the fifth was sleep disorder. Among them the fourth factor discriminated between the students from normal schools and special schools. Higher mean total score on CROPS was found among the students from special schools than that of the students from normal schools significantly. The students with behaviour problems screened by YSR were higher total mean score on CROPS than those of the students without behaviour problems. The average coefficient between the total score on CROPS and the eight symptoms defined by YSR was  $0.6332 \pm 0.1129$ .

**Conclusions:** 1 The Chinese version of LITE-S and CROPS which are the screening tools of traumatic events and posttraumatic symptom for children and adolescents introduced from USA meet some important psychometrical requirements. 2 LITE-S and CROPS can serve as the candidate for screening traumatic events and posttraumatic symptom in groups for the purpose of measuring and comparing within groups, but with cautious when employed for individuals

## PUB 25

### Maltese participation in an International Pilot Study of Risk Evaluation in acute medical admissions

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**Aims:** Participation in an international pilot study examining the practical application of a Simple Clinical Score (SCS) at an interface of acute care; comparison with 20 other clinical centres in Europe and New Zealand. The Score is based on physiological and social parameters affecting hospital mortality at 30 days.

**Methods:** Data were prospectively collated on 12 consecutive Maltese acute medical patients over 16 years who presented alive to the hospital Emergency department in September 2008; the data collected included the Simple Clinical Score, length of stay, mortality, and admission to coronary care or intensive care within seven days of admission. Anonymised patient data were pooled in with the 282 international patients analysed in the international collaborative audit; hospitals were coded randomly. The required data is routinely collected as part of the admissions process. Information was also gathered on the ease of data accumulation.

**Results:** All data was collated from the initial admission information, and within 15 minutes. 58% of local participants were male; 42% had Diabetes Mellitus. Overall, SCS scores estimating severity of illness were indicative of CCU or ITU admission. In spite of the local SCS scoring higher than the average score of 6, the discharge rate at 7 days was higher than comparative scorers overseas; all Maltese men were discharged within 7 days of admission; of the 5 women admitted, two remained longer than seven days—one due to stroke; neither were admitted to IT or CCU. No problems were reported with data collection either in Malta or elsewhere.

**Conclusions:** In spite of a fairly small local sample, participation with other centres has facilitated the development of a possible reference tool to assist better care. This may be used to assist safer discharge planning of unselected medical admissions.

It also provides some comparators with other anonymised centres in different healthcare settings facilitating quality improvement and benchmarking. This has other broad implications in view of universally increasing resource constraints as it may allow safe cost savings. Comparison across different healthcare systems is another important facet in view of increasing cross-border care. Maltese data conform with previous publications regarding the local short length of stay and possible gender differences. Further studies are required for the development of a robust evidence-base and more precise local figures.

The assistance of the medical staff led by Dr Anna Spiteri in the Emergency and Admitting Department is gratefully acknowledged.

## PUB 26

### Perceived and actual heart disease risk study achieves high response rate to offer clear picture of mismatch among physicians of today and tomorrow in Malta

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**Aims:** To achieve an acceptable response to ensure the validity of a study of physicians and medical students in Malta aimed at estimating risk factor status with regard to cardiovascular disease as compared with that perceived among respondents.

**Methods:** Representative samples of community and hospital based physicians working in Malta were taken along with a similar sample of medical students. Physicians are knowledgeable with respect to cardiovascular disease risk and represent an interesting sub-population in which knowledge is not lacking although behavioural change is not always in line. Researchers went to great lengths through personal contact, by phone and by encounter and with several reminders, to ensure a good response rate which would render the study more valid and representative of Maltese physicians and medical students as a whole. This required an unusual investment of time and effort on the part of researchers, which was purposely planned as time well invested.

**Results:** The response rate achieved was of 71% (106 of 150 invited) which is the highest ever among studies on Physicians/medical students in Malta and among the highest in similar studies worldwide. This despite the need to request physicians and students to come to hospital and to undertake an invasive procedure (blood letting) which was clearly not acceptable by all physicians originally selected to participate. Hospital physicians had the highest acceptance rates (76%), followed by medical students (70%) then community physicians (65%). These differences are not significant.

**Conclusions:** The use of personal contact by the researchers by phone and encounter among the close-knit community of physicians in Malta and the involvement of the medical student organisation reaped the aspired results. Oftentimes, it was necessary to use second, third and even fourth contacts with participants to enable the achievement of this unusually high response rate which augurs well for the validity of study results in general.

## PUB 27

### Sexual lifestyle of medical students internationally

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**Aims:** To explore the sexual activity choices and contraceptive use of medical students on an international basis. To elicit the age of first sexual encounter, self reported sexual orientation, methods of contraceptive used and the number of partners over a period of twelve months.

**Methods:** A questionnaire was given to each of the 500 delegates attending an international medical student conference in Macedonia. The respondents were asked questions on their demographics, sexual orientation, the age of first encounter, use and method of contraception and number of sexual partners over a period of 12 months. A response rate of 58.6% (n=293) was achieved. Cross-tabulation was used to outline the relationship between region and sexual lifestyle variables under survey.

**Results:** The sample population had a mean age of 22.5 years. 44% of the respondents were male and 56% were female. The majority of respondents (76.9%) reported having sexual intercourse at least once, with the most common ages of first encounter being 17 (15%) and 18 (15%). With regards to sexual orientation, 94.3% reported being heterosexual, 3.5% bisexual, and 1.8% homosexual. 84.3% reported using some form of contraception, of which condom use was the most popular at 85%, followed by contraceptive pill use at 53%. A mere 2.3% reported never using contraception. Almost half (46.5%) reported the use of more than one form of contraception. 34.7% reported having two or more sexual partners over the previous twelve months. The European and American regions reported the highest percentage of sexual activity with 90% and 88% respectively. Students from the Eastern Mediterranean region reported the lowest percentage of sexual activity at 35%.

**Conclusions:** Medical students are in constant contact with sexual health promotion and this reflects in personal lifestyle choices. Even though a high percentage reported sexual activity the vast majority use some form of contraception with the condom and the contraceptive pill being the most popular choices. Regional differences in sexual activity were evident with the western regions reporting greater activity.

## PUB 28

### The impact of regulatory action to mitigate the ill effects of heatwaves on residents of homes for older people

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**Aims:** Older persons and children are the most vulnerable people during times of excessive heat. The aim of the study is to establish the impact of the introduction of national regulatory guidelines on the measures to be taken during the summer months in homes for older persons to mitigate the ill effects of excessive heat.

**Methods:** A questionnaire was designed based on literature review including guidelines issued by the World Health Organization. The number of homes surveyed is thirteen (13) amount to circa one-third of all the licensed homes in Malta and Gozo. The homes

surveyed included State owned homes, church homes and homes managed by the private sector. These homes were surveyed during the summers of 2008 and 2009, thus before and after the introduction of the regulatory guidelines respectively.

#### Results:

1. Minimum measures were already in place predating the introduction of the national guidelines – as in the case of availability of water and sufficiency of fans.
2. However, following the introduction of the regulatory guidelines, resilience to the ill effects of heat waves was increased subsequent to – a. the implementation for the first time of the recommended measures, as in the case for indoor temperature monitoring; b. sensitisation and increasing awareness and efforts to mitigate the ill effects, as in the case of the availability of oral rehydration salts.

**Conclusions:** There is no place for complacency as lacunae still exist as in the case for the documentation of some of the measures already being implemented, and others that are still to be implemented.

## OPH 1

### Can Optical Coherent Tomography be useful in objective assessment of Optic Disc swelling in children?

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**Aims:** Very young children presenting with Optic Disc (OD) swelling may or may not have the Optic Nerve (ON) function affected. Subjective assessment of the integrity of the ON by perimetry studies can be very unreliable and inconclusive. Optical Coherent Tomography (OCT) is an instrument that uses laser technology to scan the ON. Can the objective parameters measured be useful in determining the effect of papilloedema on the ON? Could OCT be an alternative to perimetry in these selected cases?

**Methods:** The Orthoptic clinic received requests for 8 children aged 5 to 13, between January and April 2009, for assessment of the disc swelling due to suspected Benign Intracranial Hypertension (BIH). In a cross-sectional study, these children were dilated using cyclopentolate 1% and had a fundus examination followed by an OCT scan. The 'Fast optic disc' scan was performed in both eyes and the scans were analysed using the Optic nerve head analysis programme.

**Results:** Scans and information of 7 children (n = 7) was used as one case had insufficient information. Optic disc swelling was confirmed by an Ophthalmologist and graded as 0 if no papilloedema was present and 1 if present. The data of the rim area, nerve width and disc area were analysed and a relationship between the two parameters was correlated. In the right eyes a significant correlation was found between papilloedema and the rim area (Pearson correlation = 0.85) with a lesser significance with the nerve width (Pearson correlation = 0.58). In the left eyes a similar but less significant correlation between papilloedema and rim area and disc width was found (Pearson correlation = 0.48 and 0.149 respectively). The relationship between papilloedema and disc area had a higher correlation in the left eyes but appears to be less significant. (Pearson correlation = 0.47 and 0.59 for the right and left eyes respectively).

**Conclusions:** More information and more cases of BIH need to be examined using OCT in order to build up more data. It is being proposed that a protocol be established for the use of OCT in all cases of BIH in children using a cohort study along side with a control group of normal children

## OPH 2

### An Audit on Ophthalmic Casualties between August and September 2008

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**Aims:** This study was carried out to evaluate the patterns of ophthalmic emergency visits and to propose ways on how to improve the service.

**Methods:** Patients' demographic data, diagnoses, time of registration, source of referral and follow-up were entered into a database. 1335 consecutive patients' visits over an eight-week period were entered and the following information was retrieved.

**Results:** The average attendance was that of 30 casualties per day. 7% of the patients were children (<14 years) and 93% were adults. Male:Female ratio was 1.5:1. Average age was 45 years with an age range between 1 and 91 years. The patients were stratified into different groups depending on their diagnoses as follows: Anterior segment pathology - 80.9% Lens pathology - 2.87% Oculoplastics pathology - 4.8%

Vitreous pathology - 7.21% Retina/Choroid pathology - 4.22% 55.4% of patients registered between 7am-4pm; 29.6% between 4pm - midnight; 15% between midnight - 7am. 80.3% had no referral ticket; 15.8% were referred from health center doctors; 2.9% from their private GP; 0.6% from an optometrist and 0.45% from an ophthalmologist. 77.9% of patients were discharged after their first visit; 12.5% were given a review as casualty; 8.1% were referred to ophthalmic out pats department and 0.35% were admitted to the ward. The majority of patients seen after midnight were due to corneal abrasions, foreign bodies or welding burns.

**Conclusions:** The Mater Dei Ophthalmic A&E department has an open door policy and traditionally accepts any patient regardless of the severity of, or duration of the complaint. Many patients with non-acute problems come for reassurance or because their outpatients appointment is too far away. Waiting times for a routine appointment can take over 3 months. It is also noticed that patients who have previously attended ophthalmic A&E come after 2pm because they know that the waiting time is shorter. At present the function of the ophthalmic casualty lies somewhere between a casualty service and a primary care centre. The majority of patients with foreign bodies were males (89%) and this reflects the higher occupational and recreational risk of trauma in this group. Education about prevention of eye injuries could decrease the workload of casualty. One way of reducing the amount of casualties is by training general practitioners. Trained GPs in health centers should be allowed to use the necessary equipment to examine eye casualties. Management guidelines for many ophthalmic emergencies should be made available at health centres. Another way is by training ophthalmic nurses. This nursing specialty is still lacking in Malta. An experienced nurse is able to deal with most minor trauma and uncomplicated cases. Apart from treating casualties, the ophthalmic nurse will also provide care to

patients with disorders of the eye including blindness; this ranges from patient teaching to home visits to instruct patients on how to adapt their home environment.

## POPH 3

### Presumed Ocular Histoplasmosis Syndrome (POHS) in Malta

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**Aims:** Case Report: A case of presumed ocular histoplasmosis syndrome (POHS) in Malta

**Results:** Here we present a very rare case of Presumed Ocular Histoplasmosis Syndrome. A 13 year old previously-healthy girl presented to the department with unilateral blurring of vision, paracentral relative scotoma and metamorphopsia from the left eye. Clinically the patient had a prominent active peripapillary SRNVM which was leaking blood and fluid. There was a sensory detachment of the macula which explained the visual symptoms. In the periphery there were typical 'histo spots' <1 DD with confluence leading to linear pigmented lesions. The fellow eye showed an active choroidal lesion and an inactive 'histo spot'. Complete absence of vitritis in both eyes. The patient was treated with prednisolone tablets (1mg/kg/day) with protection. Initially the option of treating this condition with intravitreal injection of bevacizumab was considered. Bevacizumab is a monoclonal antibody with anti-VEGF properties.

**Conclusions:** The patient showed a positive response to the steroids with improvement of visual acuity (BCVA) from 6/60 to 6.12+. The dose is currently being tailed down and it was suggested that she is kept on a maintenance dose of 7.5mg. She is intended to have the steroids stopped in the near future with regular follow-up to monitor her visual acuity and fundus changes.

## OPH 4

### Experience with Intravitreal Bevacizumab in Malta

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**Aims:** To determine the outcomes of the use of the VEGF inhibitor bevacizumab by intravitreal injection for the treatment of ocular disease since this treatment became available in Malta in 2007.

**Methods:** Retrospective analysis of case notes and fundus fluorescein angiography images of all patients receiving intravitreal bevacizumab over two years (May 2007 - April 2009) under the care of one consultant, to determine indication for treatment, objective change in visual acuity, and occurrence of complications. Telephone survey amongst those patients for whom the indication was choroidal neovascularisation (CNV), to determine subjective change in vision and level of pain felt during the procedure.

**Results:** 170 intravitreal injections of 1.25 mg of bevacizumab were administered over two years in 68 eyes of 65 patients. Mean number of injections per eye was 2.5 (maximum 7). Mean age was 65.7 years with a male:female ratio of 1.4:1. Indications for treatment were choroidal neovascularization (CNV) (74.6%), perioperative treatment of diabetic tractional retinal detachment requiring pars

plana vitrectomy (PPV) (10.2%), neovascular glaucoma (6.8%), retinal pigment epithelium detachment with macular oedema (5.1%), and others (3.3%). Overall complication rate was 1.8%, the most significant being one instance of raised intraocular pressure in an eye with neovascular glaucoma and one of significant late intraocular inflammation in an eye that had also undergone PPV just prior to injection. No systemic complications were noted. Among the cohort treated for CNV, there was an overall mean objective improvement in visual acuity of 1.07 Snellen letters. 72.7% of CNV patients reported subjectively improved vision following treatment, the main symptoms improving being blurring of vision (62.5%), scotomata (54.2%) and metamorphopsia (20.8%). Pain associated with the injections was rated on a pain scale with a mean response of 2.2/10.

**Conclusions:** The use of intravitreal bevacizumab in Malta is principally for the treatment of choroidal neovascularisation (CNV). It is associated with modest objective improvement in visual acuity, but with a high rate of subjective improvement in vision and reduction of symptoms of CNV. Intravitreal injection of bevacizumab is a mildly painful procedure and is associated with a low risk of significant ocular complications.

## OPH 5

### Outcome of Laser-Assisted Subepithelial Keratectomy with customized ablation

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**Aims:** To evaluate visual outcomes, predictability and complication rates of customized laser-assisted subepithelial keratectomy (LASEK) for the treatment of low and high myopic and of hyperopic eyes. Special emphasis was made on symptoms and quality of life postoperatively. We also compared the results of this procedure that was performed in a Maltese private hospital with those of larger international centres.

**Methods:** A retrospective, randomized study, for the evaluation of customized LASEK performed over 5 months in 2008 with a follow up visit at 6 months was conducted. 102 eyes (53 patients) were treated. The patients were divided into three groups for result analysis: group 1 – hyperopes (16 eyes), group 2 – low myopes (mean spherical equivalent, MSE  $\leq$  -6D) (63 eyes), group 3 – high myopes (MSE  $>$  -6D) (23 eyes). The outcome measures included preoperative and postoperative best spectacle-corrected visual acuity (BSCVA), uncorrected visual acuity (UCVA), keratometry, pachymetry, aberrometry and complication rates. Operative data including correction treated and corneal thickness ablated were recorded. All patients were given a questionnaire enquiring about postoperative symptoms, grading of pain and quality of life.

**Results:** Preoperatively, the MSE in group1 was 2.92 diopters (D)  $\pm$  2.43 (SD), that of group2 was -3.5D  $\pm$  1.15 (SD), in group3 it was -7.76D  $\pm$  2.15 (SD). On a decimal scale, the mean BSCVA in group1 was 0.9; 0.9 in group2; 0.75 in group3. At the 6 month postoperative visit UCVA was 0.7 in group1; 1.09 in group2; 0.85 in group3. The subjective MSE in group1 was 0.24D  $\pm$  0.93 (SD); 0.07  $\pm$  0.15 (SD) in group2; -0.07D  $\pm$  0.49 (SD) in group3. 53% of the eyes in group2 and 8.69% of the eyes in group3 had an UCVA of more than 1, however none of the eyes in group1 achieved this VA. Regarding emmetropia, 62.5%, 92%, 65.2% were within 0.5D of emmetropia in group1, 2 and 3 respectively. Unlike in previous studies, since we applied customized ablation, there was a

decrease in higher order aberrations. No serious complications were encountered. The mean amount of days taken off work was 7. Using a subjective grading system for postoperative pain where 0 is no pain experienced and 10 the worst pain possibly endured, the mode was 5 (28.3% of patients) however 20.8% gave a score of 10.

**Conclusions:** The best visual outcome post LASEK was found to be in the low myopic group with a good majority achieving an UCVA of even more than 1. Of all the patients, only 2 hyperopic patients were not satisfied with the results of LASEK. These results compare favourably with those from international studies.

## OPH 6

### Orbital emphysema, pneumocephalus and retinal detachment as a result of trauma with compressed air

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**Aims:** Case Report

**Results:** 49 year- old previously healthy myopic (-16DS) male presented to ophthalmic casualty after sustaining injury with compressed air to the right eye/orbit. He complained of sudden decrease in vision and severe bouts of pain in right temporal and occipital areas radiating from right orbit. Examination revealed right non-axial proptosis, right preseptal surgical emphysema. His BCVA was counting fingers, a had a superior visual field defect, mechanical restriction in all positions of gaze on the affected side, and IOP of 45mmHg. Fundoscopy revealed 2 peripheral inferonasal tears with adjacent commotio retinae and vitreous haemorrhage inferiorly limiting fundal details. CT scan: (1.5mm cuts), R pneumo-orbita - Intraconal and anteseptal air, Pneumocephalus with air in the basal cisterns and lateral and third ventricles. Fracture of the posterior wall of the orbit and/or sphenoid sinus were suspected. Subcutaneous emphysema in the R periorbital area. Small amount of fluid in R frontal, sphenoid and ethmoid sinuses. Maxillary sinuses clear. No intracranial haemorrhage with no shift in midline structures. B Scan US: Flat retina. Inferior vitreous haemorrhage. Attempts at barrier laser was unsuccessful because of poor visualization of the fundus.

The patient was admitted for iv flucloxacillin and ceftriaxone. His high IOP was managed with aqueous suppressants. Soon after a retinal detachment was suspected and the patient underwent pars plana

vitrectomy, fluid-air exchange and silicone oil insertion and indirect laser retinopexy. The retina has remained in place since the operation but his visual acuity improved only to 6/60 suggesting damage to the retina.

**Conclusions:** Orbital emphysema results from forceful entry of air into the orbital soft tissue spaces. This was reported in the presence and absence of conjunctival lacerations. In the latter, it is due to air entry through clinically undetectable microlacerations in the conjunctiva. This can lead to the following: proptosis, loss of vision, increased intraocular pressure, central retinal artery occlusion, orbital compartment syndrome, traumatic optic atrophy, blow out fractures, uveitis and tearing of ophthalmic veins with fatal air embolism.

Orbital-palpebral emphysema occurs when orbital pressure increases beyond the mechanical strength of the orbital septum and air passes freely from the orbit into the eyelid. Presence of

orbital-palpebral emphysema effectively rules out any risk of orbital compartment syndrome, which arises when the pressure of orbital air is sufficient to cause vascular compromise to orbital structures. Computed tomography is the radiological investigation of choice with MRI more ideal to assess soft tissues. B-Scan ultrasonography should be ideal to diagnose globe defects, FB, vitreous haemorrhage, lens dislocation, RD, or globe rupture. In the presence of orbital compartment syndrome: emergency decompression is necessary by canthotomy/ cantholysis or needle aspiration. Force of the compressed air is critical in visual outcome. With a force of over 75lbs per sq inch it is possible for air to pass extradurally and intracranially through the SOF.

Profound literature search did not reveal any similar cases so to our knowledge this case is unique in that we found no reported case of all the above-mentioned signs occurring after compressed air injuries. A significant additional risk factor for RD in this case was the high myopia and lattice degeneration. There was no record of this patient's BCVA from this eye prior to this accident. Pathological myopia in itself is associated with poor central vision.

## GAS 1

### The Epidemiology of Coeliac Disease in the Maltese Islands 1999-2008

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**Aims:** The incidence and prevalence of Coeliac disease (CD) varies worldwide. The introduction of screening serological tests contributed to an increase in diagnostic rate. In the Maltese Islands, the mainstay of the diet consists of a high consumption of daily gluten intake, which leads to numerous medical referrals. The aim of this study was to assess the trend in the incidence of CD in the Maltese Islands.

**Methods:** This is a retrospective observational study of subjects diagnosed with CD over a 10-year period (1999-2008). The study population was identified through the database of the Histopathology Department, Mater Dei Hospital (MDH), whereby patients with a histological confirmation of CD in duodenal biopsies were included. In addition, subjects entitled to gluten-free diet, as provided by the Pharmacy Department, MDH, were also included.

**Results:** The female to male ratio was 2.8:1. The mean age at diagnosis was 41 years. Table 1 demonstrates percentage diagnosis according to age groups, the most common age group being between 41 and 50 years of age (23%). There was a gradual increase in the annual incidence between 1999 and 2001. The Incidence per 1000 patients was 0.04 in 1999, 0.05 in 2000 and 0.06 in 2001. However, the main rise in incidence occurred in 2002, when it rose to 0.1 per 1000 patients. Since then the incidence rate has remained static. The only exceptions were 2003, where the incidence rate per 1000 patients was 0.11 and 2005 when the rate was 0.12.

Table 1. Age group at diagnosis of celiac disease

Age Group	Percentage
0-10 years	8.8
11-20 years	8.3
21-30 years	9.1
31-40 years	16.2
41-50 years	23
51-60 years	19.6
61-70 years	11.3
71-80 years	2.6
81+ years	1.1

**Conclusions:** In 2002 anti-endomysial antibodies were introduced as a serology screening test. Later, the anti-tissue transglutaminase test was introduced. Since the introduction of these tests, there was an immediate rise in the incidence of CD. A further annual increase was expected. However, this has not been achieved. Furthermore, our incidence rate is much lower than that of other Mediterranean and European countries. We believe that more at risk groups, those with a family history and an atypical history need to be screened so that our incidence could mirror to some extent those of other Mediterranean countries

## GAS 2

### Adverse Drug Reactions in Medications used in Inflammatory Bowel Disease

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**Aims:** To obtain clinical and endoscopic remission in Inflammatory bowel disease (IBD), multiple drugs are used. The aim of this study was to analyse drug-induced side-effects secondary to medications used in treating IBD.

**Methods:** This was a retrospective study where patients attending the gastroenterology clinic were recruited. Information regarding medications they had been prescribed since they were diagnosed with IBD was obtained from their clinical notes. Side-effects, adverse reactions and complications secondary to the medications they were prescribed were noted.

**Results:** 83 patients were recruited. There were 53 patients with Ulcerative colitis (24 male) and 30 patients with Crohn's disease (12 males). Their age varied from 16 to 78 years. Prescribed medicines included:

1. Sulfasalazine (35 patients)
2. Mesalazine (67 patients)
3. Azathioprine (41 patients)
4. Infliximab (12 patients)
5. Methotrexate ( 2 patients)
6. Cyclosporin (1 patient)

Sulfasalazine was substituted with mesalazine in 22 patients when the latter drug was introduced in hospital. The most common side-effects occurred in patients having azathioprine (19.5%). 1 patient had dysgeusia, 5 patients developed neutropenia, 1 patient had drug-induced fever and another patient developed GI side-effects. In all the patients the drug was withdrawn. 17% of patients who had sulfasalazine had reactions requiring its

cessation. 2 patients had a hypersensitivity skin reaction, 1 patient had extra-pyramidal side-effects, 1 patient had thrombocytopenia and 2 patients had gastrointestinal symptoms. 1 patient having methotrexate developed cystitis, which required drug withdrawal. 3 patients who had infliximab developed an allergic reaction. The drug was still administered taking the necessary precautions with pre-medications prior to infusion.

**Conclusions:** 19.5% of patients had adverse events secondary to azathioprine, the most common being neutropenia. Measurement of 5-TPMT levels may identify the at risk patients. Sulfasalazine has been replaced by mesalazine. Its only use is in patients with articular manifestations of IBD. No adverse events occurred in patients having mesalazine. With the current target of mucosal healing in IBD, the number of patients having azathioprine has increased significantly. This data demonstrates that side-effects secondary to this medication are not uncommon. Thus appropriate discussion with patients regarding side-effects should be undertaken prior to its administration

### GAS 3

#### Use of Unsedated Trans-gastrostomy Endoscopic Small Bowel Aspirate in The Diagnosis of Small Intestinal Bacterial Overgrowth

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**Aims:** Small Intestinal Bacterial Overgrowth (SIBO) is a common co-morbidity to short-bowel syndrome (SBS), may have significant clinical sequelae including increased dependence on parenteral nutrition (PN) but may be difficult to diagnose. Our study objective is to compare the findings upon small bowel aspirate from esophagogastroduodenoscopy (EGD-A) with those on transgastrostomy Gastroduodenoscopy with aspirate (GD-A) in our cohort of patients undergoing intestinal rehabilitation.

**Methods:** We abstracted the medical records of our patients with SBS seen in the Intestinal Rehabilitation Program over a 12 month period and who underwent investigation for SIBO. We compared the clinical course, histopathologic findings and bacteriologic cultures obtained through SB aspirates obtained during standard EGD under general anesthesia with those obtained through transgastrostomy aspirate in unsedated children.

**Results:** Over a 10-month period, 24 (13F) patients underwent endoscopy – 22 (EGD-A) with biopsy under general anesthesia (21 patients) or 13 unsedated GD-A, (12 patients): 10 patients underwent both procedures over a 10 month period of time. Their mean age (SD) at the time of endoscopy was 27.2 (15.4) months with no significant difference between the group undergoing EGD and those studied through GD-A. Aspirates were positive in 79% of 34 procedures (EGD; 82%, GD-A; 58%) and demonstrated polymicrobial culture in 48%. *E. coli* and *K. pneumoniae* were most frequently encountered, *Strep. viridans* and alpha-hemolytic *Strep.* Were only noted in the EGD-A group (Table 1). Parent and patient acceptance of this modality was good, two procedures had to be cancelled because of food residue in the stomach or uncooperative patient, there were no reported complications in either group. Table 1. Aspirate culture (>10<sup>5</sup>uorgs. / ml) expressed as % of cultures

submitted EGD – A (22) GD – A (12) *E. coli* 45 25 *E. Faecalis* 4 25 *K. pneumoniae* 18 16 *Strep. Viridans* 27 0 *Lactobacillus* 4 8 Other 18 25 Negative 27 42

**Conclusions:** Although our sample size and study design do not permit accurate correlation between aspirate culture analysis from the traditional gold-standard vs. transgastrostomy obtained specimens, contamination with oropharyngeal flora appears less frequent with GD-A. In addition unsedated GD-A obviates the risk of anaesthesia and limits the need to withhold food pre-procedure (2 hrs vs 8hrs).

### GAS 4

#### Safety and Efficacy of Celecoxib in The Management of Familial Adenomatous Polyposis in Children.

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**Aims:** Familial Adenomatous Polyposis (FAP) is an inherited predisposition for polyposis and cancer. Chemoprevention may delay the need for surgery or decrease tumorigenesis. Celecoxib is used in adults and its use in children is being studied. Since 2001 our group has followed several families with FAP and offered celecoxib to children on a compassionate use basis; herein we present our experience on the safety and efficacy with respect to the development of colorectal adenomatosis.

**Methods:** We performed a retrospective, longitudinal, case control comparison between the group of children treated with celecoxib and those whose parents declined therapy or were unsuitable to treat (sulfonamide allergy). Clinical, endoscopic-histologic and surveillance laboratory investigations were abstracted for the duration of therapy. Renal function was expressed as GFR (Schwartz formula). A scoring system for colorectal polyp burden (0 - 5, referral to colectomy >3) was devised, based on our institutional endoscopy reporting format. Patients being treated with celecoxib were compared to controls, vis-à-vis changes in polyp burden over time.

**Results:** 10 patients, mean age 12.0 (SD 3.8) were treated with celecoxib, mean dosage of 10.59 mg/kg (SD 2.76) for a mean duration of therapy of 38.7 months (range 9-72 months). The calculated GFR remained normal in all treated patients (mean 129, paediatric norm. 127). The duration of treatment was 27 compared with 35 patient years in the control group. Mean increase in polyp burden was less in the treated group (2.4) than in the control group (3.2) but was not statistically significant.

**Conclusions:** This is the first report on the use of celecoxib in paediatric patients with FAP encompassing adverse effects and efficacy. This is a retrospective study including comparison between two potentially diverse populations (age at endoscopy, genotype), and our study may be underpowered to detect infrequent adverse events. Our study suggests that celecoxib is safe in this population, we have however failed to demonstrate a significant difference in polyp burden change. In our study the development of new polyps in the treated group was less than that observed in the control group with the greatest decrease in polyp burden in the year following the initiation of treatment suggesting that polyp suppression in FAP may not be sustained.

## GAS 5

### Serologic Abnormalities in Short Bowel Syndrome Associated Colitis

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**Aims:** Short Bowel Syndrome (SBS) is the leading cause of intestinal failure and the need for chronic parenteral and enteral nutritional supplementation. The colon plays a significant role in absorption through adaptation, and the development of chronic colitis in SBS patients, although poorly understood, may substantially worsen the degree of intestinal failure in these patients. Herein we studied the incidence, histopathologic and laboratory characteristics in our population of patients with SBS.

**Methods:** We have retrospectively reviewed our clinical experience with patients with intestinal failure followed at our institution over a period of 12 months. Patients developing worsening diarrhea with advancing feeds are routinely investigated for colitis including stool cultures colonoscopy and laboratory including serologic testing. Demographic and clinical data was accrued in a dedicated Access® database, Graphpad InStat3® was used for statistical inference

**Results:** Seventeen patients with SBS underwent colonoscopy with biopsy; colitis was present in 9 patients (53%), enteritis with villous blunting was present in 6 patients; 5 had concomitant colitis. IBD serology (Prometheus Laboratories CA) was obtained in 16 patients. Mean age (SD) at the time of colonoscopy was 34.3 (17.3) months, patients with colitis were older but the difference was not statistically significant. Endoscopic-histopathologic findings included mild – moderate chronic inflammatory changes including lymphocytic infiltrate, focal cryptitis, branched crypts and prominent eosinophilic infiltrate (5/9). EGD-aspirate, small bowel culture for bacterial overgrowth was positive in 8/14 patients but did not correlate with the presence of colitis. Colitis also was not associated with elevated sedimentation rate or decreased serum albumin. IBD serologic testing; Anti Omp-C IgA greater than 40 EU/ml closely correlated with the presence of colitis (PPV 0.86, NPV 0.75, P value 0.04). ASCA and pANCA positivity was reported in 2 and 1 patient respectively.

**Conclusions:** This is the largest report, to date, on the histopathologic findings in SBS associated colitis and the first report on serologic abnormalities in these patients. Our study suggests that chronic colitis is common in these patients who may, through their expressed serologic abnormalities, share common underlying pathophysiologic processes with patients with chronic Inflammatory Bowel Disease perhaps as a reflection of proximal intestinal antigenic exposure.

## GAS 6

### A Systematic Review of Surveillance Strategy for Barrett's Oesophagus - A Systematic Biopsy Protocol tends to detect Early Neoplasia

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**Aims:** Barrett's Oesophagus is the commonest pre-malignant condition of the upper gastrointestinal tract. The rationale for endoscopic follow-up in patients with this lesion is to detect early neoplasia in order to maximise the chance of cure. Despite published guidelines, the role of surveillance programmes is still hotly debated amongst healthcare providers. We performed a systematic review of published series and registries in order to determine the effect of surveillance strategy on the diagnosis of neoplasia.

**Methods:** Relevant publications in the English language were identified by conducting a detailed search of the MEDLINE and EMBASE electronic databases and making extensive use of reference lists. The chosen publications were assigned into 3 categories: category 1 was made up of series employing a systematic endoscopic biopsy protocol, category 2 series performed random biopsies within some form of surveillance programme, whereas in category 3 no surveillance strategy was adhered to.

**Results:** No randomised controlled trials were identified. Therefore, a true meta-analysis was not attempted but rather summation of results was performed in order to extract useful trends. Category 1 was populated by 15 series totalling 2054 patients with 5620 patient-years follow-up. In category 2 there were 11 series with 1576 patients and 3612 patient-years; in category 3 there were 7 case series and 1 population-based study with 3444 patients and 12840 patient-years. Detection of neoplasia (high-grade dysplasia or cancer) was 1 in 80 patient-years in category 1, 1 in 100 in category 2 and 1 in 190 in category 3. Early lesions (high grade dysplasia and stage 0-1 cancer) were commonest in category 1 (70% compared with 40 and 31 for categories 2 and 3, respectively).

**Conclusions:** This systematic review supports practice guidelines recommending Barrett's endoscopic surveillance with a rigorous biopsy protocol. This strategy appears to lead to detection of early neoplasia which should be the sole objective of surveillance. The other strategies are associated with diagnosis of advanced disease which jeopardises patient outcome.

## GAS 7

### Stenting of the colon in patients with malignant large bowel obstruction: a local experience

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**Aims:** There is an increasing evidence-base to support the use of self-expanding metallic gastro-intestinal stents (SEMS). In patients with colo-rectal cancer, they are used as a bridge-to-surgery and for palliation. Previous studies show that they are a favourable means of avoiding high risk surgery in certain patients, but documented complications include perforation, stent occlusion and stent migration. The purpose of this study was to assess technical success,



clinical outcome, complication rate and patency following colonic stent insertion in patients with colonic cancer.

**Methods:** A retrospective, two-centre (one teaching hospital and one large district general hospital) study was conducted. Twenty-seven patients (13 men, 14 women; mean age 72.6 years) were included over a 5 year period. 26 patients had a confirmed diagnosis of distal colonic adenocarcinoma and 1 patient had a diagnosis of pancreatic cancer with extrinsic colonic compression. Six patients had undergone stent insertion as a bridge to surgery and twenty-one had the procedure for palliation. Wallflex® stents were used in all patients. All stents were inserted endoscopically with check abdominal x-rays 12 hours post-stent insertion.

**Results:** Initial technical success was achieved in 26 of 27 patients (96.3%). Of these 26 patients, complete initial relief of obstructive symptoms (clinical success) was achieved in 24 patients (92.3%). Of these 24 patients, 5 patients (20.8%) suffered from stent re-occlusion and 1 patient (4.17%) suffered from stent migration. There was 1 case (4.2%) of procedure-related perforation. Of the 19 palliative patients in whom clinical success was achieved, 17 were alive at 30 days, 13 at 90 days and 10 at 180 days. Average stent patency was 195.1 days. Only 2 patients from the palliative group were found to have stent re-occlusion at time of death. Of the 6 patients in whom stents were inserted as a bridge-to-surgery, all patients were able to undergo surgery and were alive at the end of follow-up.

**Conclusions:** Wallflex® self-expanding metallic gastrointestinal stents are a safe and effective means of alleviating obstructive symptoms in patients with colonic cancer requiring palliative treatment or as a bridge-to-surgery. Our data suggests that although a small percentage of patients are affected by stent re-occlusion, this does not contribute to premature mortality.

## GAS 8

### Laparoscopic-Assisted Colectomy. Locally Feasible & Safe

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**Aims:** Laparoscopic-assisted colectomy (LAC) is becoming increasingly popular as the preferred option in colorectal surgery with most centres reporting excellent results. The aim of the study was to determine whether, in our hands, LAC locally is comparable to results obtained overseas.

**Methods:** This was a retrospective study of patients who underwent LAC by one surgeon (ARA) between January 2008 and August 2009. The primary end-points analyzed were operative time, length of stay (LOS), complications, conversion rates, mortality & readmission rates. These results were compared to published data.

**Results:** In total 14 patients were included in the study. 10 of these patients were males. The median age was 66 years with a range of 55 – 90 years. The four types of LAC performed were right hemicolectomy (4), extended right hemicolectomy (4), anterior resection (5) and sigmoid Colectomy (1). The mean operative time was 194 minutes (range 120 – 300 minutes) as compared to 150 minutes in published data. LOS averaged out at 7.62 days whilst overseas it was shorter at 5.9 days. There were no anastomotic leaks but one patient developed severe intra-abdominal sepsis of indeterminate origin and succumbed at 22 days post-surgery. This was the only death in this study. One patient had to be converted to

the open procedure because of splenic bleeding. Our complication rate was 15.38% vs. 19% reported by other centers. The conversion rate was lower when compared to other units (7.14% vs. 21%). One patient was re-admitted within the first 30 days due to diarrhea and electrolyte imbalance and this was treated conservatively. Mean follow-up was for 335 days (11 months) and no recurrence was observed throughout this period.

**Conclusions:** The results of this pilot study indicate that in our hands LAC is feasible and safe when compared with data provided by other surgical units in larger centers. We therefore suggest that LAC should be considered as the first-line treatment of choice in patients undergoing colorectal surgery.

## GAS 9

### Hyperamylasaemia after Whipple's operation is strongly predictive of anastomotic leakage

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**Aims:** Whipple's operation (pancreatico-duodenectomy) is the standard operation for resectable tumours of the head of the pancreas, ampulla, distal bile duct and duodenum. More recently it has also been employed in the treatment of chronic pancreatitis. The morbidity associated with this procedure may approach 50% and careful monitoring of patients is warranted in order to identify complications early with a view to offering proactive treatment. The objective of this study was to assess post-operative serum amylase and C-reactive protein (CRP) levels as predictors of postoperative morbidity.

**Methods:** Eighty-three prospectively recruited patients undergoing Whipple's operation for neoplastic disease were analysed for postoperative serum amylase and CRP. For each patient, six values for the mentioned parameters were available for analysis: immediate post-operative and daily values until the fifth post-operative day. The median age of these patients was 61 years (interquartile range, IQR = 57 - 70) and 49 were males (59%).

**Results:** Twenty-five patients (30%) had clinical and/or radiological evidence of a leak from the pancreatico-jejunal anastomosis (PJ-leak). Eight of these patients (32%) developed haemorrhagic complications and the association between the two was highly significant ( $p < 0.001$ ). Hyperamylasaemia (more than 300 Units) in the first 3 post-operative days was strongly predictive for PJ-leak ( $p < 0.001$ ) and a similar relationship was found for a CRP level of 150mg/dl or more on the 4th or 5th postoperative days. ROC curve analysis identified hyperamylasaemia on post-operative day 2 as the most accurate predictor for PJ-leak (area under the curve = 0.840).

**Conclusions:** After Whipple's operation, hyperamylasaemia and CRP levels may be useful predictors of adverse outcome. We recommend close monitoring of patients with amylase levels above 300 Units in the first 3 days.

## GAS 10

### Pyogenic Ventriculitis Following Enteral Bacterial Translocation in a Patient with Small Bowel Obstruction

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**Aims:** Case Report

**Methods:** Not Applicable

**Results:** The authors present a rare case of ventriculitis secondary to cerebro spinal fluid (CSF) colonisation with *Escherichia coli* species, in a 65 year old woman with small bowel obstruction. Passage of bacterial organisms from the lumen of the gastrointestinal tract to the bloodstream or lymphatic tissue is known as translocation. Once in the bloodstream, particular bacteria are able to cross the blood brain barrier and migrate to CSF. Elective abdominal surgery, intestinal obstruction, colorectal cancer, ischaemic reperfusion injury and pancreatitis have all been shown to increase the risk of this phenomenon. The account highlights particular events in presentation, recognition and management of such a case.

**Conclusions:** The possibility of bacteria seeding into the intravascular compartment should always be suspected in patients with obstructive bowel symptoms and unexplained clinical deterioration. Although many patients who present with bowel obstruction will have a degree of translocation, this is usually insufficient to cause significant tissue infiltration and infection. More often, the bacteraemia results in generalized sepsis alerting the clinician to the possibility of imminent end-organ colonization. It is the latter of these events that culminates in classical conditions such as meningitis, ventriculitis and endocarditis.

## GAS 11

### Acute Pancreatitis in a Pregnant woman with history of Caroli's syndrome

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**Aims:** Case Report

**Results:** Acute pancreatitis in pregnancy is a rare but serious complication. We report the case of a 20 year old primagravida who presented to the accident and emergency department at 34+3 weeks gestation with severe epigastric and right upper quadrant pain. Her past history included Caroli's syndrome with hepaticojejunostomy, choledochoduodenostomy and cholecystectomy. Pregnancy was uneventful with no previous episodes of abdominal pains and normal blood count results and liver function tests. Fetal growth and well being, as assessed by ultrasound, was also satisfactory.

On admission, examination showed severe epigastric tenderness, tachycardia and tachypnoea. Abdominal pain was very severe requiring opiate analgesia. A multidisciplinary team was involved including the obstetrician, surgeon and gastroenterologist, the latter two had been involved in the course of her condition. The patient was treated conservatively, kept nil by mouth, started on intravenous infusion and given antibiotics. Serial blood investigations showed an increase in white cell count and a steep increase in serum amylase. The pain increased in severity. She was transferred to high dependency unit. Ultrasonography of the abdomen showed features of oedematous pancreatitis, with a common bile duct of normal diameter. Serial fetal cardiotocography remained satisfactory. The patient underwent a lower segment

caesarian section at 36 weeks gestation. A 2.37kg baby was delivered with an apgar score of 6 (at 1 minute) and 9 (at 5 minutes). The baby was admitted at NPICU and subsequently discharged after five days. The patient recovered well. Serum amylase decreased and she was discharged after seven days, with follow-up appointments with the obstetrician, gastroenterologist and the surgeon.

**Conclusions:** It is important to note that pregnancy-associated acute pancreatitis poses a survival threat to the patient and the fetus and a multidisciplinary approach is of outmost importance.

## GAS 12

### Retrieval Devices for Colorectal Polyps: a review of various methods

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**Aims:** Polyp retrieval following resection at colonoscopy is a key step. Appropriate instrumentation and technique ensures that the polyp retrieved is a specimen that is suitable for histological analysis. The aim of this presentation is to review the various devices that are currently available for the retrieval of polyps that are resected during colonoscopy.

**Methods:** A Medline search was performed to identify articles on retrieval devices for colonic polyps. Further articles were obtained by manually searching journals and reference lists.

**Results:** A variety of devices are available for polyp retrieval. Polyps that are less than 5mm in size are commonly retrieved by suction and collected in a trap. Grasping devices are usually reserved for larger polyps and include snares, forceps, baskets and nets. The choice of the device used is determined by the location, size and number of polyps to be retrieved.

**Conclusions:** As flexible endoscopy reshaped the practice of gastroenterology, many new techniques and devices such as new polyp retrieval techniques will continue to emerge, thus enhancing the efficiency and range of endoscopic procedures.

## GAS 13

### Mortality after percutaneous endoscopic gastrostomy insertion

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**Aims:** To investigate mortality after PEG insertion

**Methods:** Patients who had a PEG inserted in 2008 were identified from the endoscopy register. Notes, endoscopy reports and mortality register were consulted as to obtain demographics, PEG indications, outcome and mortality.

**Results:** In total there were 57 patients (33 females) who had a PEG inserted in 2008: The mean age was 60.36 yrs. The median age was 62 yrs. The indications for which the procedure was performed are as below: Indications Number of pts Parkinson's disease 8 Dementia 4 Oropharyngeal/oesophageal Ca 3 CVA 15 Motor neurone disease 3 Huntington's disease 7 Anoxic brain injury: post-cpr, post-mva 4 Cerebral Palsy 6 Brain tumours 2 Multiple sclerosis 1 Guillian Barre syndrome 1 Mortality was: . At 30 days-7% (4 patients) . At 90 days a further 5 % passed away (another 3 patients) . At 6 months another 14 % died ( an additional 8 patients) Thus, the 6 month mortality was 26%. In subgroup analysis, no

patients from the cerebral palsy group had died at 6 months. In the cohort of patients over 75yrs of age, 41 % of the patients had died at 6 months.

**Conclusions:** This is the first available data in Malta regarding PEG insertion and mortality. Worldwide data regarding mortality at 30 days post-PEG insertion varies from 4.1% to 26%. Our 30 day mortality is 7 %. None of the patients died due to complications secondary to PEG insertion but due to their underlying co-morbidities. However mortality in pts over 75 years was 41% at 6 months. Thus more careful evaluation of these patients, including condition necessitating PEG insertion, and co-morbidities, should be considered prior to PEG insertion. Furthermore a thorough discussion leading to informed consent of the patient and/or relatives should be done prior to the procedure.

### CVS 1

#### Assessment of Clinical Indications and Diagnostic Yield of Exercise Stress Tests

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**Aims:** To assess the clinical indications and diagnostic yield of Exercise Stress Tests (EST) in patients referred for exercise stress testing at Mater Dei Hospital.

**Methods:** All EST performed between March 2008 and April 2008 were reviewed. Indications for the requests were analysed. The EST results were classified as positive, negative or non-diagnostic, and then correlated with results of Coronary Angiographic and/or Myocardial Perfusion Scintigraphic studies.

**Results:** A total of 428 EST were performed of which 249 (58%) were males and 179 (42%) were females. Mean age was 55 +/- 7 years (range 14-80 years). The indications for requesting an EST were: assessment of atypical chest pain in 282 pts (65.9%); assessment of typical chest pain in 55 pts (12.9%); assessment of treatment in 32 pts (7.5%); screening for coronary artery disease (CAD) in 28 pts (6.5%); and assessment for cardiac function in 31 pts (7.2%). There were 84 (19.6%) positive, 297 (69.4%) negative and 47 (11%) non-diagnostic EST. Of those with a positive result, a coronary angiogram (CA) was requested in 74 patients (88%) and a myocardial perfusion scintigram (MIBI scan) in 10 patients (12%). CA showed significant CAD in only 28 patients (6.5% of all EST performed), of which 9 (2%) eventually underwent coronary artery bypass grafting, 6 (1.4%) had percutaneous coronary intervention and 9 (2.3%) were advised medical treatment. CA was normal in 15 patients and is still pending to date in 31 patients.

MIBI scan was normal in 7 pts (1.6%), positive in 2 patients and is still pending in 1 patient. Both pts with a positive MIBI scan underwent CA, of which 1 was normal. Of the 47 patients with a non-diagnostic EST, 8 had a normal MIBI scan, 1 had significant CAD and 1 had a normal CA. 1 MIBI scan and 1 CA remain pending.

The most common indication for an EST was atypical chest pain. The vast majority of referrals had a normal EST. More stringent criteria are required for requesting EST taking into consideration the pretest probability of CAD.

### CVS 2

#### Has the Introduction of Troponin I Made a Difference?

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**Aims:** To assess whether the introduction of troponin I at our hospital has: (i) resulted in a decrease in hospital stay and (ii) improved the diagnosis of acute coronary syndrome (ACS).

**Methods:** Patients admitted from the Accident and Emergency Department for the management of chest pain (CP) over a 2 week period in January 2009, when only creatine kinase (CK) was available (Group I), and over a 2 week period in July 2009, when both CK and troponin I were available (Group II), were retrospectively reviewed. Each patient was assessed for the first 3 results of CK and troponin I, diagnosis, management and duration of hospital stay. Patients were classified as non-cardiac CP, non-ST elevation ACS (NSTEMI-ACS) which included unstable angina and non-ST elevation myocardial infarction and ST-elevation myocardial infarction (STEMI).

**Results:** A total of 333 patients were reviewed. In Group I there were 187 patients of whom 158 (84.5%) were diagnosed with non-cardiac CP, 11 (5.9%) had NSTEMI-ACS and 18 (9.6%) had STEMI. Group II consisted of 146 patients of whom 112 (76.7%) had non-cardiac CP, 23 (15.8%) had NSTEMI-ACS, while 11 (7.5%) were diagnosed with STEMI. The average length of stay for non-cardiac CP was 4 days for both groups. Patients with NSTEMI-ACS stayed in hospital for 7 days in Group I and 8 days in Group II. For patients with STEMI the length of stay was shortened from 9 to 7 days with the introduction of troponin I. Of the 23 patients admitted with NSTEMI-ACS in Group II, 14 were found to have a high troponin I in spite of a normal CK.

**Conclusions:** The introduction of troponin I has not reduced the length of hospital stay of patients admitted with chest pain. It has however improved the diagnosis of ACS allowing for earlier and more focused management.

### CVS 3

#### Successful primary stenting for acute myocardial infarction and cardiogenic shock due to total left main coronary artery occlusion

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**Aims:** Case Report: Acute myocardial infarction (AMI) due to total left main coronary artery occlusion (LMCA) is an uncommon angiographic finding associated with a grave prognosis. Despite advances in coronary intervention, this clinical entity remains frequently lethal.

**Results:** Case Description: We report the case of a 63-year old gentleman with multiple cardiovascular risk factors who presented to the Casualty department with typical chest pain, sweating, nausea and vomiting lasting one and a half hours. An electrocardiogram was diagnostic of acute extensive anterolateral myocardial infarction. This was complicated by early pulseless ventricular tachycardia, ventricular fibrillation and cardiogenic shock. Urgent coronary angiography revealed total LMCA occlusion which was successfully crossed and stented. A second tight mid-left anterior descending coronary artery lesion was then tackled. The

patient initially required intra-aortic balloon pump (IABP) and intravenous inotropic support. He was eventually discharged in a stable condition on maximum tolerated medical treatment. He remained well apart from an episode of acute renal failure.

AMI due to LMCA occlusion carries a poor prognosis having an invariably fatal outcome in the absence of collateral flow or prompt revascularisation. With many patients sustaining sudden cardiac death before reaching hospital, the true incidence is difficult to ascertain and tends to be underestimated. Probably for the same reason, the angiographic finding of LMCA occlusion at emergency coronary angiography remains uncommon. Patients often present in cardiogenic shock and pulmonary oedema and most need IABP support.

Malignant arrhythmias and cardiorespiratory failure are also common. Primary percutaneous coronary intervention (PPCI) is considered by many as the quickest and most effective way of achieving revascularisation in this setting. Still, to date, the number of successful PPCIs for acute LMCA occlusion reported in the literature remains limited. Successful emergency coronary bypass grafting has been reported in a limited number of cases but is often not feasible due to the unstable presentation of most patients and the logistics and potential time delay related to the procedure.

**Conclusions:** This case report shows that PPCI, when carried out promptly, can be a life-saving intervention for patients presenting with myocardial infarction and cardiogenic shock due to total LMCA occlusion.

#### CVS 4

### Swimming - induced pulmonary edema in a triathlon athlete: a case report

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Swimming - induced pulmonary edema (SIPE) was first described by Wilmshurst in 1981. It is an uncommon condition that occurs in healthy individuals, very often competitive athletes, during swimming/SCUBA sports. This, to our knowledge, is the first case of SIPE reported in Malta.

**Results:** A 37 year old male triathlon athlete presented with a history of three episodes of sudden onset of severe dyspnoea, cough productive of pink, frothy sputum while competing in the swimming part of a triathlon race. It occurred while swimming in the cold, open sea wearing a wetsuit, and was relieved by swimming to shore, sitting up and removing the wetsuit. Physical examination was unremarkable. The chest X-Ray and resting electrocardiogram were normal. An echocardiogram showed normal left ventricular function. The coronary angiogram showed mildly ectatic coronary vessels. A diagnosis of SIPE was made. Although exercise was recommended he was advised to avoid competing in the swimming races.

**Discussion:** The pathophysiology underlying SIPE involves: immersion in water which increases preload by causing blood to pool in the thorax, breathing head out during immersion causing negative pressure respiration which increases hydrostatic pressure difference between pulmonary capillaries and alveoli, decrease in functional residual capacity and an increase in closing volumes as a result of immersion, peripheral vasoconstriction caused by the cold water and strenuous activity generates high negative intrathoracic pressures.

**Conclusions:** Although uncommon, SIPE is probably underdiagnosed in Malta. Most individuals recover spontaneously and fully. However fatal outcomes have been reported. Since swimming

sports are extremely popular in Malta, both with local residents and tourists, we would like to see an increased awareness of SIPE among the medical profession as well as among swimming instructors.

#### CVS 5

### Corrected pacemaker twiddler's syndrome: yet another twist

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**Aims:** A Case Report. Twiddler's syndrome is a rare condition that was initially described by Bayliss et al in 1968. It results from manipulation of the pacemaker by the patient, thereby causing lead retraction and subsequent dislodgement.

**Results:** A 77 year old lady, who presented with a 3 month history of fatigue, was found on examination to be markedly bradycardic. The electrocardiogram (ECG) showed junctional rhythm alternating with sinus bradycardia. Once electrolyte disturbances and hypothyroidism were excluded, a dual chamber pacemaker was implanted. 6 weeks after pacemaker implantation the patient presented with abdominal and thoracic muscular twitching. The ECG showed sinus bradycardia with no pacing. The CXR showed displaced and grossly entangled atrial and ventricular leads. The patient denied any manipulation of the pacemaker. Pacemaker lead repositioning was performed. The leads were disentangled, checked and repositioned. The patient was strongly advised to avoid further pacemaker manipulation.

However, the patient again presented 6 months later with muscular twitching. The ECG again showed absent pacing and the CXR showed entangled leads with a rotated pacemaker. In an attempt to avoid further 'twiddling', the patient had the pacemaker implanted into a tight subpectoral pocket under general anaesthesia performed by a team consisting of a cardiologist, a cardiothoracic surgeon and an anaesthetist.

**Discussion:** The risk factors associated with Twiddler's syndrome include age, obesity, female gender, cognitive impairment and the small size of the pacemaker relative to its pocket. The most important diagnostic tool is the CXR. Management includes uncoiling the lead, new lead implantation and repositioning of the pulse generator in a subpectoral pocket. Subcutaneous pacemaker implantation has a lower rate of complications as compared to submuscular implantation, however there is an increased risk of lead dislodgement. Although Twiddler's syndrome is uncommon in subpectoral pulse generator implantation, cases have been reported with single-lead cardioverter defibrillator. Patient education remains the single most important means to avoid Twiddler's syndrome.

**Conclusions:** Subpectoral implantation of the pacemaker should be considered as the first line management of patients with Twiddler's syndrome.

## CVS 6

### 4-French femoral coronary angiography allows safe 1-hour ambulation and 2-hour discharge

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**Aims:** To investigate whether cardiac catheterization using 4 Fr catheters via the femoral approach allows early ambulation 1 hour and discharge 2 hours after manual compression without compromising patient safety and angiographic image quality.

**Methods:** 4 Fr femoral coronary angiography (FCA) was introduced in our department in August 2006. All patients (pts) who underwent 4 Fr FCA were enrolled into the study irrespective of test indications, gender, age, race, co-morbidities and body mass index (BMI). Both hospital pts as well as out pts were recruited. Pts requiring immediate percutaneous coronary intervention were excluded from the study.

The sheath was removed by manual compression. Pts were assessed and ambulated after 1 hour, then reassessed and discharged at 2 hours.

**Results:** 1013 pts underwent 4 Fr FCA of whom 713 were males. Age ranged from 23 to 83 years (mean age 60.1 years). Mean BMI was 29.4%. 1004 pts were accessed via the right and 9 pts via the left femoral artery. 30 pts underwent right and left heart studies. Mean compression time was 8 minutes 3 seconds (range 6 to 14 minutes). Mean bed rest time was 63 minutes (2 to 120 minutes). All out patients were discharged 2 hours after the termination of the procedure. 4 pts had minor bleeding during the 1 hour bed rest. 5 pts had minor oozing on ambulation. All cases were easily controlled with further manual compression and were ambulated within another hour.

No major complications including pseudoaneurysm, arteriovenous fistula formation, vascular repair surgery or the need for blood transfusion were reported.

Angiographic image quality did not deteriorate when compared to angiograms performed with larger size catheters in spite of the use of manual injection.

**Conclusion:** This study shows that 4 FR FCA allows early ambulation 1 hour after and early discharge 2 hours after the procedure without compromising pt safety and image quality. Pt comfort is improved. Operator compression time and force is reduced. It avoids the need for femoral closure devices. This together with earlier hospital discharge makes it more cost effective when compared to the current standard practice with 5 Fr catheters.

## CVS 7

### A clinical practice audit of management and outcomes of patients presenting with syncope to the emergency admitting ward, stratified according to prognostic risk

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**Aims:** Syncope often has a benign cause from a mortality perspective. Approximately 10% of affected individuals have a cardiac aetiology. Initial risk stratification is more likely to lead to a correct diagnosis and early treatment of such patients. This audit assesses the appropriateness of syncope admissions to the EAW in our hospital, using the recommendations of the ESC & ACEP. Patients were thus stratified into risk groups according to

the presence of cardiovascular risk factors and a prognostic risk model was validated using local data.

**METHODS:** 50 patients admitted to the EAW presenting with Syncope between April and June 2007 were studied. Purpose-made data sheets were used, containing demographic data, prognostic risk factors, utilized resources and length of stay. The patients were stratified into high, medium and low prognostic risks by applying the ESC & ACEP guidelines on risk stratification in syncope. The data was then analyzed. These patients were followed-up for 3 months and the re-admission and mortality rates were measured, comparing the three risk groups.

**Results:** M:F, 2:1. 60% (n=30) of the patients had cardiac monitoring, 26.6% of which had a significant arrhythmia. 4% (n=2) had a V/Q scan performed, which were normal. 48% (n=24) of patients had a CT brain. According to the risk stratification criteria, 29.2% of these were inappropriately scanned. From the moderate and high risk group patients, 57.4% (n=27) were inappropriately discharged early prior to full workup. In all, 12% (n=6) of patients were re-admitted and 8% (n=4) died within 3 months of admission to hospital. 3 month adverse events rates for high, medium and low risk groups were 36.4%, 8% and 0% respectively.

**Conclusions:** The study showed a high rate of readmissions and death within 3 months in the high risk groups. Cardiovascular and neurological risk stratification helps to identify those patients that need investigations and the low risk patients that can be safely discharged home. Using local data, this study validates the risk stratification model based on international guidelines for the management of syncope. A standardized format of risk assessment is thus recommended for our hospital.

## CVS 8

### Analysis of factors leading to a decline in renal function post-coronary angiography

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**Aims:** Contrast-induced nephropathy (CIN) is a serious adverse event associated with the use of iodinated radiocontrast agents. In spite of various known risk factors, the underlying pathogenesis is still not fully understood. The aim of this study was to examine the role of traditional risk factors, mainly diabetes mellitus (DM), advanced age, contrast medium used, heart failure & anaemia, and new ones including hyperuricaemia and number of diseased coronary vessels, on changes in serum creatinine post-coronary angiography (CA) or percutaneous coronary intervention (PCI).

**Methods:** A prospective cohort study was performed in Caucasian subjects undergoing elective CA or PCI at Catheterisation Lab, Mater Dei Hospital. Relevant medical and drug history was noted. Blood samples for serum creatinine, urea, fasting plasma glucose (FBG), fasting total cholesterol, electrolytes, haemoglobin and eosinophil levels were drawn before CA. Follow-up serum creatinine, urea, haemoglobin and eosinophil levels were measured 72 hours post-procedure. Baseline estimated glomerular filtration rate (eGFR) was measured using MDRD equation. Significance tests were employed to analyse factors that could lead to a decline in renal function following CA.

**Results:** 221 subjects met the inclusion criteria and were included in the analysis. Age ( $p=0.03$ ,  $r=0.146$ ), gender ( $p=0.019$ ), baseline eGFR ( $p<0.001$ ,  $r=0.292$ ) and number of diseased vessels on CA ( $p<0.001$ ,  $r=0.265$ ) were found to be significant factors leading to a rise in serum creatinine post-CA. Consequently, multivariate analysis showed that age ( $p=0.016$ ), baseline eGFR ( $p<0.001$ ) and number of diseased vessels ( $p<0.001$ ) were independent predictors of decline in renal function post-CA.

12 subjects out of the total had a =25% rise in serum creatinine, thus satisfying the arbitrary criteria for CIN. Microalbuminuria ( $p=0.03$ ), FBG ( $p=0.015$ ), use of diuretics ( $p=0.042$ ), DM ( $p=0.02$ ), number of diseased coronary vessels ( $p=0.001$ ) and left ventricular impairment ( $p=0.004$ ) were found to be significant contributory factors to 25% rise in serum creatinine.

**Conclusions:** Multivessel coronary artery disease in combination with contributing factors, mainly DM, use of diuretics and left ventricular impairment, can lead to a significant decline in renal function following contrast administration in CA. The presence of the above factors should alert the caring physician to preventive measures, mainly adequate hydration of the patient at risk.

## CVS 9

### Pregnancy in classic fontan and total cavopulmonary connection - two cases compared

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**Aims:** Case report: Introduction: Fontan-type surgery refers to a number of palliative interventions which are resorted to in patients with congenital heart disease where biventricular repair is not possible.

Patients with this kind of anatomy are prone to long-term complications, several of which become more important during pregnancy. This reports the first two pregnancies in patients with palliated, univentricular hearts, one with total cavopulmonary connection (TCPC) and another with atriopulmonary connection, comparing and contrasting their complications.

**Results:** Case description: Patient 1, 27 years old and unmarried, presented to GUCH clinic when 14 weeks pregnant. She had undergone TCPC with intraatrial tunnel for double outlet right ventricle in London, UK at age 8 years. She had been leading a normal life since and her only medication was aspirin 75mg daily. Regular echocardiograms throughout pregnancy detected progressive dilatation of the inferior vena cava. Her pregnancy was uneventful other than for slight vaginal bleeding at 6 weeks and foetal growth plotted above the norm. Patient 2 was 28 years old at the time of her planned pregnancy. She had an atriopulmonary connection for tricuspid atresia in Sydney, Australia at age 8 years. She developed atrial flutter aged 19 years and was on long-term warfarin. This was changed to aspirin when she expressed the wish to get pregnant but had to be changed to subcutaneous low-molecular weight heparin in view of recurrence of atrial flutter early in pregnancy. There was trivial mitral regurgitation on

prepartum echocardiography which worsened significantly during pregnancy leading to increasing left ventricular dimensions and features of mild heart failure needing diuretic treatment. Serial ultrasounds showed the foetus to be small for gestational age. Elective Caesarean section under epidural anaesthesia was opted for in both instances.

**Conclusions:** Discussion and conclusion: There are increasing reports of pregnancies in women with Fontan-type operations but the various modifications are usually not separated clearly. These 2 cases suggest that pregnancy is less well tolerated in women who have undergone older-style palliation and can be associated with smaller babies. Close liaison with obstetricians is of utmost importance to ensure a successful outcome in such pregnancies.

## CVS 10

### The radial approach for coronary intervention in patients with increased bleeding tendencies - case reports

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**Aims:** Case Reports: The femoral approach for coronary angiography (CA) and percutaneous coronary intervention (PCI) carries with it a significant risk of bleeding. This is increased in patients with coagulopathies and in anticoagulated patients. We report 2 such cases where the radial artery approach was resorted to.

**Results:** Case Description

Case I: 67 year old male with von Willebrand disease (vWD) who underwent CA for a history of chest pain and a positive exercise stress test. He was transfused 6 units of cryoprecipitate prior to CA. This was successfully performed using 4Fr catheters via the right radial approach. Haemostasis was achieved using the TR Band™ radial compression device for 2 hours.

Case II: 47 year old male with a history of peripheral vascular disease and left femoro-pedal bypass who was being treated with warfarin. He presented with an acute inferior ST-elevation myocardial infarction. Since both thrombolysis and primary PCI via the femoral approach were contraindicated, primary PCI to an occluded right coronary artery was successfully performed via the right radial approach using a 6Fr sheath. Haemostasis was similarly achieved using the TR Band™ for 4 hours.

**Conclusions:** The radial approach has gained popularity over the past decade since it offers improved patient comfort with immediate ambulation. There is a reduction in access site complications such as pseudoaneurysms, arterio-venous fistulas and transfusions, less local nerve injury, and no need for closure devices. Its major benefit is a marked reduction in bleeding as the artery is small, superficial and can be easily compressed against bone. In patients with vWD and treatment with warfarin complete haemostasis is difficult with the femoral artery approach as the artery is deep, not compressible against bone and occult bleeding into the retro-peritoneal space may go unnoticed. Disadvantages of the radial approach include a smaller artery which may go into spasm, it needs more operator expertise and it is not appropriate for patients with an abnormal Allen's test. The radial artery approach is the access of choice for patients with high risk of bleeding

## CVS 11

### **Transthoracic and transoesophageal echocardiography in the differential diagnosis of right atrial masses. Is the eustachian valve truly benign? Case report and discussion of literature**

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**Aims:** We report the case of what initially resembled a right atrial (RA) myxoma on 2-dimensional transthoracic echocardiography (TTE) but turned out to be a large Eustachian valve (EV) on multiplane transoesophageal echocardiography (TOE).

**Results:** TTE was carried out on a 69 year old gentleman to investigate pyrexia of unknown origin. This revealed an echogenic mass within the RA on the apical 4-chamber view, initially suggestive of a tumour. Follow-up TOE apart from excluding valvular vegetations allowed for proper visualization of the RA pseudomass through the mid-oesophageal bicaval and right-ventricular inflow/outflow views. The undulating, filamentous structure seen in the RA represented a EV of no clinical significance.

**Conclusions:** Higher transducer frequencies (~7.5MHz) employed in TOE provide superior axial resolution (~0.3mm) as compared to TTE meaning that smaller structures are better delineated making this modality a key player in the differential diagnosis of intracardiac masses.

The sinus venosus valve directs oxygenated blood from the inferior vena cava (IVC) towards the foramen ovale during foetal life disappearing after birth or persisting as the EV: a small crescentic endocardial fold along the anterior rim of the IVC. Larger persistent EVs will have one free edge and another originating from the RA wall above the origin of the IVC. EVs vary widely in size, shape, thickness, texture and mobility. They are clinically insignificant in most cases averaging 3.6mm in length but elongated EVs apart from mimicking RA masses may also be more prone to clinical sequelae. Large EVs associated with an atrial septal defect (ASD) may encourage caval flow across the defect causing cyanosis or facilitating paradoxical embolism. Elongated EVs may obstruct IVC flow producing systemic venous congestion or may serve as a nidus for infective endocarditis. Rarely myxomas, papillary fibroelastomas or RA cysts have arisen on large EVs. Thrombi may aggregate onto persistent EVs in cardiomyopathic hearts predisposing to pulmonary embolism. EVs may interfere with percutaneous closure of ASDs and prove clinically relevant in the pathophysiology of arrhythmias. Rare giant EVs may appear to divide the right atrium beckoning great caution in distinguishing this from the true cor triatriatum dexter.

## CVS 12

### **An audit on the safety and cost effectiveness of use of low molecular weight heparin (enoxaparin) in the outpatient management of deep vein thrombosis in Malta**

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**Aims:** Deep vein thrombosis (DVT) is a medical emergency, traditionally treated on an inpatient basis with intravenous unfractionated heparin. With the advent of low molecular weight heparins, outpatient treatment has become possible because of once

daily subcutaneous administration and a predictable anticoagulant response. A number of international studies have proven low molecular weight heparins to be safe and cost effective in the outpatient management of DVT. To assess the safety, complications and cost effectiveness of low molecular weight heparin (Enoxaparin) use since its introduction in Malta in July 2007.

**Methods:** All medical patients with confirmed DVT from July 2007 to April 2009, not meeting the exclusion criteria (defined in the clinical practice guidelines) were included in the study. Patient records were accessed and data used a) to calculate total cost of outpatient treatment versus inpatient management and b) to analyze complications.

**Results:** Three out of 63 patients (4.76%) had minor bleeding. No cases of major bleeding, heparin-induced thrombotic thrombocytopenia or recurrence of venous thromboembolism were noted. A paired Student T-test shows a highly significant difference in mean cost per patient between outpatient (€656) and inpatient (€2390) treatment at the 95% confidence interval. The total cost of outpatient management over the study period was €47,866 while that of inpatient management was €174,476; resulting in a difference of €126,610. This implies a saving of about €60,000 per annum in terms of cost and a saving of 536 bed days over the entire study period.

**Conclusions:** Low molecular weight heparin can be used safely and effectively to treat patients with deep vein thrombosis at home. In view of the escalating costs of the national health care system and the limited availability of hospital beds, this study confirms that the use of Enoxaparin provides an economic advantage to the country.

## CVS 13

### **Audit on thromboprophylaxis in medical admissions at mater dei hospital**

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**Aims:** The main aim is to assess whether appropriate thromboprophylaxis is prescribed to patients admitted to all acute medical wards.

**Methods:** This audit was carried out over a one-week period looking at all the newly admitted medical patients at Mater Dei Hospital. Two proformas were used. One proforma contained all relevant patient demographics including reason for admission, current treatment, comorbidities and whether thromboprophylaxis was prescribed by the admitting doctor or by the firm on the post-take round. The second proforma took the form of a risk score assessment sheet in accordance to a standard guideline issued by the DOH (UK). This sheet included a list of factors increasing thrombosis risk as well as factors favouring an increased risk of bleeding. Following admission the authors reviewed all the admitted patients and their relevant notes using these 2 proformas. The patients were then categorised as either having an increased risk of thrombosis hence requiring thromboprophylaxis or an increased risk of bleeding (and thus precluding the need to prescribe thromboprophylaxis). The admitting doctors were then audited for the prescription of thromboprophylaxis where appropriate.

**Results:**

- Total number of patients admitted to MDH - 266
- No. of patients already on full anticoagulation - 54 (20%)
- No. of patients not anticoagulated - 212 (80%)

- No. of patients in whom thromboprophylaxis is indicated -160 (75%)
- No. of patients in whom thromboprophylaxis not indicated- 52(25%)
- Prophylaxis indicated but contraindications present -41 (26%)
- Prophylaxis indicated and NO contraindications present - 119 (74%)
- Prophylaxis actually prescribed by admitted doctors - 7 (6%)
- Prophylaxis indicated but not prescribed - 112 (94%)

All the above results will all be presented in a graphical manner in the poster as well as with relevant statistical significance.

**Conclusions:** As one can see from the above results thromboprophylaxis is still under utilized and hence doctors should be made more aware of the need to prescribe appropriate thromboprophylaxis where needed. The authors have already given a talk with the above results to all BSTs/HSTs in A&E as well as general medicine in order to create more awareness and they shall also be doing a re-audit on the same topic in the coming month.

#### CVS 14

### How well are our patients managed at the anticoagulation clinic (acc)? Evaluating a new model to improve control

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**Aims:** The aims of this study were twofold. It was intended to investigate the time patients spent within the targeted INR range in a Maltese setting. Another purpose of the study was to formulate, evaluate and compare a suitable guide for oral anticoagulant prescribing. An innovative dosing algorithm is proposed and is compared with current doctor-based prescribing.

**Methods:** A total of 118 anticoagulation booklets were analysed according to the Rosendaal et al method to find the time patients spend within the intended therapeutic range. The target range, the INR at each visit and the date of appointment at the clinic were essential information for this study.

An algorithm encoded in Visual Basic within Microsoft Office ACCESS 2007 has been utilised as a tool to calculate an appropriate dose at each visit. The doses proposed by the algorithm and those prescribed by the doctor were compared using three methods. This was done in order to investigate which of these 2 prescription methods is the more effective in maintaining patients within their therapeutic range.

**Results:** Fifty per cent of the total INR results of the 118 patients reviewed were within therapeutic range, and 14% of the patients had their INR within range for 76-100% of the time. This compares well with other studies elsewhere. In the study it is statistically proven that the computer-assisted dosing algorithm makes better decisions and prescribes a more appropriate dose.

**Conclusions:** Studies indicate that even if patients have INR readings, which are 10% of the time out of therapeutic range, they have an increased risk of mortality, ischaemic stroke and other thromboembolic events. In hospital outpatient's anticoagulation clinics, pharmacists have been shown to effectively manage anticoagulation therapy as demonstrated through a significantly

higher incidence of INR readings within therapeutic range when compared to patients managed by physicians. With the help of computerised dosing systems and point-of-care monitoring devices, pharmacists can provide a specialised service. Pharmacists can focus better on educating patients, on their problems and medications, and thus can improve their compliance with treatment.

#### CVS 15

### Cost-effectiveness and clinical impact of point of care vs laboratory measurement of inr in a Maltese out-patient setting

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**Aims:** To study the possible advantages and feasibility of replacing the present system of laboratory-based International Normalised Ratio (INR) testing with Point Of Care (POC) systems for the monitoring of out-patients on anti-coagulation treatment.

**Methods:** Patients on anticoagulation treatment in Malta are followed up with regular INR testing at the Anticoagulation Clinic (ACC) at Mater Dei Hospital and Health Centres. A very small proportion of patients are tested by private laboratories. We analysed the combined financial burden of the present system taking into account the costs involved in the use of disposables, use of laboratory equipment, reagents, manpower and the expenses involved in notifying results to patients. We used this data to carry out a comparison to a hypothetical system based on POC including the costs of manpower, disposables and use of POC machines.

**Results:** Comparison of the two systems using local patient data suggests that POC systems would be cheaper to operate than the present laboratory-based practice if all costs associated with the two systems are taken into consideration.

**Conclusions:** The introduction of POC systems for the monitoring of INRs in non-hospital based patients will result in financial savings. The introduction of POC INR monitoring machines will also result in significant advantages for the patient, since a properly managed POC system has the potential of reducing waiting times, eliminate the possibility of recalls and could simplify the future introduction of INR management software.

#### CVS 16

### Stress NT-proBNP levels and intraventricular flow

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**Aims:** Ratio of early peak diastolic transmitral E wave velocity to flow propagation velocity Vp (E/Vp) measured by colour M-mode Doppler can be used to predict slowing of mitral-to-apical flow propagation because of the reduction of apical suction and E/Vp over 2.5 correlates with pulmonary capillary wedge pressure over 15 mm Hg. The assessment of the blood concentration of N-terminal pro brain natriuretic peptide (NT-proBNP) can detect left ventricular (LV) diastolic dysfunction, in patients (pts) with hypertension.



**Methods:** We studied 62 (42 females, 67.7%, age 48-62 years, mean age 54.4% +/-6.8) ambulatory adequately-controlled hypertensives with left ventricular hypertrophy, preserved LV systolic function, with no history of myocardial infarction, coronary revascularization or diabetes mellitus. All of them had a microvascular disease - normal coronary angiography, and negative myocardial perfusion scintigraphy, but ischaemic-like ST segment changes on stress electrocardiography (SECG). Vp was measured as the slope of the first aliasing velocity during early filling measured from the mitral valve plane to 4 cm distally into the LV cavity and E/Vp ratio was calculated. The blood samples for the measurement of NT-proBNP by ELISA method were collected by venipuncture in SECG within first 5 minutes in the recovery.

**Results:** Patients with E/Vp under 2.5 (n=48) had a mean NT-proBNP concentration of 226±80 ng/l (levels within the normal range); those with E/Vp over 2.5 (n=14) had a significantly elevated mean NT-proBNP concentration of 886%±111 ng/l (p<0.05).

**Conclusions:** The assessment of the blood concentration of NT-proBNP in a rapid assay during SECG in hypertensives with microvascular disease might be of potential value for identification of those with early cardiovascular changes, especially significant intraventricular flow abnormalities.

## CVS 17

### Graft surveillance programme for infrainguinal vascular bypass surgery

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**Aims:** TASC recommendation number 42 states that patients undergoing bypass graft placement in the lower limb should be entered into a clinical surveillance programme. Most surgeons also enter these patients into a graft surveillance programme using duplex scanning. The aim of this programme is to identify stenoses in vein grafts before they become symptomatic and treat these by angioplasty thus prolonging the patency of the graft. A graft surveillance programme has been set up at Mater Dei Hospital and this paper reports on the progress of this programme.

**Methods:** Every patient who undergoes infrainguinal vein bypass surgery is automatically entered into the graft surveillance programme. Scanning starts during the patient's in-hospital stay at one week post-operation. It is then scheduled at 6 weeks, 3 months, 6 months, 12 months, 18 months, 24 months, and yearly afterwards. If any problem is detected scanning can be done at more frequent intervals. When a significant stenosis is encountered, the patient is referred for angioplasty. Surgery would be considered in cases when angioplasty is not an option. Only bypasses involving vein grafts are entered into the programme. For the purpose of this paper, infrainguinal bypass grafts carried out between July 2007 and May 2009 were considered.

**Results:** During the study period 58 patients underwent infrainguinal bypass graft surgery involving the use of vein grafts. 3 patients died in the post-operative period leaving the number of patients who entered the graft surveillance programme at 55. At one week post-op the patency rate was 100%. At 6 months the primary unassisted patency was 77.5% while the primary assisted patency was 87.5%. At 12 months the primary unassisted patency was 50% while the primary assisted patency was 77.2%. Secondary patency

rates at 6 and 12 months were 95% and 81% respectively.

**Conclusions:** The graft surveillance programme ensures that any problem detected in the post-operative period is dealt with as soon as possible. The results of this study show that the graft surveillance programme is being effective in identifying asymptomatic stenoses and that intervention in the form of angioplasty or surgery has resulted in high patency rates.

## CVS 18

### An analysis comparing open surgical and endovascular treatment of atherosclerotic renal artery stenosis

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**Aims:** Endovascular revascularization in atherosclerotic renal artery stenosis (ARAS) has dominated during the last 15 years with surgery relegated mostly to back-up for failed endovascular procedures. This study examines the available outcome evidence to determine what role open surgery should have in comparison to endovascular treatment in the management of ARAS.

**Methods:** Of 183 papers listed in Pub-Med, the USNLM and the Cochrane library, (1975- 2004) 47, dealing with outcomes of surgical and endovascular treatments (evidence levels 2b and 3) were selected.

Endovascular included 1750 patients in 16 prospective non-randomised (PNRT) and 5 retrospective (RET) studies. Surgical included 2314 patients in 4 PNRTs and 17 RETs. Outcome data were subjected to meta-regression analysis weighted according to the inverse variance

**Results:** Mean maximum surgical age was 79.4 (SD6.9) versus 83.6 (SD3.8) for endovascular. Primary technical success was similar. Endovascular patency declined by 0.26%/month (95%CI:0.04-0.48,p=0.03). Surgical studies showed greater improvement for hypertension control by 21%(95%CI:9-33%,p=0.001) and for renal function by 34% (95% CI 18-54%, p<0.001), as well as a higher creatinine reduction by 32µmol/L (95%CI: 7-57µmol/L, p<0.014). A higher excess surgical mortality, 3.1% (95%CI:1.8-4.4%, p<0.001) became insignificant, 0.18% (95%CI:0.7-1.1.,p=0.70)when concomitant aortic surgery was excluded.

**Conclusions:** This data shows a marked and durable clinical benefit for surgery. These findings question the endovascular predominance in intervention in ARAS and highlight the need for a carefully designed prospective randomized comparison to define the roles of endovascular and surgical renal revascularisation.

## CVS 19

### Two stage complex embolization of an arteriovenous fistula between the right common iliac artery and the inferior vena cava

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**Aims:** Case Report

**Results:** We present an interesting case of a symptomatic high flow AV fistula between the right common iliac artery (CIA) and the inferior vena cava (IVC), successfully treated by endovascular coil embolization. The patient was found to have a right lower polar renal artery crossing the ipsilateral ureter arising from

the CIA, causing pelvi-ureteric junction (PUJ) obstruction and recurrent pyelonephritis. It is hypothesized that this fistula arising from the lower polar renal artery and entering the IVC, may have occurred as a result of trauma during a previous pyeloplasty, or a pathologically induced process of angiogenesis stemming from recurrent pyelonephritis.

**Conclusions:** The evidence supporting aberrant renal vasculature is well recognised and we believe that this case brings to light a multitude of important points. Firstly, aberrant anatomy must be immediately considered for cases in which unexpected bleeding is encountered during primary renal surgery. This should lead the surgeon into requesting urgent angiography to establish the cause and location of the bleed. Secondly, routine pre-operative vascular imaging may potentially reduce complication rates in cases of native kidney nephrectomy for longstanding PUJ obstruction. Such cases should be jointly managed by radiologists, urological and vascular surgeons. Thirdly, the use of combined transarterial and transvenous embolization is a viable and successful technique which should be considered as a primary option in the management of complicated high output AV fistulas. Finally, many authors have described altered renal vasculature. However, the prevalence of the more common variables is poorly described. Perhaps a more detailed assessment of the renal vasculature in both cadaveric specimens and post mortem patients would give us a clearer picture.

## CVS 20

### Cystic adventitial disease of the popliteal artery - a case report

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**Aims:** Case Report

**Introduction:** Cystic adventitial disease is a rare condition with less than 500 cases reported in the world literature since the first case was described in 1947. CAD results from the collection of a gelatinous material within a cyst adjacent to or surrounding a vessel resulting in pressure on that vessel and ischaemia.

**Methods:** We report a case of cystic adventitial disease in a 45 yr old keen rock and roller with an unusual presentation. This patient presented with amongst other symptoms, inability to continue to engage in his passion for rock and roll. The diagnosis of cystic adventitial disease was made on CT angiography where the cystic collection compressing the left popliteal artery was identified.

**Results:** A posterior approach to the popliteal artery allowed enucleation of the cystic structure with elimination of the popliteal stenosis confirmed with on table angiography. This resulted in immediate resolution of symptoms and a return to normal of his ankle brachial pressure indices. He made a swift recovery from his surgery and was discharged two days postoperatively.

**Conclusions:** Conclusion: This is the first case of CAD reported in Malta. The early recognition of the underlying pathology in this patient allowed treatment by enucleation of the cyst before progression to occlusion of the popliteal artery, hence avoiding interposition bypass grafting. CT angiography proved to be useful in preoperative diagnosis of the condition.

## CVS 21

### Anatomical positioning of drilling device for accessing pulmonary trunk bifurcation regarding potential embolus therapy

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**Aims:** Pulmonary Thromboembolism is a relatively common emergency condition. Despite this, current investigations (including D-Dimer, Spiral Computer Tomography, pro-Brain Natriuretic Peptide and Cardiac Troponin) and treatment (including Low Molecular Weight Heparin, Computer Tomography Pulmonary Angiography, Surgical Embolectomy or Catheter Based Local Thrombolysis) are not as fast and reliable as one would wish. With this background, the aim was to perform a proof of principle experiment for a simple device that is easy to operate in the ward itself, in case of a life-threatening embolism. The specific aim was to identify drilling parameters to access the pulmonary trunk without damaging any adjacent structures.

**Methods:** A hole-cutting drill bit with a diameter of approximately 2cm was advanced into a fresh cadaver thorax in the direction surmised to hit the pulmonary trunk using standard anatomical landmarks of the anterior thorax.

**Results:**

1. Dissection of the cadaver thorax showed that the device entered the bifurcation of the pulmonary trunk without damaging the aortic arch or the pleura and lungs on both sides of the chest.
2. The entry point used was 2.5 cm cranial to the suprasternal joint in the midline about 7cm caudal to the jugular notch.
3. The drill had been angled at 50 degrees to the skin (at the manubrium) and was also angled 50 degrees cranially from a transverse plane passing through the drill site.
4. These measured angles were used to repeat the experiment on a second much smaller cadaver thorax, also using an entry point one fourth of the distance up the manubrium from the angle of Louis. Dissection once again showed a clean entry without collateral injuries.

**Conclusions:** This device could eventually have a diagnostic component (Echo/Doppler) as well as an interventional component to physically fragment and/or aspirate the embolus. The angles and landmarks identified in this initial proof of principle experiment are vital for the future design of the device and its adaptability to different individuals. It is hoped that such a device would provide a treatment option for cases of saddle pulmonary embolus with few alternatives.

## CVS 22

### The complication rate following peripheral angioplasty in Malta is low and compares well with other major centres

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**Aims:** Peripheral angioplasty is increasingly the first choice intervention for patients with peripheral vascular disease. The aim of this current study was to audit all major complications and their management within 30 days of angioplasty.

**Methods:** 168 interventional angioplasties in 154 patients were analysed retrospectively by review of patients' records and telephone interview. All procedures were carried out at Mater Dei Hospital between November 2007 and March 2009.

**Results:** The technical failure rate was 12% (20/168). The total complication rate was 24% (41/168). There were seven thromboembolic complications, six required same day surgery, three resulted in limb loss. There were nine run off dissections, one required surgery, two were stented, six were treated conservatively. There were thirteen puncture site haematomas, four required transfusion. five patients developed a raise in creatinine post plasty two of whom required dialysis. Other complications included one false aneurysm, one trash foot, twelve medical complications and seven deaths (4%). Two deaths followed elective bypass surgery post angioplasty (one myocardial infarction and one renal failure). The other five deaths included one post-myocardial infarction; one due to haemorrhage; two from sepsis and one from pulmonary oedema. The incidence of complications requiring emergency surgical intervention was small (3.5%) and in accordance with the 1.6 – 3.6% experience reported in the literature. The 30 day amputation rate was 7% (12/168), the majority of which were due to progression of disease. There were 20 readmissions within 30 days, 13 due to progression of disease, 7 due to complications.

**Conclusions:** The majority of complications 18% (31/41) were minor, the major complication rate was 6% (10/168). A review of the literature suggests that 4 – 18% of patients will suffer some complication following angioplasty, although this figure will inevitably vary according to case mix as well as a lax definition of what constitutes a complication. There were 12 medical complications, reflecting the associated co-morbidities of vascular patients. In common with other units overseas, angioplasty is the first line treatment in the majority of vascular patients who can expect a low procedural risk.

## ONC 1

### High prevalence of symptoms reported in the english national bowel cancer screening programme; data from the first-screening centre

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**Aims:** Bowel cancer screening with faecal occult blood testing (FOBT) and colonoscopy has been shown to reduce colorectal cancer mortality. The UK National Bowel Cancer Screening Programme commenced in July 2006 in Wolverhampton (screening population 850 000). 60–69-year-olds are offered FOBT, then colonoscopy if FOBT-positive. Our aim was to determine whether we are screening an asymptomatic population, or whether there are pre-existing symptoms.

**Methods:** FOBT-positive patients attending nurse clinics were questioned prospectively regarding symptoms. Data were analysed to determine the prevalence of symptoms, the pathology detected and whether symptoms predicted pathology.

**Results:** The total population in the screening area is 850,000. 87,876 FOBT kits were sent out with 45,849 returned (52% uptake). 913 colonoscopies were performed with 94.75% unadjusted caecal

intubation rate. Data on pathology found at colonoscopy and symptoms reported during the first 2 years of the bowel cancer screening in Wolverhampton were analysed (see table). Most patients had more than one symptom. There was no statistically significant association between the presence of individual or collective symptoms and pathology detected.

Table: Symptoms reported by subjects compared to pathology detected at colonoscopy.

1. Colorectal Cancer (91 patients): Bleeding - 46%, Weight loss - 23%, Diarrhoea - 18.6%, Constipation - 18.6%, asymptomatic - 23%.
2. Adenomas (322 patients): Bleeding - 54.3%, Weight loss - 15.2%, Diarrhoea - 20.8%, Constipation - 20.8%, asymptomatic - 26%.
3. Inflammation (28 patients): Bleeding - 53.6%, Weight loss - 17.9%, Diarrhoea - 39%, Constipation - 35.7%, asymptomatic - 21%.
4. Nil significant (398 patients): Bleeding - 48.2%, Weight loss - 19.8%, Diarrhoea - 25.4%, Constipation - 36.2%, asymptomatic - 26.4%.

**Conclusions:** The majority of patients in the screening programme report recent gastrointestinal symptoms. Approximately 1 in 4 patients overall were asymptomatic. This phenomenon of a high proportion of symptomatic patients is common in the first round of screening programmes, and can be attributed in part to raise awareness of the importance of pre-existing symptoms. Symptoms, individually or collectively, do not predict pathology in this bowel cancer screening population.

## ONC 2

### Hospice pharmacist interventions in palliative care

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**Aims:** The aims were to devise a documentation sheet to be used by the pharmacist during home visits and to design a protocol for the hospice pharmacist.

**Methods:** A pharmacist documentation sheet was compiled after attending four home visits with the hospice nurse and identifying potential pharmacist's interventions. All the interventions observed were noted and developed within the pharmacist documentation sheet. The pharmacist documentation sheet documented interventions in completing a patient's drug documentation sheet in order to aid compliance, identifying and labelling drugs and providing drug information to patients and their families. A protocol for hospice pharmacist interventions was compiled to outline the participation of the pharmacist within the palliative care team. The protocol stated responsibilities of the pharmacist within this setting. Subsequently the pharmacist intervention sheet and the protocol were implemented during visits by the pharmacist with the hospice team to 13 patients.

**Results:** The investigator was responsible for documentation by completing the drug and pharmacist documentation sheets, the pharmaceutical care plan and checking compliance in all the thirteen

(100%) patients who were visited. The investigator identified drug-related problems in 77% of patients, whereby problems related to side-effects were observed in 60% of cases. Problems related to potential interactions were seen in 40% of patients, drug choice and administration in 20% and dosing frequency in 30%. In 69% of cases, the pharmacist was responsible for providing information and presenting recommendations of drug therapies to hospice staff. The developed protocol outlined pharmacist responsibilities to document the drug details onto the drug documentation sheet, document the pharmacist interventions during the visit, develop a pharmaceutical care plan and assess the patients' quality-of-life and compliance with medications.

**Conclusions:** Currently there is no hospice pharmacist in the local scenario. The study has shown that involving a pharmacist in a hospice results in better patient management. A multidisciplinary team approach would be more complete if there is a hospice pharmacist who is actively involved in the implementation of palliative care services.

### ONC 3

#### Synchronous colonic adenocarcinoma and renal oncocytoma: a case report and literature review

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**Aims:** Case Report

**Results:** We report the case of a patient presenting with a synchronous colonic adenocarcinoma and renal oncocytoma, and review current literature on this subject.

*Case Report:* Sixty-six year old gentleman who presented to the surgical clinic with: 4 month history of lower abdominal pain and 3 month history of increasing frequency of defaecation and intermittent fresh rectal bleeding. Physical examination was normal.

*Investigations:* A staging abdominal Computed Tomography (CT) scan showed a 62 mm mass at the lower pole of the left kidney, suggestive of a renal cancer. No liver or lung metastases were present. At Colonoscopy a stricturing adenocarcinoma was found in the descending colon.

#### Histopathology

*The pathologist reported:* A 34mm moderately differentiated adenocarcinoma (Dukes' B, pT4 No) of the descending colon and a left renal oncocytoma measuring 55mm.

*Further Management and Outcome:* The patient underwent a simultaneous left hemicolectomy and left nephrectomy. The outcome of surgery was successful. The patient was discharged home on the 10th postoperative day. At 12 months following surgery, the gentleman is well and free from any recurrent or metastatic disease.

*Literature Review:* The reported incidence of oncocytomas is between 1.3% and 18% of primary renal neoplasms. If one had to study renal tumours of 4cm or less the incidence would rise to 18%. Smaller renal tumours have been proven to be, or likely to be, benign or of a lower grade of malignancy. The incidence of synchronous renal and colorectal neoplasia has been shown to stand somewhere between 0.1% and 5%. The renal tumour is usually an incidental finding on a staging CT scan prior to surgery for colorectal cancer.

Synchronous colon cancer and renal oncocytoma is extremely rare. Cases with a strong family history have been linked with underlying genetic mutations such as those found in Lynch II syndrome. However many of the cases reviewed in the literature of associated colon and renal malignancy do not exhibit a strong family history of neoplasia.

**Conclusions:** Accurate differentiation between renal cancer and oncocytoma on preoperative imaging or percutaneous biopsy remains difficult. Synchronous colorectal and renal neoplasia may be treated simultaneously, at open or laparoscopic surgery, without any significant increase in morbidity.

### ONC 4

#### A comparative analysis of colorectal cancer (crc) site localization at endoscopy using the endoscope position detecting unit (EPDU), abdomino-pelvic CT versus surgery

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**Aims:** Studies have shown that the position of CRC at endoscopy is incorrectly labelled in 20-40% of cases. In the National Bowel Cancer Screening Programme (NBCSP) at Wolverhampton (UK) we use the EPDU during every procedure. Our aim was to compare the reliability of the Olympus EPDU in CRC localization at colonoscopy, versus CT and surgical localization.

**Methods:** Patients who underwent CRC screening at Wolverhampton (August 06 – May 08) were identified through the NBCSP database. Data was obtained from patients case notes, endoscopy and operative notes.

**Results:** In total there were 59 patients (Males -38 patients) with CRC who had undergone surgery. Patients who had cancer polyp removed endoscopically with no surgical intervention were not included. 2 patients had synchronous tumours. One patient had a CRC in the ascending colon and a synchronous tumour in the transverse colon. The other patient had an impassable stricturing CRC in the sigmoid and synchronous one in the ascending colon.

The table below shows tumour localization at surgery(S), endoscopy (E) and on CT.

Rectum -	13 (S),13 (E),7 (CT);
Rectosigmoid -	2 (S), 2(E), 1 (CT);
Sigmoid -	17 (S),16 (E), 13 (CT);
Descending -	2 (S),2(E),2 (CT);
Splenic -	4 (S),3 (E), 3 (CT);
Transverse -	5 (S), 4(E),4 (CT);
Hepatic -	7 (S),6 (E),7 (CT);
Ascending -	7(S), 6(E),7 (CT);
Caecum -	4(S), 3(E),4 (CT).

**Conclusions:** Precise tumour localization is imperative for minimally invasive surgery. Identification of CRC using the EPDU during colonoscopy led to the correct CRC localization in 91.7% . 77% of CRC were identified on CT. 11 out of 13 CRC that were not identified were in the rectum or sigmoid. MRI of the pelvis should give better staging information.

Besides its role in site recognition, the EPDU is also useful during colonoscopy in loop recognition, thus facilitating the procedure and increasing the caecal intubation rate. This was our initial experience with the EPDU. With time our experience with the EPDU will increase, thus allowing better site recognition.

Tattooing may further aid CRC identification at surgery. However complications secondary to it have been reported.

## ONC 5

### Small bowel lymphoma mimicking crohn`s disease

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**Aims:** Case report

**Results:** A 37 year old male presented with an 8 week history of diarrhoea, weight loss and fever. He was admitted to hospital and commenced on antibiotics. Blood investigations: Hgb 10.1g/dl, WCC -21.3 x10e9/L, MCV-73.6 fL, Plt-355 x 10e9/L, ESR 21mm/hr, CRP -186 mg/L. CT Abdomen revealed small bowel mucosal swelling, distended jejunal loops and an abdominal abscess communicating through a fistula with the small bowel. Colonoscopy revealed an ulcer in the transverse colon, suggestive of Crohn`s disease. However, histology revealed high grade B Cell Non-Hodgkin`s lymphoma (NHL).

Immunohistochemistry was positive for the CD20 antigen. He then developed intestinal obstructive symptoms. At surgery, the proximal part of the mesentery and jejunum were infiltrated by a soft tissue mass and affixed to the transverse colon with proximal small bowel pre-stenotic dilatation. A feeding jejunostomy, decompressive gastrostomy and colostomy were done with a view to start chemotherapy. Post-operatively he developed sudden severe abdominal pain, followed by haematemesis leading to a fatal arrest. Post-mortem revealed blood in the abdominal cavity, a 9cm perforated tumour (NHL) arising in the jejunum and involving the transverse colon.

**Conclusions:** 2% of GI tumours arise in the small bowel of which 15% are lymphomas. Primary small bowel lymphoma (PSBL) is mostly B-cell NHL. T-cell lymphomas arise in the context of untreated coeliac disease. Coeliac serology was negative. Bone marrow aspirate and trephine biopsy were normal, confirming PSBL. Our patient had advanced disease: Stage 3E disease, 9cm tumour communicating with an intra- abdominal abscess.

The best treatment is surgery. Chemotherapy is an alternative. In non-responders, immunochemotherapy with a monoclonal antibody against the CD20 Ag should be considered. Radiotherapy may be used to decrease tumour load or residual disease. Due to their low incidence and lack of trials, the optimal treatment strategy is yet to be determined. Initially, clinical, radiological and endoscopic findings were in keeping with Crohn`s disease. In our opinion there are various gastrointestinal presentations whose clinical and endoscopic macroscopic appearances may mimic the commoner pathologies. This case highlights the importance that before administering steroids or immunomodulators a definitive histological diagnosis should be available. Due to the non-specific symptoms of small bowel tumours, the early use of capsule endoscopy may aid in diagnosing early stage disease.

## ONC 6

### Vaginal leiomyosarcoma in the episiotomy site

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**Aims:** This is a case report regarding a very rare tumour (leiomyosarcoma) emanating from the scarred tissue of an episiotomy site.

**Methods:** A 53 year old lady presented to the Gynaecological Outpatient`s Department complaining of superficial dyspareunia over a period of six months. On examination a hard 3 cm non-tender lump was felt in the scarred episiotomy site. In view of the patient`s symptoms an excision biopsy was decided upon. The patient was counselled that due to the proximity of the vaginal lump to the rectum that there was the remote possibility that rectal injury may occur. An excision biopsy was performed under general anaesthesia removing most of the lump. Due to the proximity to the anal canal some tissue was left in situ. The histology of the excision biopsy revealed spindle cells appertaining to leiomyosarcoma with 10 mitotic figures per high powered field.

**Results:** In view of the histology and the site of the tumour, a total abdominal hysterectomy, bilateral salpingo-oophorectomy, posterior colpotomy and posterior exenteration with colostomy were performed by a combined surgical and gynaecological team. The post-operative period was uneventful. Histological examination indicated that the tumour was completely excised with the surgical margins free from any tumour. The patient is currently being followed up by the oncological and gynaecological departments.

**Conclusions:** In the Anglo-Saxon literature there are only 47 cases of vaginal leiomyosarcomas reported and this is the first case report of a leiomyosarcoma occurring in the episiotomy site.

## ONC 7

### Poster withdrawn

## ONC 8

### Palliative radiotherapy for a large cutaneous tumour in a frail elderly lady

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**Aims:** Case Report

**Results:** A 78 year old fair skinned, frail lady residing in the long-term institution, St Vincent De Paule Residence (SVPR) presented with a large tumour on her left temporal region. The tumour was 9.5\*7.5cm in diameter and in areas protruded approximately 1cm above the skin level. There was severe ulceration and necrosis in its centre (see figure 1). The lesion was biopsied and the histology was reported as a partially-excised keratoacanthoma. Despite this, the tumour continued to grow and became recurrently infected requiring repeated courses of antibiotics. Six months after initial presentation, a review of the initial histology was requested and this was reported as malignant change i.e Squamous Cell Carcinoma in a Keratoacanthoma. As the patient was extremely symptomatic in terms of pain and discomfort during change of dressings, the opinion of a plastic surgeon was requested who offered extensive surgical treatment. However, due to the patient`s frailty and multiple comorbidity including severe senile dementia of the Alzheimer type, grand mal epilepsy, parkinsonism, multiple

contractures, ischaemic heart disease and hypertension and would-be difficult intubation, it was decided to abandon this option after discussion with her relatives. The lady was referred for palliative radiotherapy. In order to reduce transportation of the patient to and from the nursing home, it was decided that she should be treated with a single fraction of radiation. Radiotherapy was administered using a single dose of 1500cGy with 12MeV electrons. High energy electrons can deliver a high dose of radiation to surface tissues whilst sparing deeper tissues, in this case the brain.

Immediately after the radiotherapy, the tumour started shrinking and the ulceration regressed slowly to complete resolution. (see figure 2) This was accompanied with complete resolution of the patient's symptoms and a better quality of life in terms of pain and local discomfort from the lesion up to 12 months post radiotherapy.

**Conclusions:** While surgery remains the mainstay of treatment for Squamous Cell Carcinoma of the skin, radiotherapy remains an important modality in the palliative management of large tumours especially in the frail older patient. It cannot be overemphasised that therapeutic nihilism should be avoided even in the frail, old, institutionalised patient with a large Squamous Cell carcinoma

## ONC 9

### Malignant melanoma re-excision specimens: is there a need for histopathological analysis? A ten years experience

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**Aims:** A retrospective audit of ten years to explore the necessity of sending all re-excision melanoma scars for histopathological analysis.

**Methods:** The study at our unit involved a retrospective audit of malignant melanoma over 10 years. Our database was searched for patients who were coded under melanoma between January 1999 and December 2008. All the patients that had primary excision biopsy of the suspected melanoma were included in the study. Punch biopsy and curetted specimens were disregarded. In these 10 years there were 260 patients with 290 excisions. Of these, 218 were included in the study whereas 72 were excluded as they did not meet our inclusion criteria.

#### Results:

Total number of excisions	290
Total number of excisions included	218
Total number of excision excluded	72
In Situ Melanoma	11
Incomplete Primary Excision	40
Primary wide local Excision	12
Clinical notes not found	9

The results show that in all cases were the primary melanoma was removed in the first excision, examination of the re-excisions showed no residual melanoma.

**Conclusion:** In this study we have raised the question as to whether all re-excision specimens in melanomas should be sent for histopathological analysis. This study will help us to adopt a more selective policy in sending re-excision specimens for histopathological analysis. Only re-excision scars with inadequate primary excision should be sent for analysis. This has significant implications as regards to both cost and time in processing these specimens especially when we consider that it takes 2 days to process and report a specimen. Our study confirms the findings of a much larger study carried out at the Melanoma Unit at St Georges Hospital in the UK.

## ONC 10

### Survival analysis of breast cancer patients diagnosed in the period 1998-2003

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**Aims:** Breast cancer is the commonest cancer in females in the Maltese Islands with an incidence rate of 106/100000 females (European standardised rate) in 2006. The aim of the study was to analysis 5-year cause specific survival in female patients diagnosed with breast cancer in the period 1998-2003.

**Methods:** All breast cancer patients diagnosed with malignant breast cancer in the period 1998-2003 were extracted from the National Cancer Registry. Death certificate only cases and male patients were excluded. The cases were then linked with the National Mortality Registry to obtain date of death and cause of death for patients who died till 2008. Deaths were classified into those dying from breast cancer and those dying from all other causes, in order to calculate cause specific survival.

**Results:** 1238 female patients (excluding death certificate only cases) were diagnosed with malignant breast cancer during the period 1998-2003. Average age at diagnosis was of 61 years. Cause specific 5 year survival rates were highest in those aged between 40-69 years (40-49:82 %; 50-59 years:80%; 60-69 years 81%) while worst survival rates were seen in the younger and older age groups (under 40 years: 66%; 70-79 years: 72%; over 80 years: 66%). Invasive ductal carcinoma accounted for 74% of all breast cancer cases while lobular carcinoma accounted for 8% of all cases. Patients diagnosed with lobular carcinoma had a higher cause specific 5 year survival rate when compared to those patients diagnosed with invasive ductal carcinoma. An improvement in cause specific 5 year survival rate was observed in the patients diagnosed during the period 2001-2003 (80% survival rate) compared to those patients diagnosed during the earlier period 1998-2000 (75% survival rate).

**Conclusions:** Prognosis of breast cancer depends upon a number of factors. In our study age at diagnosis was important with the young and older female patients fairing worst. Lobular carcinoma though much less common than ductal also resulted in better survival. Further analysis by stage, tumour size and other prognostic factors is needed to study their effect on survival of breast cancer patients in Malta.

## ONC 11

### Survival analysis of breast cancer patients diagnosed in the period 1998 - 2003

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<sup>1</sup> Department of Internal Medicine, Mater Dei Hospital, Malta, <sup>2</sup> Primary Health Care Department, Malta.

**Aims:** Feasibility, population acceptability and uptake are important issues in any screening programme. Our aim was to assess patient acceptability for CRC screening tests. Patient preferences between Immunochemical Faecal Occult Blood test (IFOBT), colonoscopy and a combination of IFOBT and flexible sigmoidoscopy (FS) were assessed.

**Methods:** We targeted a population between 50-70 years attending a Primary Health Care Clinic. Patients with known gastrointestinal disorders and first degree relatives with CRC were excluded due to possible bias. 100 consecutive patients who met the above criteria were asked to participate. They were explained in detail the screening methods (IFOBT, colonoscopy, IFOBT + FS): benefits, what each entails, lesion pick up rate, complications. A scoring system about attendance was devised. This was graded from 0-2 (0-definitely will not attend, 2 – will definitely attend). They were then handed a questionnaire, asked to complete it in privacy and post it within the centre.

**Results:** 97% returned the questionnaire. Mean age was 62 years (50-70 years). Male to female ratio was 1:3.71% chose colonoscopy, 26% choose IFOBT. 3% did not return the questionnaire. None of them choose the combination of IFOBT+FS. Reasons why colonoscopy was the most preferred screening tool was that it was considered the most definitive, accurate and reliable test. Patients chose IFOBT in preference to other screening tools as they considered colonoscopy to be painful, disturbing and involving significant risks. Patients did not choose the combination of IFOBT and FS as it was too complicated.

Regarding attendance, 87% answered that they will definitely attend the screening test and 10% most likely that they will attend.

**Conclusions:** Knowing the general characteristics of our population regarding one's health, this data confirmed our expectations that if a CRC screening programme is rolled out, uptake would be high. This also possibly explains why unlike other studies, the majority choose colonoscopy as the screening tool. Furthermore it gives important information regarding the screening tool employed. It is pointless having a superior screening tool (IFOBT + FS vs. IFOBT), but uptake would be poor as demonstrated by the fact that none of the patients choose the IFOBT and FS combination. This data provides useful information for planning and setting up a service of national CRC screening as national and cultural factors need to be considered.

## ONC 12

### Treatment received in patients suffering from carcinoma of the bronchus in their last month of life

C. Gouder, S. Brincat,

Department of Medicine, Mater Dei Hospital, Malta

**Aims:** To evaluate the appropriateness of treatment received by lung cancer patients in the last month of their life.

**Methods:** The oncology records of 34 patients who had passed away between 2007 and 2008, after being diagnosed with carcinoma of the bronchus, were randomly chosen at Sir Paul Boffa Hospital. Patients were divided into 2 groups, those receiving palliative treatment and those receiving radical treatment, in their last month of life. Treatment received with regards to their bronchial carcinoma in terms of radiotherapy and chemotherapy was reviewed and dated. Justification for treatment given was assessed. It was then determined what led to the patients' deterioration and eventual death.

**Results:** 55.9% of patients were not receiving any chemotherapy or radiotherapy in their last month of life. 44.1% of patients were receiving either chemotherapy or radiotherapy, or both, in their last month of life, in the form of either radical or palliative treatment. Out of the latter group of patients, 66.6% were receiving palliative chemotherapy and/or radiotherapy and 33.3% were receiving radical chemotherapy and/or radiotherapy.

**Conclusions:** Chemotherapy and radiotherapy given in the last month of life was shown to have significant importance in helping to improve symptoms and quality of life in these patients. In retrospect, radiotherapy and chemotherapy given to patients in their last month of life at Sir Paul Boffa Hospital was justified in most patients and results were in line with similar international retrospective studies. However, side effects from the treatment given and co-existing co-morbidities were found to have contributed further to complications resulting in death in both groups of patients.

The ultimate cause of death was impossible to identify in some of the patients. It was concluded that one must avoid an unduly aggressive approach to patients whilst aiming for the most effective treatment in the prevailing circumstances.

## ONC 13

### Rare case of solitary breast primary producing colonic secondaries together with umbilical, omental and peritoneal involvement, with discussion of the role of immunohistochemistry in identification of primary site.

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Malta, <sup>3</sup> Department of Pathology, Mater Dei Hospital, Malta

**Aims:** Case Report

**Methods:** Not applicable

**Results:** A 63 year old female presented with abdominal pain, nausea, vomiting and weight loss. On examination a right iliac fossa mass was present. Her past medical history included total hysterectomy with bilateral salpingo-oophorectomy, breast carcinoma which was treated with surgery, chemotherapy and

radiotherapy. Since then she had been receiving Tamoxifen, was under regular review and was in remission. CT Abdomen and Pelvis revealed a thickened, irregular, narrow caecal wall suggestive of a colonic malignancy, intra-abdominal lymphadenopathy and liver metastasis.

Colonoscopy demonstrated a polypoidal unpassable mass along the ascending colon suggestive of a malignant lesion. Histology was consistent with adenocarcinoma. Immunohistochemistry was positive for Cytokeratin (CK) 7, estrogen receptor (ER) and progesterone receptor (PR); staining with CK 20, Chromogranin A, non-specific esterase and Synaptophysin were negative. A laparotomy with ileotransverse anastomosis was performed. Operational findings were omental, peritoneal secondaries also involving the umbilicus, secondaries along the ascending colon and caecum, liver metastasis and ascites. Samples from the periumbilical nodule were consistent with metastatic adenocarcinoma.

**Conclusions:** Metastasis of breast cancer to the colon is rare. It is often multifocal. Most cases have occurred years after treatment for the breast carcinoma.

Umbilical metastasis (Sister Mary Joseph's nodule) is also rare. It is encountered in 1-3% of patients with intra-abdominal and/or pelvic malignancy. It is a sign of advanced malignancy with an associated poor prognosis. The primary site of metastatic carcinoma cannot be revealed in some cases. Immunohistochemistry can help in identifying the primary site. In normal tissue, CK-7 is expressed in simple epithelia of breast, lungs, female genital tract, urinary bladder, however has limited expression in gastric and intestinal mucosa; CK-20 is a major cellular protein of intestinal mucosa, urothelium and Merkel cells. Adding specific markers to these epithelial markers enable a more definite diagnosis to be made. This case was positive for CK7 and negative for CK20. CK 20 is almost invariably present in gastrointestinal tumours but absent in breast carcinomas. ER and PR were also positive further indicating breast primary. This case represents a rare metastatic site of breast carcinoma and illustrates the important role of immunohistochemistry in identifying the primary site.

## ONC 14

### Pulmonary adenoid cystic carcinoma - a case report

**S. Montefort<sup>1</sup>, S. Brincat<sup>2</sup>, S. De Giovanni<sup>3</sup>, J. Micallef<sup>4</sup>**

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**Aims:** Case report

**Methods:** Not applicable

**Results:** Adenoid cystic carcinoma (ACC) is a rare salivary gland type malignant tumour occurring infrequently in organs other than the salivary glands including breast, lung and skin. It is responsible for 0.2% of all lung tumours. In this case summary, we describe a case of a 34 year old gentleman who presented with a long history of a persistent dry cough. On investigation, the patient was found to have a pulmonary tumour, for which he subsequently underwent surgery and radiotherapy. Histological examination revealed an adenoid cystic carcinoma of the lung. A review of literature on Adenoid cystic carcinoma will follow the case summary.

**Conclusions:** Pulmonary adenoid cystic carcinoma is a rare tumour which may cause difficulty to diagnose. At this time, treatment modalities include surgery and radiotherapy. Despite treatment, recurrence may occur even at a late stage.

## ONC 15

### Colorectal cancer incidence and mortality in a small island community

**P. Muscat<sup>1</sup>, M. Attard<sup>2</sup>**

<sup>1</sup> Gozo General Hospital, Gozo, <sup>2</sup> Gozo General Hospital, Gozo

**Aims:** The aim of the study is to assess the trend of colorectal cancer incidence and mortality in Gozo over a ten year period 1997 - 2006, and to identify whether a screening programme should be introduced.

**Methods:** A ten year retrospective study of incidence and mortality rates of patients residing in Gozo and suffering from colorectal cancer, 1997 - 2006. The incidence and mortality rates separately for males and females were compared with other selected European countries.

**Results:** Both incidence and mortality rates of colorectal cancer of patients residing in Gozo are lower than most other European countries.

However there is a trend in both incidence and mortality rates which seem to be on the increase. This may in part be explained by the changing social patterns and dietary habits.

**Conclusions:** In view of the above it is recommended that only high risk patients within the target population should be selected by general practitioners during their practice or the Medical register at the Out-patients' department of the local Gozo General Hospital and offered screening which should include a recall system. This should include a yearly FOBT and three-yearly colonoscopy.

A health education and promotion campaign should be introduced to promote (colorectal) cancer awareness in general.

## NEP 1

### Conversion from calcineurin-based to TOR-based immunosuppression in a series of Maltese patients with renal transplantation

**L. Buhagiar<sup>1</sup>, K. Briffa<sup>2</sup>**

<sup>1</sup> Department of Medicine, Mater Dei Hospital, Malta, <sup>2</sup> Pharmacist, Wyeth laboratories, Malta

**Aims:** Chronic allograft nephropathy (CAN) is a common complication of renal allografts in patients on calcineurin-based immunosuppression. It can occur in kidney transplants which had previously functioned well, and are related to calcineurin-based immunosuppression. Since a number of years we have attempted to convert a number of patients to a TOR-based agent such as rapamycin. We did this for two different reasons. Initially patients with established CAN and deteriorating function were converted and lately, increasingly, more patients are being converted during the first six months of renal transplantation, when renal function is normal, in an attempt to prevent the development of CAN. The aim of this study was to determine clinical outcome in both instances.

**Methods:** Over the past six years renal transplant patients with deteriorating renal function were assessed with a view to determining the cause of the allograft dysfunction. Some patients who were thought to have CAN were converted on to rapamycin in a step-wise fashion, guided by serial serum sirolimus and cyclosporine levels. Most were converted over a two month period. Recently,



patients who have been recently transplanted and whose allograft functioned well are being converted to rapamycin starting within six months following the transplant.

**Results:** Results show that the attempt to convert patients to rapamycin when CAN is already established are not encouraging, whilst patients and allografts did better when conversion was undertaken earlier before the development of CAN. These results are in accordance with similar experiences elsewhere.

**Conclusions:** Chronic allograft nephropathy is an indolent pathological process that causes renal allografts to degenerate over a number of years, and is in most cases irreversible. Early conversion from calcineurin-based immunosuppression to a TOR-based agent (rapamycin) is an effective way to prevent CAN. It is unlikely to help if conversion is undertaken later when the process is already established. NB, KB is a pharmacist that works with Wyeth and promotes the use of Sirolimus in renal transplantation.

**Conclusions:** The role of potassium balance is crucial, particularly in cardiovascular and renal disease states. Although clinicians may be aware of this, results of this study indicate that despite the availability of guidelines there still seems to be a lot of uncertainty on how this should be managed. The fact that guidelines are easily accessible both as a hard copy in wards and also online does not necessarily mean that they will be used. Increased awareness regarding the availability and use of guidelines is necessary. Continuing education sessions could contribute towards improving adherence to these guidelines.

## NEP 2

### Adherence to hypo-/hyperkalaemia management guidelines on medical wards

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**Aims:** Guidelines for the management of hyper- and hypokalaemia have been developed by the Clinical Practice Guideline Committee of Mater Dei Hospital/ St Luke's Hospital in 2005 to facilitate and harmonise the management of potassium imbalance in patients admitted to hospital. The aim of this research was to assess adherence to the recommendations set in the aforementioned references.

**Methods:** This was a retrospective study where data pertaining to patients admitted under three medical consultants during the previous 3 months were reviewed. Data regarding potassium levels was obtained using iSoft Clinical Manager. Additional patient demographic data and information regarding action taken when potassium was not within range was obtained from the patients' clinical notes.

**Results:** The total number of admissions under the three medical consultants for the three-month period was of 403 patients. Among the patients who were reviewed there were 39 patients who had hyperkalaemia during their admission and 25 patients with hypokalaemia. In 53% of occasions the action taken in response to potassium imbalance corresponded to guideline recommendations. Electrolytes were repeated as per guidelines in 51.3% of patients whereas ECGs were taken in 77.3% of patients when recommended. Documentation of actions taken in the clinical notes was observed in 38.4% of all patients admitted with potassium imbalance.

**Conclusions:** The role of potassium balance is crucial, particularly in cardiovascular and renal disease states. Although clinicians may be aware of this, results of this study indicate that despite the availability of guidelines there still seems to be a lot of uncertainty on how this should be managed. The fact that guidelines are easily accessible both as a hard copy in wards and also online does not necessarily mean that they will be used. Increased awareness regarding the availability and use of guidelines is necessary. Continuing education sessions could contribute towards improving adherence to these guidelines.

## NEP 3

### Development and implementation of a protocol for anaemia management in Maltese chronic kidney disease patients

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**Aims:** Erythropoietin (EPO) has revolutionised the management of anaemia of renal failure, long since a major cause of morbidity and mortality in dialysis patients. In Malta, the need was felt to create a protocol with simple algorithms that could easily be used by nurses, and that would maximise the cost-effectiveness of the drug.

To investigate the impact of a protocol developed and implemented by a team led by a clinical pharmacist for anaemia management of adult haemodialysis (HD) and continuous ambulatory peritoneal dialysis (CAPD) patients.

**Methods:** An anaemia management protocol, regarding the subcutaneous use of EPO beta (NeoRecormon®), for both HD and CAPD patients was developed and implemented. After two months of usual care (Retrospective period), a 4 month of EPO use followed (Protocol and Prospective period). The clinical dialysis files of 84 patients included in the study were reviewed to collect demographic, and outcome measures data: haemoglobin (Hgb) level, total number of units of EPO used, total number of units of blood transfused, dose of intravenous/oral iron used, serum ferritin level, number of hospital admissions, number of adverse events due to EPO, number of EPO dose changes and cost of EPO.

**Results:** There was a statistically significant difference between the total mean Hgb levels recorded during the retrospective and the prospective phase of the study in the HD patient group (11.4 g/dl and 12.2 g/dl respectively;  $p=0.0002$ ), but not in the CAPD group (12.6 g/dl and 12.3 g/dl respectively;  $p=0.34$ ). For both the HD and CAPD patients the total cost of EPO was increased in the prospective period vs. the retrospective period.

**Conclusions:** The protocol led to a positive impact, especially within the HD patient pool, and an inevitable increase in costs associated with improved efforts at attaining the latest recommended target Hgb range of 11.0-13.0 g/dl.

## NEP 4

### Impact of a protocol developed and implemented by a team led by a clinical pharmacist for anaemia management of chronic kidney disease patients

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<sup>1</sup> Department of Pharmacy, Mater Dei Hospital, Malta, <sup>2</sup> Department of Medicine, Mater Dei Hospital, Malta, <sup>3</sup> The Robert Gordon University, Aberdeen, UK

**Aims:** To investigate the impact of a protocol developed and implemented by a team led

by a clinical pharmacist for anaemia management of adult haemodialysis (HD) and continuous ambulatory peritoneal dialysis (CAPD) patients

**Methods:** An anaemia management protocol, regarding the subcutaneous use of epoetin beta (NeoRecormon) for both HD and CAPD patients was developed and implemented among the dialysis nurses at the Renal Unit following several meetings and information sessions. The clinical dialysis files of the patients included in the two-month protocol period were reviewed by the principal investigator, to collect the demographic data, retrospective and prospective data of the following outcome measures: haemoglobin (Hgb) level, total number of units of erythropoiesis stimulating agent (ESA) used, total number of units of blood transfused, dose of intravenous/peri-oral iron used, serum ferritin concentration level, number of hospital admissions, number of adverse events due to ESA, number of ESA dose changes and cost of ESA.

**Results:** The total study population included 84 subjects; of which 54 belong to the HD group and 30 to the CAPD group. There was a statistically significant difference between the total mean Hgb levels recorded during the retrospective and prospective phase of the study in the HD patient group (11.4 g/dl and 12.2 g/dl, respectively;  $p=0.0002$ ), but not in the CAPD group (12.6 g/dl and 12.3 g/dl, respectively;  $p=0.34$ ). The proportion of HD patient achieving a Hgb level within the target range, was higher during the prospective period than during the retrospective part of the study (61% vs. 56%, respectively), unlike in the CAPD patients (63% vs. 40%, respectively). For both the HD and CAPD patients the total cost of NeoRecormon was increased in the prospective period vs. the retrospective period (Euro 29405 vs. euro 18330 and euro 9329 vs. 7183, respectively). Possible adverse events due to ESA occurred in both the HD and CAPD patients only during the prospective part of the study ( $p=0.01$  and  $p=0.16$ , respectively).

**Conclusions:** The protocol developed and implemented by a team led by a clinical pharmacist for anaemia management of adult HD and CAPD patients led to a positive impact, especially within the HD patient pool, and an inevitable increase in costs associated with improved efforts at attaining the latest recommended target Hgb range of 11.0-13.0 g/dl.

## NEP 5

### Analysis and outcome of 53 consecutive insertions of central venous access catheters for haemodialysis

L. Buhagiar

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**Aims:** The procedure of central venous access catheter (CVAC) insertion for haemodialysis has been carried out in Malta for twenty seven years. . No study has ever been carried out to study

the logistics of this procedure in the Maltese setting. It is aimed to follow up a cohort of these catheter insertions and to see whether the procedure is abused. One will aim to make recommendations after studying the rate of complication, duration of the implantation, and outcome of each insertion. It is also intended to compare outcomes according to the site of insertion, locality of the operation, and the specialty of the operator.

**Methods:** Since the 23rd September 2008 data has been collected on each successive insertion of CVAC for any session of haemodialysis that was needed. All demographic data was collected on each insertion including its indication, date, intended eventual form of RRT, date and reason for removal and any arising complication. In addition any factors thought to be conducive to complications was noted, together with the anatomical site of insertion, theatre of operation, the specialty of the operator and total duration of the implantation. This study is ongoing and the results to date will be presented.

**Results:** Since September 2008 fifty-three consecutive insertions of central venous access catheters (CVAC) have been inserted in thirty different patients requiring immediate haemodialysis. The indication for insertion varies from acute renal failure to temporary haemodialysis awaiting undetermined forms of RRT. Many catheters had to be removed because of local or systemic infections. Others were removed because of poor flow characteristics or when found accidentally dislodged. Three types of specialists are involved in CVAC insertions, nephrologists, anaesthesiologists and intensivists.

**Conclusions:** A CVAC insertion is a procedure that can provide patients access to life-saving haemodialysis. On the other hand it can be associated with fatal complications and can jeopardise future vascular access. The way vascular access is provided to these patients may need to be reformed.

## NEP 6

### The effect of CT angiography on renal function

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Medical Imaging Department, Mater Dei Hospital, Malta

**Aims:** CT angiography requires the administration of a rapid bolus of intravenous contrast. This is known to have an adverse effect on renal function, especially when pre existing renal compromise is present. To assess the adverse effect of iodinated contrast given locally for CTA.

**Methods:** The serum Creatinine was taken as a representative of renal function. A total of 267 patients had a CTA during 2008. 170 clinical notes (64%) were carefully seen, and the creatinine values post- CTA were recorded. For levels the normal range, a pre-contrast value, and where possible follow up Creatinine values were also recorded. This was done in order to see if any episodes of acute renal failure were (1)transient or permanent, and (2) whether this failure was associated with the administration of contrast.

**Results:** 129 patients (76%) had a post CTA Creatinine taken. Of these, 26 patients (20%) were found to have a high Post CTA creatinine level. 24 patients out of these, had already a higher than normal level previous to the examination. Thus only 2 patients who previously had a normal Creatinine level, had a rise in their Creatinine level post examination. In both cases, the Creatinine levels returned to normal, and thus were only transient phenomena.

**Conclusions:** CT angiography was shown not only to be an excellent diagnostic tool, but also to be a safe practice. The fact that this was a retrospective study, probably explains the reduced complication rate compared to international literature.

## NEP 7

### Management of hypertension in dialysis patients

*Lilian M. Azzopardi, Maurice Zarb-Adami, Anthony Serracino-Inglott, Alison Ferriggi*  
*Department of Pharmacy, University of Malta*

**Aims:** The aims were to determine the prevalence of hypertension, adequacy of blood pressure control and compliance with antihypertensive treatment, and to assess quality of life of dialysis patients receiving treatment at the Renal Unit at St Luke's Hospital, Malta.

**Methods:** One hundred dialysis patients (60 patients receiving haemodialysis, 40 patients receiving continuous ambulatory peritoneal dialysis, CAPD) participated in the study. Dialysis patients were classified as suffering from hypertension if their systolic or diastolic blood pressure was >140mmHg or >90 mmHg or if they were on antihypertensive medications. Patients were asked to complete a disease-specific questionnaire, the KDQOL-SF questionnaire and a generic questionnaire, SF-36. Compliance with the antihypertensive treatment was evaluated using a structured questionnaire. A 24-hour ambulatory blood pressure monitoring was adopted for 25 of these patients. Statistical analysis was carried out using the Chi-squared test and the unpaired t-test.

**Results:** The mean age of dialysis patients was 60 years for males and 58 years for the females (age range 12-82 years). The common causes of chronic renal failure were: chronic glomerulonephritis (31%), diabetic nephropathy (21%) and hypertension (19%). The prevalence of hypertension in dialysis patients was estimated to be 47%. The most commonly used antihypertensive medications were the calcium channel blockers (35%), angiotensin-converting enzyme inhibitors (16%) and beta-adrenoceptor blockers (16%). Hypertensive patients receiving CAPD had a higher mean weight at 71.2 Kg compared to normotensive CAPD patients ( $p=0.019$ ). Of the 47 patients receiving antihypertensive medications, 16 (34%) showed full compliance while 31 (66%) stated that they do miss doses (from once daily to rarely). Ambulatory blood pressure monitoring for hypertensive dialysis patients showed that out of 25 patients, 3 (12%) had uncontrolled blood pressure. CAPD patients had a significantly better quality of life than haemodialysis patients ( $p<0.05$ ).

**Conclusions:** About half of the dialysis population were suffering from hypertension. However blood pressure was adequately controlled in the majority of patients. Pharmacist interventions should emphasise patient compliance with antihypertensive medications.

## NEP 8

### The History of Bladder Catheterisation

*S. Bugeja, A. Mercieca, P. Zammit, K. German*  
*Urology Unit, Mater Dei Hospital, Malta*

**Aims:** There is no doubt that the catheter is the most valuable single instrument in the urologist's armamentarium. The term 'catheter' is derived from the Greek term meaning 'to let down into' or 'send down'. The use of a tubular structure to empty the painful overfilled bladder and for cases of bladder calculi and urethral inflammation can be traced back to the Greco-Roman era. The aim of this poster is to explore the history of bladder catheterisation and the evolution of the urethral catheter through the ages.

**Methods:** A literature search using the terms 'history of bladder/urethral catheterisation' and 'history of urethral/urinary catheters' was performed. Relevant articles were analysed to create a timeline depicting the landmark events in catheter evolution. Developments in materials used, as well as the variety of coatings and lubricants are described. The changes in catheter shape, the transitions from rigid to flexible, straight to curved and eventually to self-retaining instruments, are presented.

**Results:** Materials used to produce the tubular structure of the catheter range from various plants (e.g. reeds, straws, palm leaves) to materials such as wood, silver, gold, copper, brass, and lead. Coatings/lubricants included ghee, soft cheese and linseed oil. Early catheters were rigid and straight, later evolving into malleable and curved instruments to help negotiate the anatomy of the male urethra. Flexible catheters followed the invention of rubber and vulcanisation in the 19th century. Originally indwelling catheters were taped or tied to the external genitalia. The first self-retaining inflatable balloon catheter was designed by Reybard in around 1850. This was the prototype of the Foley catheter still in use today. More recent developments in catheter design have focused on materials and coatings to reduce friction and trauma during insertion (e.g. hydrophilic coating) and to reduce bacterial colonisation (e.g. silver ions, hydrogels).

**Conclusions:** The urethral catheter as we know it today has come a long way from the days when bladder drainage was accomplished via onion leaves more than two thousand years ago. Its history is as rich as the multitude of cultures which have contributed to its evolution over the ages.

## NEP 9

### Audit of 92 cases of stones treated by extracorporeal shockwave lithotripsy at Mater Dei Hospital

*I. Handjiev, S. Bugeja, A. Cordina, P. Demicoli, K. German, S. Mattocks, A. Mercieca, J. Sciberras, P. Zammit*  
*Department of Urology Mater Dei Hospital, Malta, Department of Radiology Mater Dei Hospital, Malta*

**Aims:** After the migration to Mater Dei in November 2007 we have started to treat some of our stone patients with ESWL using the new Dornier Compact Sigma Lithotripter. Although the technology is not new this is the first time we are also using ultrasound localisation for non radio opaque stones. In this poster we are presenting the results of the first 92 patients treated in our department, including 82 kidney and 10 ureteric stones.

**Methods:** We have used JJ ureteric stents in 18 cases due to high stone burden or obstructive or infective complications.

**Results:** Reviewing the post treatment X-Rays reveal 90% (83 cases) success in stone fragmentation. Measurement of success is defined by the following parameters as laid out by the European Urology guidelines, stone free rate-59 cases (64%) and satisfactory disintegration-24 cases (26%).

We have used ultrasound guidance in 42 cases-46%, X-Ray in 33 cases(36%) and combined control in 17 cases (18%).

**Conclusions:** Our analysis shows that ESWL is safe and highly effective treatment modality for urinary stones, dependent on multiple factors: location of stone, total stone burden, composition and hardness of stone, anatomic and operator-dependent.

## NEP 10

### Anticoagulants and antiplatelet treatment in urological surgery: a review and recommendations

*A.J. Mercieca, S. Bugeja, P.A. Zammit, German K*  
*Urology Unit, Department of Surgery, Mater Dei Hospital Malta*

**Aims:** To establish multidisciplinary guidelines on the peroperative management of patients on antiplatelet and anticoagulant medication in Urological surgery.

**Methods:** Online databases were searched using various strategies to identify relevant published literature. These publications were then systematically analysed for specific keywords and together with existing international guidelines on related topics, recommendations were formulated.

**Results:** Despite the fact that antiplatelet and anticoagulant medications are the commonest class of drugs used world wide there remains a wide array of recommendations as to how best manage the urological peroperative period of patients on such drugs. This leads to variability of care of patients in need of surgery and potentially at high risk of thromboembolic events. It is very difficult to produce didactic guidelines that can be applied to all patients. The recommendations proposed are stratified on the bleeding risk of the urologic surgical procedure and the thromboembolic risk of the patient.

**Conclusions:** In patients on anticoagulants with low risk of thromboembolic events undergoing surgical procedures with low risk of bleeding; an INR at the low end of the therapeutic range is accepted. Patients undergoing the same category of urological procedures on antiplatelets are advised to stop their antiplatelet medication ten days before the surgery. In patients with high risk of thromboembolic events such as in patients with a mechanical heart valve, a drug eluting stent deployed in the last year or a pulmonary embolism in the last six months; bridging therapy with low molecular weight heparin is indicated for those patients on oral anticoagulants. For those on antiplatelet medication who are in the high thromboembolic event risk category it is contraindicated to stop the antiplatelet medication.

## NEP 11

### 'Xpakkapjetra'; phytotherapy of urolithiasis in Maltese Culture and History

*A.J. Mercieca, P. Zammit, S. Bugeja, K. German*  
*Urology Unit, Department of Surgery, Mater Dei Hospital, Malta*

**Aims:** Urolithiasis is a common pathology in Malta, accounting to more than six hundred admissions to hospital every year. More are treated in the community by primary health care physicians and a substantial number resort to folk medicine as an ailment

to their stone burden. Phytotherapy of urolithiasis in Malta using 'Xpakkapjetra' (*Micromeria microphylla*, Eng. Small-leaved micromeria) is still commonly used by all strata of society with varying results. The aim of this presentation is to look at the history of such a plant in Maltese folk medicine.

**Methods:** Literature search and interview with a Maltese writer on natural history and folklore

**Results:** The earliest reference of 'xpakkapjetra' being used in the management of nephrolithiasis in Malta is a listing by Prof John Borg dated 1927 [J. Borg: Descriptive Flora of the Maltese Islands including the Ferns and Flowering Plants. Government Printing Office, Malta, 1927, p.491]. Naming the plant *Satureja microphylla*, Prof Borg starts with a description ending by saying that it is found in 'Malta, Gozo, Comino and Cominotto, very common on rocky and waste lands and along country roads. Sometimes it is used as a diuretic in gravel and disease of the bladder, under the name of 'spaccapietra' or 'saghtrija'. The plant seems to be attributed with diuretic properties.' The term 'Xpakkapjetra' is commonly used for various plant species found growing in rock crevices; hence thought that their roots do in fact break down the rock formation they thrive in. This supposition was extrapolated to give these plants medicinal properties thought to break down renal calculi. The plant leaves are usually dried and boiled and then drunk after letting it cool. No consensus is reached as to how to boil the solution; most people though boil it as an infusion.

**Conclusions:** No evidence was ever found to attribute chemolytic properties to Xpakkapjetra; although it does have some diuretic properties which though may not explain the alleged therapeutic value of such a plant.

## RES 1

### Pulmonary rehabilitation: current recommendations and plans

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**Aims:** Pulmonary rehabilitation (PR) is a widely accepted therapeutic tool used to improve quality of life and functional capacity of individuals with chronic lung disease (Ries et al 2007, Troosters 2005). Sufficient evidence to support the use of PR for a subset of patients is available to indicate that PR can improve exercise tolerance and symptoms of dyspnea, as well as enhance health-related quality of life Roceto et al 2007; Hui & Hewitt 2003). Despite the increasing propagation of the efficacy of pulmonary rehabilitation, there is no definitive proposal for the best training strategy (Ries et al 2007; Hill 2006; Troosters et al 2005), with no consensus of opinion regarding the optimal duration of the pulmonary rehabilitation intervention. Significant gains in exercise tolerance, dyspnoea, and HRQOL have been observed following inpatient pulmonary rehabilitation programme (Votto et al 1996). A review of the current pulmonary rehabilitation programme strategies is being looked into, in order to help implement a pulmonary rehabilitation programme in Malta addressed for COPD and non COPD patients both during the acute and chronic phase.

**Methods:** Through this review, one plans to develop a rehabilitation programme offered at the physiotherapy department. Through this pilot service one will look at the relationship between the different variables being acute versus chronic care, length of treatment and asthma versus COPD.

**Results:** Not available yet

**Conclusions:** Through this study one aims to look further in three areas which are still inconclusive in this area of rehabilitation. The optimal length of the pulmonary rehabilitation programme will be assessed together with assessment of the treatment effects, with rehabilitation in the acute versus the chronic phase. One will also be able to compare whether all respiratory conditions can obtain the maximum effect out of one rehabilitation programme fit for all despite the underlying condition.

## RES 2

### Has the prevalence of allergic conditions in 13- 15 yr old Maltese children reached a plateau? [Isaac]

*S. Montefort, P. Ellul, M. Montefort, S. Caruana, H. Agius Muscat*

*Department of Medicine, Mater Dei Hospital*

**Aims:** To investigate whether there was a change in prevalence and severity of wheezing, rhinitis and eczema in Maltese 13 - 15 yr old schoolchildren between 1995 and 2002 using the standardised International Study of Asthma and other Allergic conditions in Childhood [ISAAC] methodology.

**Methods:** Standardised written questionnaires [ISAAC] were utilised in both phases of the study [Phase 1 in 1995 and Phase 3 in 2002]. Analysis of comparison of results of the 2 phases were compared.

**Results:** In this paper we compare the data obtained from 4184 13 – 15 yr olds [88.7% response rate] in Phase 1 to that of Phase 3 when 4139 [90% response rate] children participated. The cumulative [27.9% vs. 27.4%; p=0.6] and current [16% vs. 14.6%; p=0.08] prevalence rates of wheezing remained quite static but wheezers were more likely to be diagnosed with asthma in 2002 [11.1% vs. 14.1% p<0.0001]. Along the 7 years these asthmatics were better controlled with less wheezing attacks [p<0.01], less disturbed nights [p<0.05] and less acute severe episodes [p<0.05]. Nasal problems were present in 52.7% of participants in 1995 and in 50.4% in 2002 [p<0.05] and 47.4% vs. 42.8% [p<0.0001] persisted with these symptoms and associated itchy eyes [29% vs. 21.8%; p<0.00001]. Though prevalence decreased the children were labelled as hay fever sufferers more often [32.3 vs. 40.7%; p<0.00001]. Rhinitis symptoms seemed to interfere less with daily activities [p<0.01]. In 2002 an itchy rash suggestive of eczema was also less present 'ever' [12.8% vs. 11.2%: p<0.05] or currently [10.1% vs. 8.5%: p<0.05], but again more likely to be diagnosed as eczema [p<0.001]. This rash caused less sleepless nights in phase 3 of the study [p<0.05].

**Conclusions:** These results indicate that asthma prevalence has reached a plateau between 1995 and 2002 while rhinitis and eczema are less common. All these allergic conditions are better controlled and more likely to be diagnosed in these schoolchildren by Maltese doctors in 2002 than in 1995.

## RES 3

### Pulmonary fibrosis in Malta – the current situation

*Dr C. Gouder, Dr M. Fenech, Prof S. Montefort*

*Department of Medicine, Mater Dei Hospital, Malta*

**Aims:** To establish the prevalence, management and response to treatment of pulmonary fibrosis in Malta.

**Methods:** The medical records of 100 living and 40 deceased patients suffering from pulmonary fibrosis, who were under the care of respiratory physicians, were reviewed. Data collected included sex of the patient, dwelling, occupation, animal exposure, smoking history, co-morbidities, drug history for co-morbidities and for pulmonary fibrosis, symptoms and signs at presentation, and the investigations that led to diagnosis. Their management was assessed and response to treatment analysed from the trend in symptomatology and investigations. Risk factors of morbidity were also analysed.

**Results:** Pending.

**Conclusions:** Will be available once the results are ready.

## RES 4

### An audit cycle on the safety of intercostal drain insertions for pleural effusions

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*Department of Respiratory Medicine, West Suffolk Hospital, BSE, United Kingdom*

**Aims:** Intercostal Drain insertion is a high risk procedure. The British Thoracic Society produced guidelines on this, back in 2003. The National Patient Safety Agency produced the Rapid Response Report in May 2008 warning of the risks associated with intercostal drain insertion. Over the course of 3 years; 12 deaths & 15 cases of serious harm were reported. The aim of this audit is to implement change in the current practice of intercostal drain insertions with the aim of increasing the safety of such a high risk procedure & reduce complication rates.

**Methods:** An initial retrospective audit of 23 cases (Oct 07-Mar 08) of intercostal drain insertion for pleural effusions, was carried out in West Suffolk Hospital. Subsequent intervention involved 1) Identification of a lead physician, 2) Delivery of 2 training lectures with a practical demonstration to junior doctors, and 3) Trust guidelines were made available on the hospital intranet. A further retrospective audit of 38 cases was thereafter performed (Sep 08-Mar 09). In each audit, patients notes were reviewed and data extracted. Results from both audits were then compared.

**Results:** On comparison, 7.5% more drains were inserted by trained, competent staff in the second audit. Consent also improved by 44% overall. However, the use of ultrasound guidance declined in the second audit by 22% and 16% more drains were inserted out of normal working hours. In spite of this, complication rates did not vary in between audits.

**Conclusions:** The intervention in between audits, was not successful in all aspects. Lack of documentation persisted. The changes that need to be implemented include:

1. Extensive documentation of invasive procedures - introduction of trust-notes sticker;
2. Invasive procedures should be performed by experienced staff or else under supervision;
3. Ultra-sound guidance is highly recommended or else triangle of safety should be used;

4. Local policy guideline should be distributed on induction day to all junior doctors; and
5. Training-lectures should be carried out at the beginning of doctors' attachment, not prior to rotation. Further auditing, after implementation of the above, is needed

## RES 5

### Sarcoidosis. Heterogeneity of Presentation.

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**Aims:** Sarcoidosis is a relatively uncommon multisystemic inflammatory disease characterised by the presence of epithelioid non-caseating granulomas in involved organs. 90% have some form of pulmonary involvement and in fact the majority of patients present with either incidental radiographic abnormalities on chest X-ray or various respiratory symptoms. We describe 4 patients with uncommon modes of presentation, in whom the diagnosis was confirmed by tissue biopsy.

**Methods:** N/A

**Results:** Presentations included such diverse diagnostic problems as fever of unknown origin, bilateral salivary gland enlargement, widespread dermal lumps and arthritis.

**Conclusions:** The diagnostic work up and rationale of management is described and literature is reviewed.

## RES 6

### Correlation between cleaning of spacer devices and the level of bacterial contamination

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**Aims:** Spacers are used with metered-dose inhalers and should be cleaned regularly to prevent bacterial contamination. The aims of this study were:

- To assess bacterial contamination of spacers and any correlation between cleaning and the level of contamination with bacteria
- To assess the method of cleaning of spacer devices

**Methods:**

**Study 1:** Spacers submitted for the study were taken from patients admitted under the care of a Respiratory Physician and a prescription for a new spacer was given to the patients. A transport medium charcoal for the collection and transportation of laboratory specimens was used to swab the spacers. This charcoal swab is used for aerobes and anaerobes. The tip of the applicator was placed in sterile 0.9% sodium chloride and then the tip was placed between the inner walls of the spacer. The walls were then swabbed in a circular movement for five times and the inner mouthpiece was swabbed with the same tip for another five times. The swab was then transmitted to the laboratory straight away for testing.

**Study 2:** A structured interview was carried out amongst patients admitted under the care of a Respiratory Consultant over a period of six months.

## Results:

### Study 1: Spacer Swab

Fourteen spacers were swabbed to analyze for any contamination. Nine spacers did not grow any significant bacterial growth. The other spacers were contaminated by different bacteria or fungi, none of which were considered to be pathogenic.

### Study 2: Patient Interview

Sixty-five patients were included in this study. Out of these 37 patients had a spacer, which makes a total of 57% of the patients, whilst the others never had a spacer. Most patients (73%) had their current spacer for 1-10 years. A total of 35% cleaned their spacer less than once a month. The preferred method of cleaning was by using soap and water. The majority of patients (51%) declared that they were never instructed on how to clean their spacer.

**Conclusions:** There appears to be a lack of awareness regarding the cleaning of spacers. This is possibly due to the lack of healthcare professionals appropriately advising patients on this matter.

## NEU 1

### The shaking palsy: living with parkinson's disease

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**Aims:** It is difficult to totally comprehend what it means to live with Parkinson's disease (PD) unless one experiences it. The aim of this dissertation is to explore the PD experience of five Maltese, female patients by focusing specifically on the diseases' psychological effects and how patients adjust and cope with it. These issues are important given that PD has a multifaceted effect on patients' biological, psychological and social lives.

**Methods:** Interpretative phenomenological analysis was used as a qualitative research approach to explore the PD patients' experience as authentically as possible. Through semi-structured interviews I captured the meaning of the patients' life by perceiving the PD phenomenon from their perspective. The five female participants were diagnosed as being in stage 3 of idiopathic PD, which represents the 'moderate disease' as patients can still function independently. Their ages range from 65 to 80 years and they live at home alone or with their spouse.

**Results:** The results demonstrate that PD is much more than the slow physical deterioration it seems to be physically. The emergent themes and sub-themes demonstrate that the women are psychologically affected by PD as they experience loss of freedom and control in their life, dependence on others, sadness, loneliness, fear and being misunderstood. With no available PD cure they tend to constantly lose battle against their body. Their only option is to accept PD and thus cope with their life through behavioural, cognitive, and emotional methods and by seeking social support from significant others.

**Conclusions:** PD causes irreversible life changes on patients' daily functioning, psychological well-being and social life. These findings may help to increase public awareness and understanding about this population and guide professionals to develop appropriate interventions to meet their patients' specific needs. Addressing the psychological effects of PD is important to allow patients to develop

the strength to accept and adjust to their new reality. Efficient coping strategies, combined with a sense of hope and self-confidence may allow them to overcome daily obstacles and build a satisfactory and somewhat independent life.

## NEU 2

### Blood pressure control post CVA in patients at KGH and ZCH

*P. Zammit, R. Agius, M. Psaila*

*Zammit Clapp Hospital, St Julians, Malta*

**Aims:** To verify if elderly patients post CVA had their blood pressure under control at ZCH and KGH.

**Methods:** All patients with past history of CVA at KGH and ZCH had their blood pressure checked by one of the authors. Additional information and medications were assessed by checking the medical records.

**Results:** In the audit there were 25.5% with poorly controlled BP so this is better than in the studies mentioned. Mean BP was better when compared with a study in Ireland and compares well with one done in Australia. For diabetics who have a tighter control 21.4% had BP off target. It also shows that control is well within targets for the UK as only 11.7% had BP >150/90 (target 30% or lower).

**Conclusions:** BP is one of the main risk factors in stroke and so it is important to control this. Compared with other countries the department has a better control of BP in this cohort.

## NEU 3

### Combining sensory modalities within a sensory sum score: are we picking up good vibrations?

*A.A. Pace<sup>1</sup>, R.A.C. Hughes<sup>2</sup>, I.N. Van Schaik<sup>3</sup>, J.C. Hobart<sup>1</sup>*

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**Aims:** The Inflammatory Neuropathy Cause and Treatment (INCAT) sensory scale aims to measure overall sensation. It is based on the hypothesis that loss in three sensory modalities (vibration; pinprick sense; two-point discrimination) can be graded in all limbs, and the scores combined into an index of sensory deficit. This hypothesis was further developed in the Randomised trial of Methotrexate in CIDP (RMC) study, in which light touch and joint position replaced two-point discrimination. In this study we test the hypothesis that the 4 sensory modalities graded in the RMC study can be combined meaningfully to measure overall sensory deficit. We also investigate the extent to which linear (equal-interval) measurements can be constructed from ordinal (unequal-interval) INCAT scores.

**Methods:** Data from 60 people across 4 time-points were amalgamated for analysis (n=238). In all limbs, 4 sensory modalities were each scored in 5 graded categories (sumscore range 0-64). We used Rasch analysis, a sophisticated method of psychometric analysis that empirically tests the extent to which the modified INCAT scale works successfully as a measurement ruler.

**Results:** Items locations mapped a measurable continuum of body sensation (range -1.535 to +2.284 logits). Item fit statistics

indicated items worked together to define a single variable. However 11/16 items had disordered response thresholds, suggesting scoring categories frequently did not work as intended. Most people (95%; 192/202) manifested patterns of sensory deficit that fit Rasch-derived predictions. The range of sensation measured by the scale was mis-targeted to that within the sample, with notable ceiling effects (25% - 89%) in all items. The person separation index was 0.93, suggesting high reliability. There was evidence of scoring bias between items.

**Conclusions:** There was evidence to support the practice of combining grades of different sensory modalities into a single meaningful index of sensory deficit in CIDP. Rasch analysis indicated that linear measures can be estimated from INCAT data. Whilst results delivered some promising vibrations for sensory measurement, there were also limitations that need to be addressed before this sensory scale is considered a suitable outcome measure for state-of-the-art clinical trials.

## NEU 4

### Do summed muscle strength scores form a meaningful index of total body strength?

*A.A. Pace, J.P. Zajicek, J.C. Hobart*

*Clinical Neurology Research Group, University of Plymouth, United Kingdom*

**Aims:** The Medical Research Council (MRC) Grading System is a six-category rating scale initially developed to annotate degrees of recovery from paralysis following traumatic nerve injuries. Although used for measuring individual muscles, scores across muscles are often summed into a total score assumed to be indicative of total body strength. This assumption has never been empirically proven. In this study, we investigated this practice during the construction of a scale for measuring muscle strength in multiple sclerosis (MS).

**Methods:** We conceived total body strength as a variable ranging from less to more, representing an aggregate of muscles whose combined scores give a meaningful index of overall strength. Thirty nine muscles representing major body areas were selected. One hundred people with MS and a wide disability range were examined and graded for all muscles. Aggregate scores were analysed for compliance with a number of fundamental measurement criteria using Rasch analysis.

**Results:** Analysis validated our conceptualisation of body strength, confirming that summed scores of individual muscles provide a measure of overall strength. The Rasch model delivered stable, equal-interval measures for the sample. There was a lack of endorsement for the lower grades (0 - 3) in most muscles, despite a high mean sample disability. However there was not enough data from severely disabled people to reach meaningful conclusions outside this cohort. The muscles examined did not discriminate well between the strongest subgroup.

**Conclusions:** Combining muscle strength scores into total strength score is conceptually and clinically appropriate in MS. However, our findings do not provide across-the-board justification for the practice of summing scores. Whether the same holds for different muscles in other diseases must be determined by distinct analysis. Failure to do this undermines the meaningfulness of clinical trial outcomes.

## NEU 5

### Randomised trial of methotrexate in cidp (rmc) study: did the measurement of strength prove to be a weakness?

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**Aims:** The MRC sumscore (MRC-SS) is a method for measuring body strength. It is achieved by summing MRC strength grades from 6 limb muscles examined bilaterally. The RMC study used as an outcome measure a modified MRC-SS version in which two muscles (first dorsal interosseous; hallux dorsiflexor) were added to increase measurement breadth and sensitivity. Changes in total strength across treatment groups at the end of the trial indicated that methotrexate was no better than placebo for controlling CIDP. In this study we evaluate comprehensively the measurement properties of the modified MRC-SS, diagnose any limitations, and consider these in the context of the study outcome.

**Methods:** Data from 60 people across 4 time-points were amalgamated for analysis, giving a dataset of n=238. The 8 pairs of muscles (n=16 "items") were scored on the 6-category MRC grading system (sumscore range 0-80). We selected Rasch analysis to explore several aspects of the scale's psychometric performance including reliability (stability over time, person discrimination, scoring bias), validity (item-level functioning of graded categories, item and person fit statistics and item location distribution), and potential responsiveness (scale-to-sample targeting and floor/ceiling effects).

**Results:** Items mapped a measurable continuum of body strength (location estimates -3.168 to +1.475 logits), and worked together to define a single variable. Patterns of weakness within most sumscores (215/218; 98.6%) agreed with analysis-derived relative item ordering. The person separation index was 0.88, suggesting high reliability. Important limitations were also identified. In all items, the MRC strength grading system did not work appear to as intended. The range of strength measured by the scale was mis-targeted to that within the sample. Item-level ceiling effects were notable (23.9% - 75.6%). There was evidence of scoring bias between items.

**Conclusions:** The MRC-SS did not meet some of the requirements for robust measurement. Although scale reliability appeared good, reliability estimates were over-inflated by item bias. Measurement validity was undermined by problems with the MRC scoring categories and also item bias. The potential to detect individual-person and group differences, and changes in strength within the RMC sample, was compromised by sub-optimal targeting. Could this explain why methotrexate appeared not to work?

## NEU 6

### Overcoming the weaknesses of a rating scale for measuring strength

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**Aims:** We are constructing a clinician-based scale for quantifying overall strength in people with multiple sclerosis. On preliminary analysis, the instrument met basic measurement requirements, but had limitations: poor scale-to-sample targeting; problems distinguishing between people; little data in lower (weaker) scoring categories. In this study we aim to overcome the diagnosed measurement weaknesses in our strength scale.

#### Methods:

- a. Evidence-based modifications
  1. Addition of items to improve measurement precision
  2. Recruitment of severely disabled people to increase data in lower categories
- b. Re-evaluation after changes
  3. Determining the extent to which the modified scale satisfies measurement requirements, using Rasch analysis of a larger dataset (n=235).

**Results:** The modified scale mapped a wide continuum of body strength on which pwMS may be measured. Targeting improved but remained suboptimal. Person discrimination was excellent. The scale had high reliability and validity. There was evidence of bias in rater grading. Raters could not reliably distinguish between the scoring categories in most muscles. Lower categories remained poorly endorsed.

**Conclusions:** Empirical modifications to the strength scale overcame some but not all weaknesses. Results illustrate how scale development, an iterative process of testing, evidence-based modification, and fine-tuning, needs to be guided by a suitable vehicle such as Rasch analysis.

## NEU 7

### Are clinical trials in neurology state-of-the-art? Not when you look closely

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**Aims:** Background: Rating scales are outcome measures used to quantify variables not amenable to conventional measurement. There are controversies surrounding the extent to which scores generated by scales are measurements, based on the conceptual differences underpinning measurement in health and in physical sciences. It is therefore useful to review these differences and explore whether current health measurement is fit for purpose.

**Methods:** Measurement Theories in Health and the Physical Sciences: Physical measurement is based on the principle of ratios. Magnitudes of a variable are compared against a standard quantity or unit. The result of that comparison is then expressed numerically in terms of the unit. Numbers as articulations of a ratio maintain meaning irrespective of the unit, and the quantitative difference between sequential numbers is unchanging. Psychometric measurement does not use units and is based on the principle of relative magnitude rather than ratios. Numbers are assigned by convention so that their natural sequence reflects a rank order for the variable, and are not comparable between scales.



**Results:** Conclusions: Psychometric measurement is easy to achieve. Conceptually, however, its foundations appear weak when compared to physical measurement. Numbers derived from scales are not referenced to a standard quantity. At best, the values they represent are unknown and not equally apart. At worst, the numbers are meaningless. Yet rating scale data is conferred the same quantitative meaning and subjected to the same statistical applications as data from physical measurement.

**Conclusions:** Implications: Health measurement is a cornerstone of research and clinical practice. Inferences on therapeutic efficacy are based on the assumption that rating scales deliver scientifically rigorous and clinically meaningful measurement. Our comparison with fundamental physical measurement indicates this may not be the case, highlighting the importance of constructing outcome measures on an established, conceptually sound theory of measurement.

## NEU 8

### Lessons from the cannabinoids in multiple sclerosis study. Part 1: Did Ashworth's scale make the grade?

*A.A. Pace, J.P. Zajicek, J.C. Hobart*

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**Aims:** CAMS concluded that cannabinoids do not reduce muscle spasticity in people with MS. This finding contradicts substantial anecdotal clinical evidence and animal studies. We explored this discrepancy by examining CAMS' primary outcome measure, the Ashworth scale, to determine if any measurement limitations might have influenced the study's interpretations.

**Methods:** We re-analysed the CAMS Ashworth data (n=667) in which ten limb muscles on either side of the body were scored and summed to give a total spasticity score. Although this summation process appears clinically reasonable (conceptually sound), the numbers generated by it must also satisfy requirements for measurement (be psychometrically sound) for valid inferences to be made from the analysis of Ashworth total spasticity scores. We used Rasch analysis to test the extent to which summed Ashworth scales satisfied psychometric requirements for measurement.

**Results:** The Ashworth scale total body muscle spasticity score did not satisfy requirements for reliable and valid measurement. Empirical evidence did not support the six-response categories for 17 of the 20 muscles selected. Scores for many individual muscles had substantial floor effects indicating suboptimal scale-to-sample targeting, and therefore limited ability to detect clinical change. The majority of upper limb muscle scores did not fit as components of an overall total body scale score, indicating that combining upper and lower limb muscles compromises measurement performance.

**Conclusions:** Summing Ashworth scale grades across multiple muscles to generate an estimate of a person's total spasticity is clinically appealing. However, our analysis indicates the scores generated by this method did not satisfy requirements of measurements for

statistical analysis. Could this finding explain, in part, the discrepancy between patients' positive perceptions of cannabis benefit and the negative results of CAMS? The questions raised by this study underscore why state of the art clinical trials must use rating scales proven to be fit for purpose.

## NEU 9

### Lessons from the Cannabinoids in Multiple Sclerosis (CAMS) Study: Part 2 – what happens when the Ashworth scale makes the grade?

*A.A. Pace, J.P. Zajicek, J.C. Hobart*

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**Aims:** In a sister abstract (Lessons from the CAMS Study Part 1) we demonstrated that the Ashworth scale total body spasticity score did not meet requirements for reliable or valid measurement. Here we attempt to solve some of the problems identified, optimise the Ashworth's performance, and re-analyse the results of the CAMS study.

#### **Methods: Results:**

In Stage 1, we Rasch analysed data from a sub-sample of patients (n=98) to use a dataset uncontaminated by inter-rater variability. This identified two key problems: too many response categories; upper limb muscles did not "fit" coherently with lower limb muscles.

In Stage 2, we attempted to solve these problems by constructing an instrument from the Ashworth data that satisfied both clinical and psychometric requirements. This involved creating an 8-item lower limb spasticity scale with less response categories.

In Stage 3, we re-analysed the CAMS dataset (n=667) post hoc. When compared with the original 20-item scale, the new 8-item scale:

- generated significantly different spasticity estimates for 89% of people;
- generated group level results more consistent with patient-reported improvements (effect sizes: placebo = 0.19; marinol = 0.30; Cannador = 0.29);
- detected more individuals with significant improvements (n=109 vs 74). Nevertheless, the targeting of both 20- and 8-items scales was suboptimal thus underestimating changes in spasticity in all groups.

**Conclusions:** Poor measurement undermines the inferences from clinical trials. Here, improving the Ashworth scale altered the results of the CAMS study. Although the treatment effect was still not statistically significant the poor targeting of both the original and new Ashworth scales compromised their ability to detect change and, as such, underestimates the potential treatment effect. Further development could produce a clinician scale suitable for clinical trials. However, for now, we are still left uncertain as to the role of cannabis as a symptomatic treatment for people with MS.

## NEU 10

### Fit, Drugs and Electrons

*A.M. Scerri*

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**Aims:** In this work we discuss the Historical, Scientific Principles and Cultural Aspects related to the use of Electroconvulsive Therapy, including the Local Scenario.

**Methods:** Research Methods involved reviewing of Historical, Chemical, Electrical, Medical and other scientific international protocols, patient information material, as well as legal documents including consent forms and documents pertaining to the prescription of ECT.

**Results:** ECT has been a source of great controversy throughout its History. However it has a proven role in the management of a number of Psychiatric Disorders. An appreciation of its scientific role and general public attitudes to ECT, also influenced by the Media and the law is necessary in the education of the general public in its attitude to the Psychiatric Patient and to the understanding of the patient's own psychiatric illness and its impact on quality of life.

**Conclusions:** Understanding the implications, indications, scientific principles, history and cultural aspects helps in the understanding of the psychiatric patient undergoing Electroconvulsive therapy from a bio-psycho-social perspective, as well as in the education of the general public in their attitudes to psychiatric illness and its effects on psychiatric patients from a holistic perspective.

## NEU 11

### The influence of genetic and lifestyle factors on the risk of Parkinson's disease in the Maltese population

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**Aims:** This research was intended to explore the role of genetic variants and lifestyle choices on the onset of Parkinson Disease (PD) and parkinsonism (PS).

**Methods:** Cases (178, PD and PS) and controls (402) from Malta were collected as part of the EU-FP5 funded project, "Geoparkinson". Genotyping of the quinoid dihydropteridine reductase (QDPR) G23D, sepiapterin reductase (SR) IVS2-2A>G, methylenetetrahydrofolate reductase (MTHFR) C677T, MTHFR A1298C, leucine-rich repeat kinase 2 (LRRK2) G2019S, LRRK2 R1441G and alpha-synuclein (SNCA) G209A genetic variants was performed as described previously. Data on use of tobacco, and medications, consumption of alcohol, tea, coffee, chocolate, milk and cheese were obtained as part of a structured interview and analysed with SPSS software.

**Results:** The LRRK2 G2019S mutation was found in 3.1% of PD cases. The allele frequency for QDPR G23D was 0.3% for both cases and controls. The SR IVS2-2A>G was detected in controls only (allele frequency 0.7%). The allele frequencies for the MTHFR polymorphisms were similar in cases and controls [odds ratio, OR, 0.9 (95% confidence interval, CI, 0.5-1.6) for the MTHFR 677TT and 1.2 (95%CI 0.6-2.1) for the MTHFR 1298CC genotypes respectively]. None of the cases had the LRRK2 R1441G or SNCA G209A mutations. Tobacco use before disease onset, coffee, beer and spirit consumption were inversely correlated to PD and PS [OR 0.4 (95%CI 0.3-0.7), 0.7 (95%CI 0.5-1.0), 0.6 (95%CI 0.4-1.0) and 0.6 (95%CI 0.4-1.1) respectively]. Use of anti-anxiety tablets, antidepressants and sleeping pills showed increased ORs (ORs between 1.4-2.6). Further analysis showed that start of use of medications clustered around age of disease diagnosis. No association was observed for use of tea, chocolate, milk and cheese.

**Conclusions:** The frequency of the LRRK2 G2019S was comparable to that in Spanish, Italians and Sardinians. Neither of the other variants could be associated with PD in the Maltese. Although component(s) in coffee, beer, spirits and tobacco may protect against disease, it is also possible that PD patients have a lower tendency to use or consume these substances. The clustering of initiation of use of specific medications around the date of diagnosis tallies with data suggesting that certain behavioural modifications are early symptoms of PD.

## NEU 12

### Audit of Requests for Carotid Duplex Scanning

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**Aims:** Patients with a carotid artery territory event but without severe disability and fit for surgery should be considered for carotid endarterectomy. These patients may be referred for carotid duplex scanning to vascular surgery. The service is provided by one vascular surgeon. Over a 24 month period between July 2007 to July 2009, 507 carotid scans were performed. Each scan (including reporting) takes 30 minutes. This amounts to 126 hours per year of scanning. In view of the high workload in this field, referrals for carotid scans were audited to assess the quality of information provided in the request form.

**Methods:** 120 consecutive request forms for carotid scanning received between January and July 2009 were included. Data was collected on whether the following information was provided and whether this was legible: patient name; identity card number/hospital number; age, consultant, referring doctor, date of request, indication, side affected (where relevant), date of onset of symptoms, results of other investigations and fitness for surgery.

**Results:** In all 120 request forms the name and identity card number of the patient were included and were legible. In the vast majority (115/120), the name of the consultant was included. The referring doctor signing the request form was only identifiable in 3 forms (2.5%). In 12.5% (15/120) the request form was not dated. The age of the patient was only provided in 61% of cases (73/120). From the clinical details provided, 30% (36/120) of cases had no documented carotid territory symptoms and in 40 cases the side affected was not mentioned. The date of onset of symptoms was only included in 8 cases (7%) and out of these 5 had sustained the event more than 1 year earlier. In 17.5% of cases information was provided about results of other investigations.

**Conclusions:** The majority of requests for carotid scanning provide essential demographics. Important information such as the symptoms, side and date of onset of symptoms is frequently missing. The referring doctor is hardly ever identifiable on the form making contact for request for further information difficult. Development of a standard request form for carotid scanning may improve the quality of information provided.

## NEU 13

### A Clinical practice audit of Management and outcomes of patients presenting with syncope to the Emergency Admitting Ward, stratified according to prognostic risk

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**Aims:** Syncope often has a benign cause from a mortality perspective. Approximately 10% of affected individuals have a cardiac aetiology. Initial risk stratification is more likely to lead to a correct diagnosis and early treatment of such patients. This audit assesses the appropriateness of syncope admissions to the EAW in our hospital, using the recommendations of the ESC & ACEP. Patients were thus stratified into risk groups according to the presence of cardiovascular risk factors and a prognostic risk model was validated using local data.

**Methods:** 50 patients admitted to the EAW presenting with Syncope between April and June 2007 were studied. Purpose-made data sheets were used, containing demographic data, prognostic risk factors, utilized resources and length of stay. The patients were stratified into high, medium and low prognostic risks by applying the ESC & ACEP guidelines on risk stratification in syncope. The data was then analyzed. These patients were followed-up for 3 months and the re-admission and mortality rates were measured, comparing the three risk groups.

**Results:** M:F, 2:1. 60% (n=30) of the patients had cardiac monitoring, 26.6% of which had a significant arrhythmia. 4% (n=2) had a V/Q scan performed, which were normal. 48% (n=24) of patients had a CT brain. According to the risk stratification criteria, 29.2% of these were inappropriately scanned. From the moderate and high risk group patients, 57.4% (n=27) were inappropriately discharged early prior to full workup. In all, 12% (n=6) of patients were re-admitted and 8% (n=4) died within 3 months of admission to hospital. 3 month adverse events rates for high, medium and low risk groups were 36.4%, 8% and 0% respectively.

**Conclusions:** The study showed a high rate of readmissions and death within 3 months in the high risk groups. Cardiovascular and neurological risk stratification helps to identify those patients that need investigations and the low risk patients that can be safely discharged home. Using local data, this study validates the risk stratification model based on international guidelines for the management of syncope. A standardized format of risk assessment is thus recommended for our hospital.

## NEU 14

### A rare case of epilepsy post-unintentional durotomy after elective lumbar discectomy – a case-report

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**Aims:** Case Report

**Results:** We would like to present a rare case report describing a case in which new-onset tonic-clonic seizures occurred following an unintentional durotomy during lumbar discectomy and decompression. Unintentional durotomy is a frequent complication of spinal surgical procedures, with a rate as high as 17%. To our knowledge a case of new onset epilepsy has never been reported in the literature. Although

dural rupture during surgery and CSF hypovolemia are thought to be the main contributing factors, one can postulate on the effects of anti-psychiatric medication with epileptogenic properties. Amisulpride and Olanzapine can lower seizure threshold and therefore should be used with caution in patients previously diagnosed with epilepsy. However manufacturers do not state that in cases where the seizure threshold is already lowered by CSF hypotension, new onset epilepsy might be commoner. Finally, strong caution and aggressive post-operative monitoring is advised for patients with CSF hypotension in combination with possible epileptogenic medication.

**Conclusions:** In conclusion, we strongly recommend that patients on Olanzapine, Amisulpride and other potentially epileptogenic medication are either changed to other non-epileptogenic medication or are closely monitored post-operatively in the event of this rare complication developing.

## NEU 15

### Making the most of the ONLS data: can we get more out of what we put in?

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**Aim/s:** The Overall Neuropathy Limitations Scale (ONLS) is a questionnaire-based measure of functional limitations caused by peripheral neuropathy. Data collected on specific items are not scored per se; instead, information is condensed to generate rank-ordered categories grading upper and lower limb ability. This practice does not use all available information provided by each item, potentially reducing the scale's sensitivity to individual differences and changes in functional limitations. In this study we explore the possibility of achieving more than ordinal grades from a modified ONLS by scoring and summing the individual items.

**Method/s:** We empirically carried out alterations to the ONLS. Item categories were graded to reflect increasing degrees of limitation. Information available from the scale remained unchanged, but item scores were summed into a total. The resultant 10-item scale (score range 0-17) was tested using re-scored data from the Randomised trial of Methotrexate in CIDP (RMC) study. We used Rasch analysis to formally test whether it is meaningful to combine scores in this manner to define overall functional limitations, and the extent to which linear measurements can be derived from these summed scores.

**Result/s:** Item locations mapped a measurable continuum for limitations (-3.08 to +2.98 logits) well-targeted to the range within the sample. Item fit statistics indicated items worked together to define a single variable. Only one item (mobility over 10m) had disordered response thresholds, suggesting most scoring categories worked as intended. Interval-level estimates were derived for most people (96.6%; 230/238). All people had scoring patterns that fit Rasch-derived predictions, supporting measurement validity. Person separation index was 0.78, suggesting moderately high reliability. There was no evidence of scoring bias. However, gaps in the measurement continuum reduced the scale's potential responsiveness to individual differences and changes in ability within the RMC sample.

**Conclusion/s:** Yes, more information can be extracted from ONLS data. Indeed, Rasch analysis indicated that if ONLS data are scored and combined differently the resulting scale satisfies many psychometric criteria. As such, linear measurements of functional limitations can indeed be estimated from ONLS data. Nevertheless, we identified problems that if overcome, will further improve the measurement of activity limitations in CIDP.

## INF 1

### Clinicopathological features of Paediatric Leishmaniasis in Malta

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**Aims:** To assess the clinical presentation, histopathological features and treatment response of leishmaniasis in 0-14 year old children over the last 5 years

**Methods:** All children with a histopathological diagnosis of visceral and cutaneous leishmaniasis were identified from the Pathology Department at Mater Dei Hospital. Slides from bone marrow smears, slit skin smears and punch biopsies were reviewed. Clinical presentation was determined by retrieving the children's case notes.

**Results:** Eight children, aged 15-44 months were diagnosed with visceral leishmaniasis whilst 3 had localised cutaneous disease. Prolonged fever >38°C, pallor, hepatosplenomegaly, pancytopenia, raised inflammatory markers and hypoalbuminaemia were the common presenting features in children with visceralisation. All bone marrow smears revealed diagnostic Leishman-Donovan bodies as well as extracellular amastigotes.

A previously undescribed cyst-like structure containing amastigotes was identified in children whose bone marrow smear was performed whilst on antibiotics. An indirect immunofluorescence assay for *Leishmania infantum* IgG was positive in all. One child had a false negative ELISA but was subsequently confirmed to be infected with *L. infantum* by PCR. Sodium stibogluconate or liposomal amphotericin B were curative, with the latter being used in two children whose disease did not respond to the pentavalent antimonial. The 3 boys with cutaneous leishmaniasis had crusted nodules/ulcers on exposed body areas. Histology of skin specimens taken by punch biopsy or excision showed the typical non-caseating granulomatous inflammation with Leishman-Donovan bodies within the histiocytes and Langhans type giant cells. Management was different in all 3 cases with excision, cryotherapy using liquid nitrogen and intralesional injection of sodium stibogluconate being the treatment modalities used successfully.

**Conclusions:** Leishmaniasis is still prevalent in Malta. Visceral leishmaniasis, which is life threatening, is usually notified but cutaneous disease is grossly under-reported. Cutaneous cases need to be confirmed by slit skin smears or histology of biopsy specimens prior treatment. An effort should be made to identify the infecting species which, until recently, is thought to be caused by only two zymodemes of *L. infantum*. Leishmaniasis still remains one of the major neglected tropical diseases due to the limited interest and research investment it receives.

## INF 2

### A retrospective study of surgical patients with methicillin-resistant *Staphylococcus aureus* (MRSA) infected wounds

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**Aims:** The retrospective descriptive study will highlight characteristics of surgical patients with wounds infected with MRSA, concentrating specifically on the patterns of infection caused by this organism and the different approaches of surgical management involved.

**Methods:** The subjects were recruited by receiving culture and sensitivity laboratory reports of surgical inpatients that had a wound infected with MRSA, irrespective of other factors, between July 2007 and July 2008. The laboratory reports were provided from the Department of Infection Control in Mater Dei Hospital.

#### Results:

1. The importance of screening for MRSA in patients due for surgery who had previous admissions in the past 6 months
2. 40% of patients in this study were not given antibiotics according to Local Guidelines
3. In 60% of cases the treatment was not modified according to the Culture and Sensitivity result issued

**Conclusions:** This study will identify the factors which improve or hinder the management of surgical patients with MRSA-infected wounds. This will provide useful information for future policies and protocols in the management of MRSA wound infections.

## INF 3

### Invasive meningococcal disease in Malta: an overview, 1994-2007

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**Aims:** The purpose of this study was to describe the epidemiology of invasive meningococcal disease (IMD) in Malta in the 14-year period, 1994-2007, during which the disease surged following an almost 30-year period with negligible annually reported cases.

**Methods:** We reviewed the 233 IMD cases notified during a 14-year period (1994-2007) and analysed epidemiological and laboratory surveillance data.

**Results:** The crude incidence per 100,000 inhabitants peaked in 2000 to 8.1 (95% CI 5.7-11.6) and again in 2006 to 8.9 (95% CI 6.4-12.4). Of the total cases, 137 (59%) were confirmed and 30 (13%) were classified as probable. However, 66 cases (28%) had no laboratory evidence of the disease and were classified as possible. Information on serogroup was available for 114 cases. Serogroup B formed the largest proportion (76%; n=87) followed by serogroup C (16%; n=18). B:4:P1.19,15 strains (n=46) predominated throughout the study period since their first identification in 1998. With 28 deaths attributed to IMD the overall case fatality rate was 12%.

**Conclusions:** The incidence of IMD in Malta rose to one of the highest in Europe. Apart from stressing the importance of maintaining high vigilance for IMD, our findings underscore the importance of enhancing laboratory surveillance of the disease including characterisation of meningococci. Until vaccines against a broad range of serogroup B meningococci become available for universal use, the main methods of control remain the early treatment of cases and the prevention of secondary cases.

#### INF 4

### Rhino-orbito-cerebral mucormycosis with eyeball preservation

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**Aims:** Case report.

**Results:** Mucormycosis involving the rhinocerebral region is a relatively common, life-threatening, invasive fungal infection, usually affecting immunosuppressed patients. It presents a challenge in diagnosis and treatment, often resulting in loss of vision and focal neurological deficits. Standard of care is usually Amphotericin B and extensive surgical debridement. Our case of a 58 year old, poorly-controlled diabetic lady with rhino-orbito-cerebral mucormycosis, was diagnosed on presentation, and treated with intravenous liposomal amphotericin B and limited repeated surgical debridement. After 10 weeks of treatment, she was changed to an oral anti-fungal, posaconazole, and improved progressively despite complications.

A total of 286 days (over 9 months) of effective antifungal therapy was given. Although vision was lost in the right eye, the eyeball was retained, maintaining an acceptable cosmetic result. Control of diabetes improved and she remains well 1 year after stopping anti-fungal therapy. This was the first patient in Malta treated with oral posaconazole for rhino-orbito-cerebral mucormycosis.

**Conclusions:** Careful management with anti-fungal therapy, as well as limited surgical debridement, resulted in preservation of life as well as appearance, in this condition usually associated with high mortality and morbidity. Oral posaconazole is a valid alternative anti-fungal for longer term treatment of rhino-orbito-cerebral mucormycosis.

#### INF 5

### H1N1 Influenza in Adults at Mater Dei Hospital – a review of the first three months

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**Aims:** There is as yet limited data on this novel influenza and better understanding on the management of suspected and confirmed H1N1 cases is crucial for the development of effective treatment and control strategies at Mater Dei Hospital. This study aimed to review the management of suspected and confirmed adult H1N1 Influenza admissions to Mater Dei Hospital with the intention of improving clinical and hospital practices.

**Methods:** This was a prospective study of the management of all patients admitted with suspected H1N1 Influenza to Mater Dei Hospital above the age of fourteen. All data was collected from the patients' clinical notes. The inclusion criteria for patients in the study were guided by the 'Algorithm for Suspected Cases for H1N1/Influenza A presenting to Mater Dei Hospital' issued by the Infection Control Unit. Nasopharyngeal swabs were taken on all patients on admission to the ward and sent for influenza PCR.

**Results:** Fifty one patients were included since July 2009 up to the date of abstract submission. Forty three percent of the patients swabbed were males while 57% percent were females. The average age of adult patients admitted was 35 years. Patients with suspected influenza presented with the following symptoms: fever 98%, cough 86%, headaches 62% and joint pains 59%. Sore throat, rhinorrhea and diarrhoea accounted for 49%, 33% and 39% respectively. Thirty five percent of patients had co-morbid conditions including chronic respiratory disease(78%), diabetes(17%), chronic heart conditions(11%), chronic kidney disease(6%) and immunosuppression(6%). There was one documented death which occurred in the setting of chronic respiratory and cardiac disease. Fifty eight percent of all swabbed patients tested positive for Influenza, 33% were positive for H1N1 Influenza and 25% were positive for non-typeable influenza. Only 6% of patients who tested positive were not immediately isolated. However there were 45% of the patients being isolated testing negative. Seventy three percent of Influenza positive patients were treated with Oseltamivir.

**Conclusions:** Ideally the algorithm should be more specific in identifying patients with potential influenza, however because of the wide array of presenting symptoms this will not be an easy task. It is evident that clinical discretion is being used in prescribing Oseltamivir.

#### INF 6

### Management and outcome of pregnant HIV seropositive women in Malta

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**Aims:** To determine whether an undetectable HIV viral load is achieved by time of delivery and the success of preventing MTCT of HIV.

**Methods:** A retrospective study of all pregnant HIV seropositive women followed up at the Infectious Disease Clinic, Malta, between 1998 to 2009 was performed. These included females diagnosed with HIV infection prior to pregnancy, during pregnancy and during delivery. Data on the antiretroviral treatment regimens, plasma HIV RNA viral loads, mode of delivery and the HIV status of the offspring were obtained from the patients' case notes and pharmaceutical records.

**Results:** There were a total of 22 pregnant HIV seropositive women. All patients, with the exception of one who was diagnosed during labour, received antiretroviral therapy which consisted of a protease inhibitor-based regimen (ritonavir-boosted lopinavir or saquinavir). An undetectable HIV RNA viral load was achieved in 62% of patients at time of delivery. All babies, except one, were delivered by caesarean section. At present five babies are awaiting

the final PCR test to establish their HIV status. Otherwise, all babies born to HIV seropositive mothers have tested negative for HIV.

**Conclusions:** Management of pregnant HIV seropositive women, according to international consensus guidelines, by a harmonised multi-disciplinary team composed of infectious disease physicians, obstetricians, paediatricians and pharmacists, results in the provision of high quality care to the gravid mother and her infant. Early detection of HIV infection during pregnancy and the initiation of appropriate antiretroviral treatment lead to a higher chance of having an undetectable HIV viral load at delivery. The latter, in combination with post exposure prophylaxis of infants born to HIV positive mothers, is effective in preventing MTCT of HIV.

## INF 7

### Durability of anti-retroviral treatment in HIV seropositive patients in Malta

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**Aims:** The aim of this study was to assess the durability of anti-retroviral treatment in the cohort of patients being followed up at the Mater Dei Hospital (MDH) Infectious Disease Clinic.

**Methods:** This was a retrospective study of HIV patients attending the MDH Infectious Disease Clinic since 1998. Information was gathered from the patients' clinical notes and pharmaceutical records. Non-adherence was calculated according to the number of days of late collection of anti-retroviral therapy from the pharmacy.

**Results:** Our cohort involved 145 patients. Patients who left the island and patients who were lost to follow up were excluded from the study. A total of 97 patients (67%) were on highly-active anti-retroviral treatment (HAART). Sixty four patients necessitated one or more treatment changes and a total of 98 treatment changes were effected overall. Forty one per cent of treatment changes were carried out with the aim of improving adherence. Of these, 85% involved switching to a fixed drug combination tablet to reduce pill burden. Another 20% of treatment changes reflected a change in HIV treatment guidelines whilst adverse effects accounted for 30% of treatment changes. A further 11% of treatment changes occurred in the setting of Hepatitis B co-infection or pregnancy. Virological failure was responsible for only 1% of total treatment changes.

With respect to adherence to treatment, over 75% of patients were more than 95% adherent.

**Conclusions:** A very low incidence of virological failure was noted in the population studied. This low level of resistance to anti-retroviral therapy in the Malta HIV cohort is probably the result of a high percentage of patients with a satisfactory adherence rate, durable treatment and optimal management with antiretrovirals, which involves switching therapy when indicated.

## INF 8

### A Case of Cephalic Tetanus

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**Aims:** Case Report

Tetanus is a neurologic disorder caused by tetanospasmin, a protein toxin elaborated by *Clostridium tetani*. Cephalic tetanus is a localized form of the disease causing trismus and dysfunction of cranial nerves.

**Results:** We report the case of a man who presented with a 4 week history of dysarthria, dysphagia and a spastic tongue. After investigation to rule out other pathology, a diagnosis of cephalic tetanus was made. The patient was treated with anti tetanus immunoglobulins and benzylpenicillin. However he developed bilateral III cranial nerve palsy, and trismus. He was transferred to the ITU and started on magnesium infusion, and baclofen. Benzylpenicillin was switched to metronidazole, despite which the condition progressed and became generalised to involve the back and lower limbs.

**Conclusions:** Cephalic tetanus needs to be considered in cases presenting with localised spasticity and cranial nerve dysfunction, even if no entry wound is found. Treatment includes immunoglobulin, and antibiotics, however benzylpenicillin can actually worsen tetanus, as we discuss. We also highlight the different presentations of tetanus.

## INF 9

### Infectious Aortitis

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**Aims:** Case Report

**Results:** A 65 year old lady who had received a liver transplant for serologically indeterminate fulminant liver failure 14 years previously presented with a three week history of lower abdominal pain, diarrhoea and fever. Serial CT scans over a 2-week period showed progressive aneurysmal dilatation of an infra-renal calcified segment of the abdominal aorta (panels 2 and 3) which had appeared non-aneurysmal 6 months previously (panel 1). Multiple blood and urine cultures grew *Salmonella enteritidis*. No primary focus for her bacteraemia was evident on either transoesophageal echocardiography or colonoscopy. She underwent an urgent surgical repair of the aneurysm using a blood group-matched aortic homograft. Culture of the resected aortic wall yielded identical results. The patient received a 3-month course of antibiotics and went on to make a full recovery.

**Conclusions:** Acute aneurysmal transformation of the aorta is a life-threatening condition that is usually precipitated by microbial seeding of an atherosclerotic or traumatized segment of the vessel intima, vasa vasorum or mural thrombus in the setting of bacteraemia of any cause, contiguous sepsis, advancing age and/or immunocompromise. The mainstay of management is early surgical debridement and revascularization, coupled with intensive antibiotic therapy, although endovascular repair is a possible alternative. Unexplained non-typhoidal *Salmonella* bacteraemia, particularly in patients older than 50 years, should always prompt a search for this diagnosis.

## INF 10

### Audit to evaluate adherence to adult antibiotic guidelines in hospital acquired pneumonia

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**Aims:** Hospital-acquired pneumonia (HAP) is defined as pneumonia that occurs at least forty-eight hours after hospital admission. It is the second most common nosocomial infection in the United States and Europe with a mortality rate of between 30% and 70%.

The aim of the audit was to determine the incidence of HAP, evaluate the adherence to the HAP antibiotic prescribing guidelines and finally to issue recommendations for improving the standards of patient care.

**Methods:** The Audit was conducted by looking at inpatients diagnosed with HAP together with acute admissions with HAP / HCAP over a period of 12 months. Data collected included patient demographics, reasons for antibiotic therapy, antibiotic treatment, dose, route, frequency and duration of therapy. Any documented reasons for deviation from the guidelines were also recorded.

**Results:** Over the period of 12 months forty one patients, with an average length of hospital stay of 17.2 days (8.2 days in the ICU) were evaluated. Only 44 % of the patients were prescribed antibiotics as recommended in current HAP guidelines. The choice of antibiotics was varied, ranging from penicillins to carbapenems. Doses used were appropriate in 86% of cases and the length of IV treatment ranged from 4 to 10 days. Correct treatment was prescribed by senior doctors (Cons, RS, HST) in 78% of cases while junior grades (FY1/2, BST) prescribed correct treatment in only 47% of cases.

**Conclusions:** HAP and HCAP are serious pulmonary infections associated with significant morbidity/mortality. The audit shows that there is need for further education and training regarding antibiotic prescribing practices and guidelines among hospital doctors especially junior grades. A re-audit is recommended after educating the prescribers and data should be collected for a larger number of patients to give more reliable results.

## INF 11

### Diagnosis and Management of Community Acquired Pneumonia in the Accident and Emergency Department

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**Aims:** Community acquired pneumonia is a frequent pulmonary condition requiring hospital admission throughout the year. Various international guidelines have been published outlining the acute management of community acquired pneumonia. No local guidelines are currently available. A questionnaire was devised to evaluate current practices in the management of these patients in the Accident and Emergency Department at Mater Dei Hospital.

**Methods:** A questionnaire was formulated and handed out to all casualty doctors. The questions addressed areas which are crucial in the initial acute management of community acquired pneumonia. The questionnaires were distributed at the end of the three monthly rotations during 2009, namely January, April and July. Doctors who consented were asked to answer all the questions

immediately. No colleagues or medical literature could be consulted at the time. All questionnaires were kept anonymous and all answers were analysed.

**Results:** A total of thirty-three questionnaires were collected. All doctors answered the full eleven questions. Analysis of the answers shows that half the number of doctors mentioned CURB65 when asked about criteria for assessing severity of pneumonia. A large percentage of doctors (73%) would consider discharging a patient with community acquired pneumonia from casualty. The main first-line antibiotics prescribed by casualty doctors are a combination of a second generation cephalosporin with a macrolide (46%) or a  $\beta$ -Lactam in combination with a macrolide (36%). 70% of doctors would consider changing antibiotic if the patient was already on an oral formulation for more than three days before presenting to the Accident and Emergency Department. 64% stated that they usually administer the first dose of antibiotic in casualty. Blood cultures are taken by most doctors (76%) only when the patient is found to be febrile ( $>100^{\circ}\text{F}$ ).

**Conclusions:** Development of a local guideline on the acute management of community acquired pneumonia is mandatory to improve current local hospital practice. 'Refresher' lecture updates for hospital doctors on the acute management of commonly encountered hospital diagnoses, including community acquired pneumonia, may be very useful.

## INF 12

### Culture positive bacterial pathogens and outcome in Maltese adults with Community Acquired Pneumonia

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**Aims:** To study the incidence of positive culture results and their correlation with clinical scores, complications and outcome in adults with community acquired pneumonia, in comparison to culture negative pneumonia.

**Methods:** All adult patients with radiological and clinical evidence of community acquired pneumonia admitted to Mater Dei Hospital, were included in a prospective study. This was conducted over 15 consecutive weeks (105 days) between 1st December 2008 and 15th March 2009, both days included. From this cohort, patients with positive blood or sputum cultures were identified. These were compared to the culture negative group looking at differences between co-morbidity factors, CURB65 score and outcome. The co-morbidity score was devised to include pre-existing risk factors: smoking, diabetes, immunosuppression, renal impairment, cardiovascular disease and underlying lung pathology.

**Results:** A total of 212 patients admitted over the study period had radiological evidence of pneumonia. 44 patients (20.8%) were culture positive. The yields were 68.2% from sputum culture, 38.6% from blood culture and 2.3% from pleural fluid. The most common organisms cultured were Streptococci (18.8%), of which two-thirds were Strep pneumoniae; Pseudomonas (18.8%) and Haemophilus (10.9%). The average CURB65 score and co-morbidity score were similar in both culture positive and negative groups. The culture positive group had a 27.3% mortality compared to the 21.2% in the total cohort. There is a 3.63 fold increased odds of dying when a gram negative organism is cultured (RR = 31.3%) compared to a gram positive culture (RR = 11.1%).

**Conclusions** The 20.8% positive culture yield raises questions on the importance and significance of taking blood and sputum cultures. The most common lung pathogens cultured were found to be *Streptococcus pneumoniae* (18.8%), and *Pseudomonas sp* (18.8%). Mortality is very high with culture positive gram negative community acquired pneumonia

## INF 13

### Correlation between curb65 and white cell count with 30-day mortality in Maltese adults admitted with community acquired pneumonia

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**Aims:** To confirm the correlation between CURB65 and white cell count in a Maltese population cohort with community acquired pneumonia.

**Methods:** All adult patients with radiological and clinical evidence of community acquired pneumonia admitted to Mater Dei Hospital through the Accident and Emergency Department, were included in a prospective study. This was conducted over fifteen consecutive weeks (105 days) between 1st December 2008 and 15th March 2009, both days included. CURB65 score and white cell count result for each patient were documented on admission. These were correlated with mortality within 30 days of admission.

**Results:** A total of 194 patients admitted over the study period had radiological evidence of pneumonia. There was a mortality rate of 21.1% within thirty days of admission. A greater mortality risk was associated with increasing CURB65 scores. There was a 100% recovery in patients with an initial CURB65 score of 0, compared to 77.8% mortality in patients with an initial CURB65 score of 4 on admission. There were no admissions with a CURB65 score of 5. The mean white cell count for patients who died within 30 days of admission was  $17.9 \times 10^9/L$  with a standard deviation of 17.8. The mean count for the remaining sample was  $13.2 \times 10^9/L$  with a standard deviation of 6.5. There was a significant difference between the means of the white cell counts of the two populations. ( $p = 0.05$ )

**Conclusions:** An increase in the CURB65 score was associated with an increased mortality risk with the majority of deaths in those who scored 2 or more. These results correlate well with our European counterparts. Patients with a CURB65 score of 0 can be safely discharged and managed in the community as described in the British Thoracic Society guidelines for management of community acquired pneumonia. A high white cell count is also significantly associated with an increase in mortality risk.

## END 1

### An audit of all the insulin tolerance tests performed in adult subjects at medical investigation and treatment unit (mitu), Mater Dei Hospital, Malta

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**Aims:** The insulin-tolerance test (ITT) is considered to be the gold standard for evaluating the hypothalamo-pituitary cortisol and growth hormone (GH) axes and is performed in adults with suspected cortisol and/or GH deficiency. The aim of this study was to analyse indications

for which the ITT was done, correlation of basal hormone levels with resultant peak hormonal levels, analysis of the protocols used, and the treatment interventions recommended on the basis of the results of the ITT. Furthermore, the safety of performing ITTs was analysed.

**Methods:** The results of all ITTs performed at MITU since its set up in Nov 2007 were reviewed for the study. Data for each patient were collected which included: basal hormone levels, resultant hormonal levels during the ITT, protocols used and dynamics during the tests together with details of change in management as a result of the conclusions following the ITTs.

**Results:** A total of 22 ITTs were performed at MITU during 2008 till May 2009. No significant adverse event occurred during any of the tests performed. In 15 (68%) subjects documented adequate hypoglycaemia (blood glucose  $< 2.2 \text{mmol/L}$ ) was achieved. In a number of patients blood glucose samples were haemolysed and as a result in 4 patients it was not possible to document adequate hypoglycaemia during the test. All the patients had hypoglycaemic symptoms during the test. Almost in all the ITTs hypoglycaemia was reversed after onset of symptoms (20/22 patients). In most 50% dextrose was used to reverse hypoglycaemia followed by an IVI of 10% dextrose. 7 (32%) patients had a suboptimal serum cortisol response (Cortisol  $< 55 \text{nmol/L}$ ) to hypoglycaemia and all of these patients were started on regular doses of hydrocortisone. 9am basal cortisol levels ranged from 121 to 439 nmol/L (Normal range: 138-690 nmol/L). 60% (6/10) of patients who had a 9am cortisol  $< 25 \text{nmol/L}$  had a suboptimal cortisol response. In 4 subjects, although the lowest blood glucose documented was higher than  $2.2 \text{mmol/L}$  (2.4-3.1mmol/L) they still showed an adequate cortisol response. Peak cortisol response was documented at mean time interval of 76 min from start of test and lowest blood glucose at a mean time interval of 39min. 14 out of 21 (66%) patients showed a suboptimal GH response to stress (Peak GH  $< 10 \mu\text{g/L}$ ).

**Conclusions:** When performed in an established medical investigations unit with adequate supervision, the insulin tolerance test is a safe procedure. It is important to have clearly established protocols for such tests with experienced medical staff in attendance of such tests.

## END 2

### Quality Assurance Parameters of Type 2 Diabetic Patients in Malta

Caroline Gouder, Dr C. Gouder, Dr F. Casha, Dr B. Carauna Montaldo

Mater Dei Hospital, Malta

**Aims:** To identify whether Type 2 diabetic patients in Malta are being monitored and controlled with regard to their lipid profile and HbA1c levels, whether their blood pressure is optimized and whether they are being screened for diabetic eye disease, in keeping with recommendations based on international guidelines.

**Methods:** 200 Type 2 diabetic patients were identified from the medical wards and medical out-patients clinics over a period of 3 months. Their co-morbidities, treatment and blood pressure readings were reviewed from their medical records. Blood investigations over the past year were recorded from the I-Soft computer management system and included HbA1c levels, lipid profile, random blood glucose and serum creatinine levels. Out-patient appointments over the past year at the diabetes clinic, podology department and ophthalmic out-patients were noted from the PAS.



**Results:** Currently being processed.

**Conclusions:** To be drawn once the results are available.

### END 3

#### Diagnosis, treatment trends and outcomes after multimodality therapy of acromegaly over past four decades

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**Aims:** To assess presentation, treatment trends and outcomes after multimodality treatment, in patients with acromegaly.

**Methods:** Retrospective observational case-record study. 47 patients (25 females and 22 males), attending Neuroendocrine Clinic at Mater Dei Hospital, diagnosed between 1979 and 2008 were included in the study. Clinical data and serial biochemical results from diagnosis till the end of 2008 were recorded.

**Results:** The time lag between onset of symptoms and diagnosis was 6.27 years (SD 6.18). Soft tissue enlargement was the most frequent feature (n = 46) at presentation. Macroadenomas (>1 cm) were identified in 36 patients of which 25 were extrasellar and 11 were intrasellar. 7 were microadenomas (<1 cm). Treatment combinations included: surgery and radiotherapy (n = 14), surgery only (n = 9), combined surgery, radiotherapy and a somatostatin analogue (n = 11), somatostatin analogue only (n = 5), radiotherapy only (n = 3), surgery and a somatostatin analogue (n = 2), radiotherapy and a somatostatin analogue (n = 1). Normalisation of GH levels was achieved postoperatively in 30% of extrasellar adenomas, 50% of intrasellar adenomas and 50% of microadenomas. Of the 15 patients on somatostatin analogues, normal GH and IGF-1 levels were achieved in 54%. Before 1999 the mean time taken to achieve biochemical control was 14 years (SD 8) while post 1999 this was 2 years (SD 1). The most frequent co-morbidities were hyperlipidaemia (n=27) and hypertension (n=24). Diabetes insipidus developed transiently in 10 patients post operatively while in 1 case it persisted. 21 patients were hypothyroid (7 at diagnosis), 24 patients had impaired cortisol response (6 at diagnosis) and 17 males had low testosterone levels (9 at diagnosis).

**Conclusions:** Outcomes after treatment for acromegaly in Malta matches those of published studies, which record success rate of around 60% post surgery and 63% post somatostatin analogues. Marked improvement was achieved since 2000 possibly due to improved surgical techniques and somatostatin analogues introduction. Since availability of somatostatin analogues, radiotherapy use has decreased. Patients need lifelong monitoring to monitor for tumour regrowth, development of secondary tumours and hypopituitarism.

### END 4

#### A case of primary hyperparathyroidism in pregnancy

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**Aims:** A case of hyperparathyroidism in pregnancy is described.

**Methods:** A twenty-eight year old secunda gravida booked her pregnancy at 14 weeks gestation. It was noted in the past obstetric history that the woman had lost her first child at 41 weeks gestation delivering a stillborn baby weighing 4.2kg. In the second pregnancy an oral glucose tolerance test at 28 weeks gestation was normal.

**Results:** At 33 weeks gestation mild polyhydramnios was noted and the patient was admitted. During her hospitalization the patient complained of having passed a small renal stone. Two serum calcium levels were found to be significantly elevated 3.4mmol/l and 3.6 mmol/l. Serum parathormone was found to be significantly elevated - 247 pg/ml (Normal levels 12.0 - 72.0 pg/ml) and an ultrasound scan of the neck confirmed the presence of a parathyroid adenoma. Contemporaneously a mild rise in blood pressure and two ++ proteinuria were noted. Dexamethasone was administered with the two fold aim of pre-empting fetal respiratory distress syndrome in the case of premature delivery and possibly attenuating the possible increased risk for pre-eclampsia this condition carries. Steroids may have been also useful in treating hypercalcaemia. A parathyroidectomy was performed and the postoperative period was uneventful. The rest of the pregnancy was uneventful and at 38 weeks gestation a healthy child was delivered vaginally.

**Conclusions:** In view of this woman's past history and the events occurring during the second pregnancy it may be useful to consider obtaining serum levels of calcium in cases of idiopathic stillbirth.

### END 5

#### An Audit of HbA1c levels at Karen Grech and Zammit Clapp Hospitals

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**Aims:** To assess whether HbA1c levels in patients at KGH and ZCH are being checked, and if these are within the limits set by the National Institute of Clinical Excellence.

**Methods:** All the diabetic patients present at KGH and ZCH were included. We checked via I-Soft, whether the patients had their HbA1c levels tested over the last six weeks. This was done by having beforehand prepared a pro-forma. This included the ward, name, sex, whether HbA1c was taken over the previous 6 months, the HbA1c level, antidiabetic treatment prescribed, and co-morbid conditions. All information was entered in the pro-forma. NICE guidelines were taken as the standard for HbA1c levels.

**Results:** There were 25 diabetic patients at ZCH, and 46 at KGH. Of these 6 (24%) had their levels checked at ZCH, while 17(37%) had their levels checked at KGH. Of these 17% had their HbA1c within target levels at ZCH and 56% were within target range at KGH.

**Conclusions:** It is essential even in the elderly to assess levels of HbA1c every 6 months, and ensuring that these are within the criteria stated by NICE. An effort should be made to ensure that all new patients admitted in these two hospitals, should have

their HbA1c status checked on admission. I must also see that the levels should be within the target of less, or equal to 6.5%, unless complications such as hypoglycaemia arise, in which case a higher HbA1c must be accepted.

## END 6

### Diabetes and age

*Antonella Grima*<sup>1,4</sup>, *Josanne Vassallo*<sup>2,5</sup>, *Neville Calleja*<sup>3,4</sup>

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**Aims:** Quantifying the relationship between patient age and diabetes knowledge, diabetes-related distress, self-care, metabolic control and diabetes-related characteristics.

**Methods:** The study population consisted of a sequential sample of 356 adult patients, suffering from diabetes mellitus for at least one year, attending a follow-up visit at the Mater Dei Hospital, Floriana or Mosta Health Centre diabetes clinics. Clinical parameters were obtained during the patients' visits. A telephone interview was subsequently performed with 313 (response rate 89.7%) of the eligible patients, where the Diabetes Knowledge Test, (Michigan Diabetes Research Centre), Problem Areas in Diabetes questionnaire, quantifying diabetes-related psychological distress (Joslin Diabetes Centre), and Self-Care Inventory – revised (University of Miami) were administered. The study period was October 2008 to January 2009. Microsoft Excel and SPSS version 16 were used for analysis.

**Results:** An inverse correlation was found between age and Body Mass Index ( $p=0.03$ ), diastolic blood pressure ( $p<0.001$ ), and Low Density Lipoprotein (LDL) Cholesterol ( $p=0.04$ ). No significant association was found between age and glycosylated haemoglobin or fasting blood glucose. As expected, increasing age correlated with an increasing number of co-morbidities ( $p<0.001$ ). Older patients demonstrated a decrease in diabetes knowledge ( $p<0.001$ ), and a decrease in diabetes self-care ( $p=0.04$ ), especially in the areas of glucose monitoring ( $p=0.002$ ) and hypoglycaemia care ( $p<0.05$ ). Adherence to medication, however, increased with increasing age ( $p=0.03$ ). As patients grew older, they registered lower diabetes-related psychological distress ( $p<0.001$ ).

**Conclusions:** Although older patients controlled their weight, blood pressure and LDL cholesterol better, participations in diabetic self-care activities was limited. The increasing number of co-morbidities may contribute towards dismissing diabetes care, while concentrating on more symptomatic co-morbidities, or those considered to be more important by the patient. This is supplemented by the finding that diabetes-related distress also diminished with age. The lower knowledge about diabetes among older patients may also contribute towards their attitudes towards this silent disease. Recommendations for intervention include sensitizing elderly patients about the complications of diabetes, stressing the importance of prevention, and providing ways of improving self-care in this patient group. Even at an older age, improving glycaemic control prevents or delays complications, thus contributing towards a better quality of life.

## RAD 1

### Imaging of the spleen

*K. Cortis, E. Calleja, A. Mizzi*

*Medical Imaging Department, Mater Dei Hospital, Malta*

**Aims:** To illustrate the clinical and radiological presentation of splenic pathology, together with common anatomical variants.

**Methods:** The spleen is a lympho-reticular organ. It has a role in the active immune response through humoral and cell-mediated pathways and in mechanical filtration of red blood cells. Lesions in the spleen may be encountered in a variety of clinical settings ranging from asymptomatic patients to patients who are critically ill. We reviewed a series of computed tomographs (CTs) and ultrasound studies of the abdomen performed at our centre, and identified a selection of studies in which splenic pathology and anatomical variants were reported. The radiological findings were then correlated with the clinical presentation, and with the histopathology of these lesions (when relevant).

**Results:** A variety of pathophysiological processes pertinent to the spleen were encountered in this review. This includes hereditary disorders (e.g. thalassemia intermedia), granulomatous disease (tuberculosis and sarcoidosis), ischaemic processes (splenic infarction), primary vascular tumours (haemangiopericytoma), haematological malignancies (non-Hodgkin's lymphoma), metastatic disease (e.g. from papillary transitional cell carcinoma), and traumatic injuries to the spleen (e.g. splenic laceration and rupture).

**Conclusions:** Clinical imaging plays an important role in the differential diagnosis and work-up of patients with splenic pathology. Splenic lesions can also be incidental when imaging the abdomen for other reasons. Knowledge of the clinical history and examination are crucial in correct interpretation of imaging findings.

## RAD 2

### An audit of the local imaging practice for suspected deep vein thrombosis

*K. Micallef, A. Mizzi*

*Medical Imaging Department, Mater Dei Hospital, Malta*

**Aims:** To assess the imaging procedures employed locally in the investigation of patients with suspected deep vein thrombosis (DVT) in the lower limbs and compare it with international guidelines.

**Methods:** A retrospective study was conducted on all patients who had a Doppler ultrasound or venogram of the lower limbs performed during the year 2008. Data collected included: name of the patients? referring departments; whether the investigations were performed out of hours; results of the imaging procedures and site of thrombus when present.

**Results:** 1009 Doppler ultrasounds of the lower limbs were performed in the year 2008. 189 of these were positive and showed proximal DVT whereas 820 were negative. Of the negative Doppler ultrasounds, 145 had a subsequent venogram. 48 venograms were positive for DVT and 97 were negative. 18 of the positive venograms showed proximal DVT and 30 showed distal disease.

**Conclusions:** This audit stresses the importance of performing a follow-up investigation in moderate to high risk patients with suspected DVT and a negative initial ultrasound to increase the pick-up rate of the disease. It is local practice to perform a follow-up venogram in these patients. Venography was once accepted as the standard of accuracy for diagnosing DVT. However, because of its

invasive nature, inter-observer variability, side-effects associated with intravenous contrast administration, technical difficulty, and cost, it is not suitable for routine clinical follow-up. International guidelines recommend a repeat Doppler ultrasound be performed after 5-7 days in patients with an initial negative Doppler ultrasound and moderate to high clinical probability of DVT. This change is being proposed for local implementation.

### RAD 3

#### UFOs caught on film: 'Unidentified Foreign Objects' on plain film radiographs: A pictorial review

A. Abela, A.S. Gatt, R.D. White, R. Bhat  
Ninewells Hospital, Dundee, Scotland

**Aims:** To demonstrate the appearances of a variety of common and uncommon medical devices on plain film radiographs, through a pictorial review. To emphasise the important implications and valuable background information that may be obtained through correct identification of the various medical devices found in the general population.

**Methods:** We present a pictorial review of a miscellany of medical devices identified on plain film, using cases from our centre. We provide correlation between the appearances of the actual device and those on x-ray and an explanation of their clinical uses and indications.

**Results:** Medical devices are found across a range of body systems and vary from the more mundane catheters, central lines, inferior vena cava filters, pacemakers and stents (whether vascular, genitourinary, hepatobiliary or gastrointestinal) to more unusual devices such as gastric pacemakers, adjustable gastric banding, spinal cord or deep brain stimulators and implantable ECG loop recorders.

**Conclusions:** Medical devices are a common incidental finding on plain film radiographs, yet are a common source of confusion for the uninitiated. This exhibit will help the viewer to recognise a spectrum of such devices, raising awareness of their clinical significance and providing insight into the underlying pathologies in each case. Knowledge of their normal appearances and locations should also alert the reporting radiologist to the faulty or displaced device.

### RAD 4

#### Imaging Tuberculosis: a new experience of an 'old' disease

J. Muscat, A. Mizzi

Medical Imaging Department, Mater Dei Hospital, Malta

**Aims:** To demonstrate the role of medical imaging in the management - diagnosis and follow up - of patients with tuberculosis.

**Methods:** The compilation of this educational exhibit consists of the prospective review and collection of images of patients diagnosed with tuberculosis. The images are selected so as to highlight characteristic distribution patterns and imaging manifestations of this disease and its sequelae.

**Results:** The exhibit is to include imaging of cases of pulmonary TB alongside less stereotypical systemic presentations - musculoskeletal, neurological and renal tuberculosis. Description of image acquisition and salient patterns of interpretation will be outlined. Diagnosing TB can prove pain-stakingly difficult: history

of infection or exposure to tuberculosis may not be forthcoming, evidence of active disease may be absent in up to 50% of cases and a negative tuberculin skin test does not, in itself, exclude infection whilst the clinical and radiological features of TB may mimic those of many other diseases.

**Conclusions:** Recent years have seen a resurgence of tuberculosis in non-endemic populations and factors contributing to this include increased migration as well as the human immunodeficiency epidemic. Although in many cases biopsy or culture specimens are required to make the definitive diagnosis, it is imperative that radiologists and clinicians understand the typical distribution patterns and imaging manifestations of TB hence facilitating early diagnosis particularly in an age of population heterogeneity, atypical presentation and multidrug resistant strains. Once diagnosis has been made, radiology also constitutes a major part of assessment of response to treatment and follow-up.

### RAD 5

#### Community acquired pneumonia radiology: right versus left, upper versus lower

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<sup>1</sup>Department of Health Information and Research, Malta, <sup>2</sup>Department of Medicine, Mater Dei Hospital, Malta

##### Aims:

1. To determine which radiological zone is mainly affected in community acquired pneumonia.
2. To find a possible correlation between the lobes affected and mortality in community acquired pneumonia.

**Methods:** All adult patients with radiological and clinical evidence of community acquired pneumonia admitted to Mater Dei Hospital, through the Accident and Emergency Department, over a period of twenty-four weeks were included in a prospective study. Lung involvement on chest radiography was divided into right versus left involvement. Both lung fields were further divided into upper zone, lower zone (including middle and lower lobe in the case of the right lung), and bronchopneumonia. Multi-lobar pneumoniae and bilateral pneumoniae were classified separately. Mortality was defined as death within 30 days of admission.

**Results:** A total of 293 patients were admitted in the period under study. There was right sided involvement in 64.2% (n = 181), left sided involvement in 27.6% (n = 81) and bilateral involvement in 8.2% (n = 24). The upper zone was involved in 9.7% on the right and 3.7% on the left. There was lower zone involvement in 45.4% on the right and 22.3% on the left. The total mortality of the cohort was 18.8% (n = 55). Patients with bilateral pneumoniae had a mortality of 37.5%, whereas the patients with multi-lobar pneumoniae had a mortality of 38.2%. Right and left sided involvement had a mortality of 19.1% and 12.3% respectively, with an odds ratio of 1.68.

**Conclusions:** Radiological community acquired pneumonia more commonly involves the right lung, with a predilection for the lower zone. Right sided pneumoniae show an increased risk of mortality when compared to the contralateral side. Bilateral and multi-lobar involvement also increased mortality risk considerably.

## RAD 6

### The different faces of lymphoma

*K. Cortis, K. Micallef, A. Mizzi*

*Mater Dei Hospital, Malta*

**Aims:** To demonstrate the heterogeneity in the radiological characteristics of lymphoma.

**Methods:** We selected several cases of lymphoma with different clinical and radiological presentations. The cross-sectional imaging of these patients was reviewed and compared to similar 'typical' presentations from the medical literature.

**Results:** Lymphoma can arise in virtually any organ of the body. Clinical presentation varies widely and the differential diagnosis can be wide. Examples included in this educational exhibit include classic lymph node lymphoma; small bowel lymphoma; pancreatic lymphoma; pulmonary lymphoma and primary bone lymphoma amongst others.

**Conclusions:** Familiarity with the different imaging characteristics of lymphoma can help make a timely diagnosis of this 'treatable' condition and hence expedite treatment.

## RAD 7

### Complications of percutaneous transluminal angioplasty; a 1 year experience

*R. Grech, A. Mizzi*

*Medical Imaging Department, Mater Dei Hospital, Malta*

**Aims:** To assess the local complication rate for peripheral percutaneous transluminal angioplasty.

**Methods:** Retrospective data were collected from clinical notes of 121 patients who underwent PTA in our angiography suite during the year 2008.

**Results:** Early complications (defined for the purpose of this study as occurring within 24 hours) were only reported in 18 patients (15%). These varied significantly in their severity. 1 patient died and another one had to be admitted to intensive care following puncture site bleeding. Another 6 patients had a documented significant puncture site haematoma. 2 patients had transient acute renal failure (probably caused by contrast administration), which merited a nephrologist consultation. Emergency by-pass surgery was needed in 3 patients, following acute deterioration of their symptoms post procedure. Minor complications were found in further 6 patients.

**Conclusions:** Although there remains considerable debate as to whether patients should be offered angioplasty or surgical reconstruction, evidence suggests that the increase in the angioplasty workload has not precipitated a parallel increase in either morbidity/mortality or the requirement for emergency surgical intervention. In particular, the anticipated increase in procedural risk in patients with critical ischaemia has not been observed. Angioplasty is now the first line treatment in the majority of patients with critical ischaemia who can expect a low procedural risk and equivalent outcomes to surgery at 6 months.

## RAD 8

### Clinical outcome at 6 months following percutaneous transluminal angioplasty

*R. Grech, A. Mizzi*

*Medical Imaging Department, Mater Dei Hospital, Malta*

**Aims:** To assess the 6 month clinical outcome of patients that underwent percutaneous transluminal angioplasty for critical lower limb ischaemia.

**Methods:** Retrospective study of 103 consecutive patients with critical limb ischaemia that were exclusively treated by PTA. The indications for intervention were rest pain in 25 patients, non-healing ulcers in 31, and gangrenous lesions in 47. 65 (63%) of these patients presented with a predominant single arterial lesion, and the remaining 38 (37%) with multilevel arterial lesions. The clinical outcome was determined by looking at the clinical notes written in surgical outpatient clinics.

**Results:** The median follow-up period was 6 months. The survival rate at 6 months following PTA was 82%. 1 patient died in less than 24 hours post procedure and this was the only case in which the cause of death was directly attributable to PTA. 10% of the patients had an additional by-pass surgery following PTA. 27% of patients were completely asymptomatic, while a further 23% described improved symptoms. The cumulative amputation-free survival at the same period was 92%. 1 patient had an AKA, while 3 patients had a BKA. 4 patients had toe/forefoot amputations.

**Conclusions:** PTA was shown to have satisfactory outcomes locally, and to compare well with international studies. The high mortality rate is probably due to the poor general medical condition of these patients in general.

## RAD 9

### The Nutcracker Suite: A Tale of Two Syndromes

*A.S. Gatt, R.D. White, S.P. Sanjay*

*Ninewells Hospital and Medical School, Dundee, Scotland*

**Aims:** This educational poster aims to: 1) Differentiate two separate and unusual conditions, both of which are referred to as "Nutcracker syndrome" in the literature. 2) Raise awareness of these clinically important conditions, which are likely to be significantly underreported.

**Methods:** Using the various imaging modalities available in our department we present a pictorial review of the radiological appearances of these syndromes along with an overview of their clinical features. The findings are presented in the form of three clinical cases outlining the presentations and findings which differentiate the two conditions.

**Results:** The first "Nutcracker syndrome" is compression of the left renal vein between the superior mesenteric artery (SMA) and abdominal aorta (AA). The second is also known as "Wilkie syndrome" and is characterised by compression of the third part of the duodenum between the SMA and AA.

**Conclusions:** Although both syndromes have similar pathogenesis, they are separate conditions with significant clinical sequelae. We hope that this review helps to differentiate these conditions, improve understanding and encourage the use of descriptive names rather than "Nutcracker syndrome".

## RAD 10

### To audit the complication rate and diagnostic accuracy rate of all image-guided biopsies carried out in 2008

W. Scicluna, A. Mizzi

Medical Imaging department, Mater Dei Hospital, Malta

**Aims:** To assess the local complication rate of image-guided biopsies and to assess the number of biopsies which gave a definite histological diagnosis. Special interest was given to CT-guided lung biopsies.

**Methods:** We reviewed all the RIS (Radiology Information system) entries and case notes for patients who underwent a CT- or US-guided percutaneous biopsy from 01/01/08 to 31/12/08. We documented (a) early complications, (b) late complications and (c) the histology report. This data was compared to international literature obtained from centres in the UK and US.

**Results:** 27 out of a total of 47 CT-guided biopsies were lung biopsies. Early complications were diagnosed either instantly from the post-procedure scan or from the 4-hour post-procedure chest x-ray. All 27 patients were followed up. 1 patient experienced self-limited haemoptysis post biopsy. There was a pneumothorax rate of 25.9%. Two of these patients needed a chest drain insertion giving an overall rate of 7.4%. No deaths were recorded. As regards to the histological diagnosis rate, our statistics were very similar to results obtained at international centres. There were a total of 104 US-guided biopsies. Kidney biopsies were excluded from further assessment. Out of the remaining 62 US-guided biopsies, performed by consultant radiologists, 50 patients were reviewed and there were no recorded complication.

#### Conclusions:

1. The complication rate of CT-guided lung biopsies is comparable to that in international literature.
2. US-guided biopsies yielded no complications.
3. The histological diagnosis rate is high.
4. We recommend (a) repeat audit in 1-2 years' time, (b) improve labelling of RIS/PACS systems to facilitate the audit process in the future.

## RAD 11

### To audit the diagnostic adequacy of CT angiography in the work-up of patients with peripheral vascular disease

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**Aims:** CT angiography has become the diagnostic imaging modality of choice for peripheral vascular disease in our institution. Images are reviewed at our local multidisciplinary team meeting and management decisions are taken accordingly. To assess the rate of non-diagnostic CT angiograms in the work up of patients with peripheral vascular disease.

**Methods:** Radiological reports of all CT angiograms performed between 1st January 2008 and 31st December 2008 were retrieved from the Radiology Information System. Those cases that were deemed of poor diagnostic quality by the reporting radiologist were excluded.

**Results:** 255 (95.5%) of 267 CT angiograms were considered of good diagnostic quality by the reporting radiologist. 12 cases out of 267 (4.5%) needed further evaluation by conventional angiography. Of these, 2 CT angiograms had an incorrect timing of the contrast bolus, whereas in the other 10 cases, it was the reporting radiologist who suggested another imaging modality for further evaluation of the runoff vessels, e.g. because of heavy calcification.

**Conclusions:** The rate of good-quality diagnostic CT angiograms was considered to be acceptable, and therefore to offer a suitable alternative to conventional angiography.

## RAD 12

### Computed tomographic angiography has added value in patients with vascular disease

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**Aims:** Computed tomographic angiography (CTA) has the potential to detect unsuspected extravascular pathology in patients with vascular disease. The purpose of this study was to determine the prevalence of unexpected findings.

**Methods:** From January 2008 to December 2008, a total of 267 patients underwent CT angiography of lower extremity arteries. The angiogram reports recorded in the patient archive and communication system (PACS) were retrospectively reviewed for the presence and clinical impact of extravascular findings.

**Results:** 45 patients out of a total of 267 (17%), undergoing CTA, had incidental findings mentioned in the report. The incidental findings included congenital anomalies, benign findings but also 6 potentially serious findings. One case of renal cell carcinoma, and two adrenal metastases were later confirmed histologically.

**Conclusions:** This data suggests that unexpected CTA findings are common in vascular patients. Careful observation of cross-sectional images, even if "time consuming", is mandatory not only to assess vascular findings but also to avoid a under diagnosis of clinically relevant extravascular findings. Vascular surgeons need to ensure adequate follow-up for patients with potentially serious extravascular lesions.

## RAD 13

### A review of the post-processing techniques employed in the interpretation of peripheral CT angiography

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**Aims:** To review the various advanced post-processing techniques employed locally following computed tomography (CT) angiography in the investigation of patients with vascular disease, highlighting their respective roles and advantages.

**Methods:** Non-invasive cross-sectional imaging has largely replaced conventional angiography in the imaging of the arterial vasculature. We reviewed CT angiograms performed at our centre between 1st January 2008 and 31st July 2009 and identified a selection of CT angiograms that demonstrate the application of post-processing techniques including multi-planar reconstruction (MPR), maximum intensity projection (MIP), shaded-surface display (SSD) and volume rendering (VR).

**Results:** Accurate interpretation of CT angiograms includes a thorough review of the native cross-sectional images. VR imaging highlights the presence of calcified plaques and provides a general anatomical map of atheroma distribution. It is also easily accessed by non-radiological clinicians on PACS. More detailed image processing techniques, including MPR and MIP, are utilized by the radiologist to assess the distribution and severity of the disease. This is demonstrated through a number of selected cases performed at our centre on a 16-slice multi-detector computed tomography (MDCT) scanner.

**Conclusions:** Whilst non-invasive techniques, such as MDCT angiography, have largely replaced conventional angiography in the assessment of arterial disease, interpretation of these studies relies on proper and accurate use of advanced post-processing techniques.

## RAD 14

### Parotid Swelling: A Radiological Pictorial Review

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**Aims:** To review the normal anatomy of the parotid gland, the roles of different imaging modalities and the key imaging features of various benign and malignant lesions of the parotid gland, along with other pathologies of the peri-parotid region which might present with parotid swelling.

**Methods:** A retrospective review was undertaken of 113 patients who underwent radiological evaluation of parotid swelling between January 2004 and January 2008. Reports from these studies were analysed by two radiologists, with images of selected patients subsequently being reviewed. The radiological abnormalities in these patients were correlated with the histopathological findings.

**Results:** Several causes of parotid swelling were identified, covering a spectrum of benign and malignant pathologies of both parotid gland and peri-parotid structures. The best examples of these pathologies are shown, along with the corresponding microscopic appearances.

**Conclusions:** Parotid swelling is a common clinical manifestation of a variety of pathological processes that affect the parotid gland and surrounding structures. Familiarity with normal parotid anatomy and knowledge of the imaging characteristics of different pathologies are essential for accurate radiological evaluation. This also helps in establishing a diagnosis and facilitates the initiation of appropriate treatment.

## GER 1

### An evaluation of prescription charts in an assessment and rehabilitation hospital for older persons

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**Aims:** The regular audit of hospital prescription charts is recommended to ensure proper documentation and to prevent medication errors. Zammit Clapp Hospital has its own structured inpatient prescription chart together with written protocols on prescription writing and drug administration. Two audits (years

2006 and 2008) were carried out to evaluate prescription charts and to note actual practice by staff.

**Methods:** All 60 inpatient prescription charts were examined on four separate occasions and data collected on whether sections were filled out properly according to hospital protocols. The information obtained from the first evaluation of both audits was presented to staff before the second evaluation was carried out. For the first audit, a memo on the proper documentation of prescription charts was also circulated and added to the hospital's handbook for doctors whilst a nurses' protocol on drug administration was updated. Both handbook and protocol remained available on all wards for reference by the time the second audit was carried out two years after the first.

**Results:** The target level of 100% appropriate entries was achieved for a number of sections. The results presented in Table 1 concentrate on those parameters that registered the lowest percentages in the first evaluation of the first audit.

Table 1: Percentage of appropriate entries per section assessed

Audit Evaluation	Year 2006		Year 2008	
	1 <sup>st</sup>	2 <sup>nd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>
Patient's Age	46%	52%	49%	81%
Patient's Weight	2%	24%	0%	23%
Number of prescription sheets per patient	24%	48%	28%	75%
Allergies (including none known)	26%	60%	60%	86%
Details of prescribing doctor (full name; GMC number)	4%	70%	18%	70%

**Conclusions:** Results show that more than one audit was necessary to influence practice. The audits also helped identify reasons why certain parameters remained inappropriately filled, such as the difficulties encountered by nurses when trying to weigh a dependent patient on admission and the inadequate training of rotating junior doctors on the right way to fill out a prescription. This study confirms that the regular audit of prescription charts is recommended as it helps identify and correct omissions in clinical practice.

## GER 2

### Delivering quality where it really matters - a study on patients' satisfaction with their discharge process from a geriatric day hospital

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**Aims:** The purpose of this research was to assess the service interaction of the discharge process from a GDH using patient satisfaction with their discharge from follow-up as an outcome measure.

**Methods:** A qualitative approach was pursued by undertaking thirty in depth interviews carried out by the researcher in the community setting two weeks following discharge from geriatric day hospital follow-up. Since different customers have their own

particular characteristics, research methodologies had to be adapted to the elderly interviewees' needs. An intriguing aspect of the study was the adjustment of the methodology during the course of the research according to the preferences and requirements of the interviewees.

**Results:** Several areas where patient satisfaction was not optimal were identified and the interviews highlighted these areas and how these could be improved

**Conclusions:** The study has showed how simple and inexpensive procedural changes, such as the development of a consistent and standard approach in the discharge process, can secure patient satisfaction with their GDH experience. Management implications are strongly underpinned by customer and staff education – the basis of clinical service improvement. Their implementation besides increasing patient satisfaction, can improve day hospital and the overall health service efficiency by ensuring that customers are receiving the optimum care in the least expensive setting.

### GER 3

#### Patient safety culture in the homes of older persons in Malta and Gozo

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*Department of Health Care Services Standards, Malta*

**Aims:** The main aim of this study is the analysis of the safety related perceptions and attitudes of staff working in the Homes of Older Persons in Malta and Gozo. The purpose of the study is to gauge the patient safety culture in nursing homes, increase awareness about patient safety issues amongst staff and evaluate the impact of patient safety improvement initiatives. Moreover, the results obtained provide a baseline to track changes in patient safety over time.

**Methods:** The Nursing Home Survey on Patient Safety (developed by the Agency for Health care Research and Quality) was conducted during February – April 2008 by face to face interviews to a total of 431 health care workers from all the 39 licensed Homes for Older Persons in Malta and Gozo. Nursing homes managed by the Church, Government, Private and by Public-Private Partnership were included in the study.

**Results:** Church homes had the most positive responses to the majority of patient safety culture dimensions followed by the private, private-public and government nursing homes. Overall, the health care workers reported a positive attitude towards patient safety with the major problem in all sectors being the lack of staff. 95%, 85%, 79% and 77% of the respective church, private, private-public and state health care workers reported that they would recommend the nursing home to their relatives or friends.

**Conclusions:** Identification of the main contributing factors to the main finding, with the Church Homes topping the list as regards Patient Safety Culture, begs further analysis.

### GER 4

#### Retirement in a Maltese setting

*N. Azzopardi*

**Aims:** A short description of how the author tackled the problem of retirement from government and private service.

**Methods:** An essay based on factual experience.

**Results:** To encourage others to follow suit.

**Conclusions:** Contentment.

### GER 5

#### An Audit of anti-cholinergic drug use

*P.Zammit*

*Department of Geriatric Medicine, Karen Grech Hospital, Malta*

**Aims:** 5 common anti-cholinergic drugs should not be given to the elderly according to the Bruce criteria. The aim was to find if these medications were being prescribed to geriatric patients at KGH and ZCH.

**Methods:** All 215 treatment charts were reviewed for ZCH and KGH to check for the presence of these medications in August 2008. After the results were processed a talk to the hospital medical staff was given in January 2009. The second cycle of the audit was repeated in March 2009.

**Results:** There were variations according to the drugs prescribed but the use was around 3% which was similar to the USA. In the second cycle there was a reduction of prescription of these medications.

**Conclusions:** High risk anti-cholinergic medications are still given to the elderly patients. These should be avoided and alternative treatments given. This audit was deemed successful as there was a reduction in the prescription of these medications at both KGH and ZCH.

### OBG 1

#### Prevalence of HPV among Maltese women with abnormal smear tests

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**Aims:** The association between cervical cancer and HPV has been known since the 1970's. However very little is known about the prevalence and the different types of HPV amongst Maltese women. This study aims to correlate abnormal cervical cytology with HPV typing.

**Methods:** This is a multi centre study. In Malta the aim is to recruit 100 women and since the study started in March 2008, over 78 women have been included. The population used are women over 18 able to give written informed consent who are referred to have a colposcopy at Mater Dei for an abnormal cervical Smear. During the colposcopy session, a cervicovaginal lavage is collected using the Pantarhei® Screener. This is sent to the VU University Medical Centre in the Netherlands where HPV testing and genotyping are carried out.

**Results:** To date, about 78 samples have been analysed. Of these, about 3 samples were inadequate and the HPV types could not be determined. Of the remaining 75, 32 (42.7%) resulted negative for HPV, 11 (14.7%) were positive for Low Risk HPV types, 19 (25.3%) were positive for High Risk HPV, 7 (9.3%) were positive for a mixture of viruses while the remaining 6 (8%) results are still pending. The prevalence of the different HPV types among Maltese women was also looked into and this was correlated with the cytological abnormality.

**Conclusions:** From the data collected so far, the prevalence of HPV in Maltese women with abnormal smears is 49.3%. There was a strong association between HPV infection and cytological abnormality. Of note is that, in our study we found no HPV 18 and the most common HR HPV types are HPV 16, 31, 33, 68 and 66; and multiple infections were most commonly found below 35 years of age. HPV 16 was found in all lesions of CIN 3 and squamous cell carcinomas. This correlates well with studies carried out in

other countries notably the ongoing ARTISTIC trial in the United Kingdom. HPV testing and typing may allow us to be in a better position to advise our patients regarding follow up, treatment and also vaccination against HPV.

## OBG 2

### Predictors for post-caesarean section pain and analgesic requirement

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**Aims:** To assess whether pre-operative perception of experimental pain in pregnant women prior to elective caesarean section can predict the level of post-caesarean section pain and/or analgesic consumption. To compare puerperal pain scores in women having in-situ repair of the uterus at caesarean section versus scores of women having repair after exteriorizing the uterus.

**Methods:** Twenty women who were scheduled for elective caesarean section were enrolled in the study. On the eve of the caesarean, three devices were used to assess the patient's pain threshold and tolerance. These included Pain Matcher? (Cefar Medical AB, Lund, Sweden) for electrical pain assessment, and two algometers (Wagner Instruments, Greenwich), one of which was digital, for pressure pain assessment. The instruments were applied to the patient's right-hand, and the patient was asked to notify the investigator when she started to feel pain (pain threshold) and when she could no longer stand the pain (pain tolerance). Following surgery, the women reported the level of pain on a numerical rating scale (NRS), at regular time intervals, for the first forty-eight hours. The type of anaesthesia, site of uterine repair, haemoglobin levels, incidence of ileus, problems with breastfeeding, and analgesic consumption, focusing primarily on pethidine, diclofenac and paracetamol, were recorded. The pre-operative pain threshold and tolerance were compared with the post-operative NRS pain scores and analgesic consumption. The data was analysed using parametric tests.

**Results:** The mean pain scores at 6, 12, 24, and 48 hours post-operatively were 5.7, 5.9, 4.85, and 3.65 respectively. The Pearson correlation test revealed no significant relation between pre-operative pain threshold and tolerance and the post-operative NRS pain scores. A significant relation was found between pre-operative pain tolerance given by Pain Matcher? and post-operative paracetamol consumption ( $P=0.003$ ). Multiple regression analysis showed that the site of uterine repair and the type of anaesthesia were the most valid predictors of post-operative pain.

**Conclusions:** Paracetamol consumption post-caesarean section can be predicted using Pain Matcher?, a portable device that generates a painful stimulus by increasing electrical pulses from a unit placed between the patient's fingertips. Preliminary findings indicate a correlation between type of surgery and anaesthesia used, with post-operative pain.

## OBG 3

### Teenage pregnancy analysis

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**Aims:** To identify epidemiological trends in teenage pregnancies and identify the antenatal and post-natal complications associated with childbearing in this young age group.

**Methods:** Analysis of National Obstetric Information System (NOIS) gathered by the Public Health Information and Research Division of mothers under 20 years who delivered in 2006.

**Results:** The 237 teenage pregnancies in 2006 accounted for 7% of pregnancies in that year. This showed an increase of 2% from 2005. Of these approximately 5.4% were cigarettes smokers, which is double the percentage of mothers who smoked during pregnancy in the general population. Of the 164 cases studied, 1 had ante partum haemorrhage, 9 had Gestational Hypertension. Approximately 17% of the mothers studied had an emergency CS during labour, 11% had an elective CS, 5% had a Ventouse delivery/forceps delivery and 67% had a normal vertex birth and 10 of the infants delivered needed NPICU care. Further data analysis is being carried out.

**Conclusions:** Teenage pregnancies concern policy making in several countries for a number of reasons. Pregnancies in the younger age groups have been associated with higher rates of preterm delivery and perinatal mortality. These higher risks have been associated with many factors. Furthermore, research has proven that the prevalence of pregnancies in this age-group is on the rise in Malta, in comparison to many other EU countries where it is on the decrease.

## OBG 4

### Is pre-eclampsia the end-stage of a systemic inflammatory response to various inflammatory triggers in the presence of a placental circulation? A new hypothesis on pre-eclampsia – the disease of theories

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**Aims:** Pre-eclampsia remains the disease of theories. The enigmatic key to this disease is its causation. A possible all encompassing hypothesis is that pre-eclampsia is the end stage of an inflammatory cascade triggered by a systemic inflammatory cause in the presence of a placental circulation. A multitude of causes of systemic inflammation include infection, auto-immune disease, allergies, diabetes and collagen disease.

**Methods:** A case report is described whereby a 16 year old pregnant woman who complained of a urinary tract in the second trimester (24 weeks gestation) went on to develop severe pre-eclampsia necessitating abdominal delivery. This patient complained of dysuria and pain in the right renal angle with a positive right renal punch. Urinalysis revealed one plus protein and nitrites. Intravenous amoxicillin and clavulanic acid were initiated and the next day the patient developed pyrexia 101\* F. After initiating antibiotics and intravenous fluids there was apparent resolution of urinary symptoms. The following day the patient developed Adult Respiratory Syndrome and was transferred to ITU. Oxygen saturations had to be maintained by applying positive pressure ventilation via face mask. The latter patient was found to



have a positive blood culture for proteus mirabilis and meropenem and gentamicin were initiated. Dexamethasone was given in view of the possibility of premature delivery.

**Results:** On day 4 following the initial signs of ARDS, grade IV preeclampsia BP 220/120 mmHg, proteinuria +++, hypreflexia, 3 tap clonus and pulmonary oedema ensued which necessitated abdominal delivery. Post-hysterotomy, amlodipine, frusemide and magnesium sulphate had to be continued for five days until total resolution of the preeclampsia. The premature foetus needed prolonged special care and up to the time of writing this abstract the baby was still in the NPICU. The mother was discharged from hospital seven days post operation.

**Conclusions:** Infection may be one source of inflammation which may trigger the inflammatory cascade terminating into preeclampsia. In the presence of a placental circulation, systemic inflammation may culminate into full blown pre-eclampsia. This may be due to endothelial damage sustained at the trophoblastic level releasing inflammatory mediators initiating an inflammatory cascade, the end stage of which is pre-eclampsic syndrome.

## OBG 5

### Reducing the incidence of brachial plexus injuries in obstetric practice – A 30-year review 1980-2009

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**Aims:** The incidence and variables associated with shoulder dystocia linked with brachial plexus injuries in Malta is reviewed over a period of 30 years.

**Methods:** Over a ten year period 1980-1990, the incidence of brachial plexus injuries following obstetric trauma was 2.9/1000 live births in the Maltese Islands. A review of traumatic shoulder dystocia over this period of time highlighted a number of risk factors with a background macrosomic population (11.8% > 4.0kg, 1.5% >4.5kg. The body mass index of the mothers of these babies was high (short and obese) and a high incidence of abnormal glucose metabolism of 12% was noted in this group of women. Abnormal labour patterns with prolongation of all the phases of labour were noted. Thirty one percent of traumatic shoulder dystocia followed instrumental deliveries.

**Results:** During the latter nineteen years the incidence of traumatic shoulder dystocia has dropped significantly to 1.0/1000 live births. This may be due increased attention towards the above mentioned antenatal and intrapartum factors. During the antepartum period increased awareness and care towards dietary control was undertaken in overweight women. Widespread screening was implemented for diabetes in pregnancy combined with meticulous glucose control of pregnant diabetic women. A joint antenatal clinic involving the care of a diabetologist and an obstetrician was initiated in 1996. More attention to abnormal labour patterns especially in the presence of macrosomic infants

may have avoided difficult vaginal deliveries leading to traumatic shoulder dystocia. A shoulder dystocia drill has been included in the labour ward protocol. Increasingly breech presentations are being delivered by Caesarean Section. Caesarean Section is not without foetal complications as regards brachial plexus injuries. During the whole 30 year period there were four cases of brachial plexus palsy following abdominal delivery of macrosomic babies.

**Conclusions:** The incidence of traumatic shoulder dystocia has shown a sustained decrease over the past nineteen years with greater attention to both antenatal and intrapartum care.

## OBG 6

### Recrudescence of human papilloma virus cervical /vulval warts – blame it on sex or semen or both?

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**Aims:** A case report is presented whereby a 16 year lady had resolution and recrudescence of vulval and cervical warts correlating with sexual activity.

**Methods:** A 16 year woman was referred by her general practitioner regarding vulval and cervical warts. On examination a moderate amount of warts could be seen on the vulval region however on vaginal examination a thick tuft of frond-like warts could be seen emanating from the cervix completely obstructing the view to the cervix. A "smear test" was taken and a swab for Human Papilloma Virus subtyping was carried out. An appointment was given in one month's time for colposcopy. The smear test revealed severe dyskaryosis and the HPV subtyping showed viral infection with HPV 6 and HPV 16. Swab and serological tests for sexually transmitted disease such as HIV, Hepatitis B and C, gonorrhoea and chlamydia proved negative. The woman was counselled accordingly, instructing her on the mode of HPV transmission and the implications of HPV 16 cervical infection.

**Results:** The woman stated that she totally abstained from sexual intercourse and was reviewed by colposcopy two months after the first visit. The vulval warts had decreased in amount and silver nitrate was applied to the remaining vulval warts. However the thick tuft of cervical frond-like warts were noted to have all but disappeared. Colposcopically directed biopsies showed florid koilocytosis compatible with HPV infection but no dysplasia was detected. The patient was reviewed four months after the first visit and the same findings were noted. At the six month visit the patient again noted a recrudescence of vulval warts. Speculum examination again revealed cervical warts however to a much smaller degree than the first examination. On further questioning the patient stated that she had commenced a sexual relationship with a different partner. A repeat smear revealed koilocytosis but no dyskaryosis. A repeat colposcopy is to be repeated in three months time.

**Conclusions:** This case poses a number of questions:

1. Could the total abstention from sexual intercourse be responsible for the apparent resolution of both vulval and cervical warts; or
2. Could the immunosuppressive properties of semen from a different partner possibly coupled with sexual physical abrasion be responsible for the recrudescence of genital warts?

## OBG 7

### **Pelvic surgery and urinary symptoms: cause or solution?**

**N. Spiteri, Y. Muscat Baron**

*Department of Obstetrics and Gynaecology, Mater Dei Hospital, Malta*

**Aims:** To perform a retrospective evaluation of the short to medium-term effects of pelvic surgery on urinary symptoms.

**Methods:** 32 patients who underwent pelvic surgery over the past 4 years were contacted by telephone. Besides demographic data, past medical and drug history, the enquiry emphasized on an array of urological symptoms.

**Results:** Of the 32 patients, 28 were contacted of whom 4 had undergone pelvic floor repair and 24 vaginal hysterectomies. Patient ages ranged from 42 to 76 at the time of operation. Eight patients experienced significant urinary symptoms, including nocturia, stress incontinence or urinary frequency postoperatively in the short term. Out of a total of 168 urinary possible urinary events, 15 (9.4%) significant postoperative urological symptoms were recorded. No patient experienced urinary retention. Of the 8 patients, 5 already had urinary symptoms before their operation, all of them experiencing improvement of their symptoms postoperatively. A past history of pelvic surgery (Pelvic floor repair n=2, hysterectomy n=1, colposuspension (n=1), Insulin dependant diabetes (n=1), and diuretic use (n=3) was elicited from the 8 patients complaining of urinary symptoms.

**Conclusions:** Scientific literature is ambivalent towards the association of urological symptoms and vaginal surgery. There also lies the effect of recall bias as regards pre/postoperative urinary symptoms. This study suggests that in a minority of patients post-operative urinary symptoms do follow pelvic floor surgery. However it must be appreciated that various confounding factors exist, in particular in the medical and drug history which may affect post-operative urinary symptom. A more rigorous and powerful study on the subject is required to deliver appropriate weighting to confounding variables which may effect post-operative urological symptomatology.

## OBG 8

### **Dietary intolerance and endometriosis: a connection shedding light on the pathogenesis of an enigmatic disease**

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*Department of Obstetrics and Gynaecology, Mater Dei Hospital, Malta*

**Aims:** To evaluate a possible connection between endometriosis and dietary intolerance.

**Method:** This was a retrospective, comparative study conducted on 54 patients who had had laparoscopies for various gynaecological complaints. These women were recruited sequentially into the study so as to avoid bias (age range 20 – 55 years). The patients recruited were divided into two groups. Twenty-two patients were diagnosed to have endometriosis while the other 32 did not have this pathology. Post laparoscopy, these patients were asked through a telephone questionnaire regarding associated dietary intolerance.

**Results:** Twenty-two women were diagnosed as having pelvic endometriosis. The other thirty-two patients were noted to suffer from pathology other than endometriosis. More women with endometriosis complained of intolerance to one or more dietary components (26% versus 14%,  $p < 0.001$ ). The dietary components

cited most commonly to cause gastrointestinal intolerance in the group with endometriosis versus the group without endometriosis were wheat (36% vs. 22%  $p < 0.01$ ) and dairy products (39% vs. 9.8%  $p < 0.0001$ ).

**Conclusions:** Patients suffering from endometriosis complain of significantly more dietary intolerance. Dietary intolerance may alter the peritoneal immunological milieu influencing endometriotic colonization following retrograde menstrual flow. Diminished peritoneal immunological surveillance may encourage the implantation of endometriotic islets and once a foothold has been gained then the process may continue in the presence of altered peritoneal immunology. These findings may shed a new outlook on the pathogenesis and the management of endometriosis.

## OBG 9

### **The effect of Dexamethasone on the pre-eclamptic process - a brief reprieve up to day 4 post-Dexamethasone?**

**Y. Muscat Baron, R. Agius**

*Department of Obstetrics and Gynaecology, Mater Dei Hospital, Malta*

**Aims:** Review of pre-eclamptic process of three patients with PET before and after dexamethasone was administered.

**Method:** A retrospective observational study of three patients that had high blood pressure and proteinuria in Pregnancy was carried out. Three cases of pre-eclampsia were reviewed in connection with the administration of dexamethasone.

**Results:** In the first case, hypertension and proteinuria were noted at 27 weeks of gestation. Antihypertensive and dexamethasone were administered and the mean arterial blood pressure decreased to safer levels. On day 4 blood pressure readings indicated a persistent surge of a blood pressure 170/120 mmHg necessitating delivery. A live infant was delivered. A similar situation occurred in another pregnancy at the gestation of 26 weeks. Again on day 4 following dexamethasone administration a surge in blood pressure together with signs of pulmonary oedema occurred requiring delivery of the foetus. The third patient complained of dysuria, pyrexia and a positive renal punch was elicited. Antibiotics were initiated with apparent resolution of urinary symptoms. The next day the patient developed ARDS and was transferred to ITU. The latter patient was found to have a positive blood culture for proteus mirabilis. In view of the possibility of premature delivery dexamethasone 12mg was administered. On day 4 following dexamethasone administration, grade IV preeclampsia with a blood pressure of 220/120mmHg, proteinuria +++ culminating into pulmonary oedema necessitating abdominal delivery.

**Conclusion:** A possible interpretation of these observations may suggest that the anti-inflammatory impact of dexamethasone may affect inflammatory cascade involved in the pre-eclamptic process. Up to day 4, dexamethasone appears to attenuate the progression of pre-eclampsia, reducing the blood pressure and leading to significant gain in gestational age. Would a repeat administration of dexamethasone in pre-eclamptic patients at day 3-4 gain a further reprieve from the pre-eclamptic process and consequently increase the gain in gestational age?

## OBG 10

### Demographic data, past medical and gynaecological history and drug history of women undergoing vaginal surgery for pelvic floor prolapse

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*Department of Obstetrics and Gynaecology, Mater Dei Hospital, Malta*

**Aims:** To perform an assessment of demographic characteristics, medical and drug history of a group of women undergoing pelvic surgery for pelvic floor prolapse.

**Methods:** 32 patients who underwent pelvic surgery over the past 4 years were contacted by telephone. Besides demographic data, the past obstetric and gynaecological histories were enquired about. The past medical history and the associated drug history were also recorded. Enquiry about bowel habit and a number of urological symptoms was also registered.

**Results:** Of the 32 patients, 28 were contacted of whom 4 had undergone pelvic floor repair and 24 vaginal hysterectomies. Patient ages ranged from 42 to 76 at the time of operation. Twenty of the 28 patients (71.43%) had a significant obstetric history, 9 (32%) women having delivered more than twice through the vaginal route; 2 women had caesarean sections carried out. Ten (36%) women were hypertensive on medical treatment including diuretics. Four patients (14.28%) had inguinal/umbilical hernias, whilst 6 (21.43%) were habitually constipated. A past history of pelvic surgery (Pelvic floor repair n=2, hysterectomy n=1, colposuspension n=1), Insulin dependant diabetes (n=1), and diuretic use (n= 3) was elicited from the 8 patients complaining of urinary symptoms post-operatively.

**Conclusions:** A substantial proportion of women undergoing vaginal surgery for pelvic floor prolapse have significant findings in their past medical/surgical history and drug history. These findings may have a significant impact on the final outcome of the vaginal surgery and may be responsible for the post-operative symptoms. In view of these findings it is relevant to counsel patients appropriately prior to vaginal surgery.

## OBG 11

### Gastro-intestinal symptoms in women diagnosed with pelvic endometriosis

*Y. Muscat Baron, M. Dingli, R. Agius.*

*Department of Obstetrics and Gynaecology, Mater Dei Hospital, Malta*

**Aims:** To evaluate the occurrence of gastrointestinal symptoms in women with endometriosis.

**Method:** Fifty-four women who had undergone laparoscopies for various gynaecological complaints were recruited sequentially into the study so as to avoid bias (age range 20 – 55 years). Twenty-two patients were diagnosed to have endometriosis while the other 32 did not have this pathology. Through a telephone conducted interview a questionnaire was filled in regarding associated gastrointestinal symptoms.

**Results:** Gastro-intestinal symptoms were significantly more common in the endometriosis group 53% as compared to the other group of women 31% ( $p < 0.0001$ ). When comparing the group of women with endometriosis versus the women without endometriosis the most common upper gastrointestinal symptom cited was heartburn (82% vs. 26%  $p < 0.0001$ ) while the most common lower GIT symptom was constipation (78% vs. 41%,  $p < 0.001$ ).

**Conclusion:** Patients suffering from endometriosis complain of significantly more gastrointestinal symptoms. The increased gastrointestinal symptomatology in patients with endometriosis may be due several factors. The psychological profile of patients with endometriosis may differ from other patients and this factor may influence gastro-intestinal symptomatology. Food intolerance may influence peritoneal immunological surveillance which may influence both gastrointestinal symptomatology and the pathogenesis of endometriosis. These findings introduce a new perspective on the pathogenesis and possibly the management of endometriosis.

## OBG 12

### SANDS (MALTA) – Stillbirth and Neonatal society: the future

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**Aims:** SANDS (Malta) was first established in 1994 when a group of health professionals and bereaved parents felt that a vacuum existed where support of the bereaved parents of stillbirths and neonatal deaths was concerned. The inception of SANDS Malta has been instrumental in the creation of a full time Bereavement Midwife post with the Government Services.

**Methods:** It appeared convenient to organise the group's activities according to the status of its members. Support from SANDS developed into an initial hospital and later a community based service. The primary aim in the initial stages is to provide comfort for the mother and partner. Respecting the parents' wishes and providing an understanding and supportive environment are the key issues of support. Practical support is also offered so as to diminish the burden on both mother and her partner. For audit purposes a questionnaire distributed at the end of each SANDS session.

**Results:** The questionnaire indicated that the majority (69%) felt "much better" while the rest indicated that they felt "better" than before they attended SANDS. Following their attendance at SANDS the large majority (94%) were considering another pregnancy. In fact some 21 % of mothers did have a pregnancy within the first two years of attending SANDS. After 15 years, the services of SANDS Malta were further augmented by the employment of a full time Bereavement Midwife post with the Government Services. This led to one-to-one support in case of bereavement following miscarriage or stillbirth. The group support meetings with SANDS have undoubtedly decreased due to the services offered by the Bereavement Midwifery service allowing this organization to focus on ancillary aspects of bereavement support. The ancillary aspects involve the organization of two principal events in the year. During Easter time a Mass is organized by SANDS for bereaved parents as a tribute to their miscarriage or stillbirth. Later in the year during November, a communal burial for early and late miscarriages is prepared by SANDS Malta. This acts as a formal closure of the traumatic episode for the parents concerned further aiding in their psychological healing.

**Conclusions:** SANDS has undoubtedly helped several parents to deal with the traumatic experience however difficult the circumstances. The effective support offered by SANDS very much depends on the efficient co-ordination of both the Hospital and Community components.

## OBG 13

### Women's expectations and experiences of childbirth: a comparison of research findings

R. Pace Parascandalo

University of Central Lancashire, Preston, United Kingdom

**Aims:** To review studies which have aimed to explore what women's expectations for childbirth include, what factors influence such expectations and how such expectations relate to the actual experiences of childbirth.

**Methods:** comprehensive literature search was done using various electronic databases to retrieve studies whose aim was to explore the overall view of maternal childbirth expectations and those which have studied both maternal expectations and experiences of childbirth. Studies included have adopted quantitative and/or qualitative research designs. The main studies included in this review are dated between 1990 and 2007. No language restriction was applied, although all relevant studies included have been published in the English language. Search terms used included: expectation & childbirth, experiences & childbirth, intrapartum expectations, intrapartum experiences, childbirth & expectations & experiences.

**Results:** Literature investigating women's childbirth expectations and experiences has shown that these are multidimensional. Both positive and negative expectations and experiences can co-exist (Waldenstrom, Borg, Olsson, Skold & Wall, 1996). Throughout pregnancy, a woman develops expectations for childbirth which are central in determining her response to the childbirth experience (Beaton & Gupton, 1990; Fenwick, Hauck, Downie & Butt, 2005). Research findings suggest that childbirth expectations influence childbirth experiences (Chang & Chen, 2000; Vehvilainen-Julkunen & Likkonen, 1997). A reflection of a woman's expectations of childbirth in her actual experience is important in her evaluation of, and satisfaction with the birth process. Lack of congruence between expectations and experiences has been shown to influence negatively the childbirth experience (Gibbins & Thomson, 2001; Green, 1993). From the reviewed literature, women's expectations and experiences of childbirth relate to four main areas; women's feelings and behaviour during labour and birth, support during labour and birth, specific aspects of the birth process and the baby. Various factors have been identified and discussed which influence women's childbirth expectations (Fenwick et al, 2005; Highsmith, 2006).

**Conclusions:** Fulfilment of women's childbirth expectations has led women to positive childbirth experiences and satisfaction whilst aiding in the transition to motherhood (Hauck et al, 2006). Findings provide insight into how current childbirth expectations shape the concept of birth and can assist maternity healthcare providers to better understand how they can help women prepare for childbirth. Promoting realistic childbirth expectations and helping women achieve satisfying birth experiences, requires maternity healthcare providers' understanding of 'what' women's expectations are and 'how' they are influenced (Beaton & Gupton, 1990; Hauck et al, 2006).

## OBG 14

### Autonomy and Informed Consent in Obstetrics and Gynaecology

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**Aims:** Improving patient care involves good explanation of any procedure that is being performed, so that informed consent can be given by the patient. As physicians, we have the obligation to disclose information to competent patients who can understand and authorize a treatment plan.

**Methods:** Patients undergoing obstetric or gynaecological interventions at Gozo General Hospital between 2005 and 2008 inclusive were seen pre-operatively by the Consultant Gynaecologist. The operation and its effects on the patient as well as the possible complications were explained. It is important to understand and accept that the doctor's recommendations may not be accepted by the patient.

**Results:** Although predominantly Catholic, the hospital patients include other Christian denominations, Moslem patients, Jehovah Witnesses and patients with no specified religion. The views of each patient and her religious belief were respected at all times. Due consideration should be given in the care of pregnant women, as we are treating two patients in one body. With the new technology with which we can see the foetus so clearly, it is difficult not to look at the foetus as a patient.

**Conclusions:** Recognition of the need for provision of better information prior obtaining consent for operative treatment. Patients exercise their autonomy when agreeing to surgical procedures that are to be performed.

## OBG 15

### The changing face of the Maltese population

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**Aims:** The Central Mediterranean position of the Maltese Islands has ensured that the population has throughout the millennia maintained a degree of genetic influx. This has in more recent centuries been generally limited to a European influx. The study sets out to identify the recent immigration trends in as demonstrated by the registered births occurring in the Maltese Islands during 1999-2007.

**Methods:** All women delivering in the Maltese Islands during the period 1999-2007 were reviewed to identify their country of origin [maternities = 35825 with births = 36251].

**Results:** A total of 2158 [6.02%] women delivering in the Maltese Islands were identified as occurring in non-Maltese women; while a further 193 [0.54%] women did not have their country of origin registered. At least 63% of the latter can be definitely identified to be non-Maltese; however their country of origin was unknown or unidentifiable. Over half of these women [3.12%] came from the European [including Eurasia region] continent. The remainder came from the African [1.51%], the Asian [0.78%], the American [0.28%] and the Australian [0.26%] continents.

**Conclusion:** The last decade has seen the Maltese Islands being influenced by the general globalization process which has influenced immigration patterns. The effects of the present immigration patterns will therefore influence the future genetic and cultural composition of the Maltese population.

## OBG 16

### A retrospective analysis of patients with unexplained recurrent miscarriage attending a miscarriage clinic

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*Department of Obstetrics and Gynaecology, Mater Dei Hospital, Malta*

**Aims:** To determine the outcome of patients suffering from unexplained recurrent miscarriages following investigation and treatment as per protocol of the miscarriage clinic.

**Methods:** Patients referred to the miscarriage clinic are investigated applying a comprehensive protocol. An analysis of those patients with unexplained recurrent miscarriages following treatment as per protocol was carried out. The outcomes of these patients were recorded and analysed.

**Results:** Patients were divided into those with two and those with three miscarriages. The former group achieved a 78.6% live pregnancy rate following treatment while in the second group, this was only 54.5%.

**Conclusions:** Patients with two miscarriages were shown to have a much better prognosis than those with three. He recognised factors of age and miscarriage history were unaffected by the treatment protocols applied.

## OBG 17

### Body image and women's life long health

*J. Mamo, N. Mamo*

*Department of Obstetrics and Gynaecology, Gozo General Hospital, Gozo*

**Aims:** Introduction: Body image and body dissatisfaction has an impact on woman's health and wellbeing throughout her life span, including adolescent, postnatal, premenopausal, and beyond menopause.

**Methods:** Patients attending Gynaecology clinic at Gozo General Hospital were interviewed and any body dissatisfaction problems were discussed. Weight concerns, self esteem, dieting were discussed in relation to menstrual problems and menopausal symptoms. Women attending for their post natal review visit reported their concern regarding the effect of breastfeeding and contraception on their body weight and body image.

**Results:** Body dissatisfaction and the wish to lose weight is reported in older women as well as in younger ones. Those women who had no history of adolescent problems were not immune midlife body image dissatisfaction. Women who had body image problems especially those with eating disorders as adolescents were noticed to be more prone to suffer from body dissatisfaction in midlife

**Conclusions:** Throughout a woman's life span, body image plays an important role on her physical and mental wellbeing as well as her health.

## OBG 18

### Successful treatment of secondary infertility due to asherman's syndrome: a case report

*C.F. Barbara, A. Thomson*

*Worcestershire Acute Hospitals NHS Trust, United Kingdom*

**Aims:** Case Report

**Methods:** Not Applicable

**Results:** Asherman's Syndrome is the presence of intrauterine adhesions. It can be caused by trauma (instrumentation), infection and hypooestrogenism. A 36 year old lady presented with secondary

infertility. She had a history of missed miscarriage in 2006 and had Evacuation of Retained Products of Conception; this was followed by vague abdominal discomfort and a 2 month history of amenorrhoea. On routine scanning while on Clomiphene, the endometrium only thickened to 4-5mm and she was therefore started on Oestrogen and Gonadotrophins with no success. Hysteroscopy showed Asherman's syndrome with dense adhesions at the fundus and thinner adhesions in the rest of the cavity. Adhesiolysis was carried out bluntly using the hysteroscope and she was started on cyclical oestrogen and antibiotics to prevent recurrence of Asherman's syndrome. A Hysterosalpingogram showed patent cornuae and tubes. The patient spontaneously conceived in 2008 and had preterm labour at 32+5/40. Vaginal bleeding persisted over five weeks postpartum and an ultrasound scan showed findings consistent with placenta accreta, a possible complication of previous uterine instrumentation and scarring. However, hysteroscopy showed retained products of conception and the cavity was emptied. The patient was given antibiotics and oestrogens to prevent recurrence of adhesions.

**Conclusions:** Asherman's syndrome presents with amenorrhoea/oligomenorrhoea, recurrent miscarriage, infertility or adherent placenta. Diagnosis and staging is done by hysteroscopy, HSG and more recently MRI. The most accepted treatment for Asherman's syndrome is hysteroscopic adhesiolysis, with a postoperative intrauterine splint and high-dose oestrogen therapy the latter two measures done to prevent formation of the adhesions. In this case, fertility was restored without use of an intrauterine splint.

## OBG 19

### The hazards of anti-coagulation in pregnancy: haemoperitoneum following vaginal birth after caesarean section (vbac): a case report

*C.F. Barbara, A. Thomson*

*Worcestershire Acute Hospitals NHS Trust, United Kingdom.*

**Aims:** Case Report

**Results:** Haemoperitoneum is an uncommon complication of vaginal delivery and can occur during or after delivery. Predisposing factors include rapid labour, instrumental deliveries and trauma. A 33-year old lady was transferred in from a neighbouring hospital at 33+1 weeks gestation in established pre-term labour. She had a history of hypoplastic kidney, hypertension, unicornuate uterus and previous Caesarean section at 35 weeks gestation for severe preeclampsia. Notes transferred with the patient said that she had pulmonary embolism at 28 weeks gestation in the index pregnancy and was therefore on therapeutic doses of Enoxaparin. The lady opted for a Vaginal Birth After Caesarean Section (VBAC) since spinal anaesthetic was contraindicated due to high dose Enoxaparin. On day 3 postpartum, she developed abdominal pain and urinary retention. She was catheterised and treated for urinary tract infection but the pain persisted. She became tachycardic on day five postpartum, dropping her haemoglobin from 11.5 to 5.8g/dl. Her abdomen was mildly distended and tender. Ultrasound scan showed free intraperitoneal and pelvic fluid consistent with a bleed. The patient was transfused, given protamine sulphate and observed. Repeat scan five days later showed partial resolution of intraabdominal clots and warfarin was started after discussion with the haematology team. However her INR rose rapidly to 5.6 - this was associated with increasing pain and repeat ultrasound scan showed formation of a new haematoma. Ventilation/Perfusion

scans from the previous hospital were reviewed and these showed no convincing evidence of pulmonary embolism. CT Pulmonary Angiogram showed no evidence of pulmonary embolism and warfarin was stopped.

**Conclusions:** An acute drop in haemoglobin postpartum can be due to haemolysis or bleeding. Only few cases of haemoperitoneum post vaginal delivery have been reported and these are usually uterine or ovarian artery bleed or bleeding from placenta percreta. Other reported causes in literature include bleeding from hepatic metastasis and from a vascular band. Haemoperitoneum after vaginal delivery is usually managed by explorative laparotomy but this patient was managed conservatively by reversing anticoagulant therapy.

## OBG 20

### The genetic basis for the main causes of infertility

**E. Borg**

*University of Malta Medical School*

**Aims:** The aim of this project is to (1) review the genetic basis of the key causes of infertility from gametogenesis to the period of implantation, and (2) to create a curated dataset of protein interactions that are essential for this process in support of genome-wide disease association studies.

**Methods:** Using both standard literature review methods, as well as supervised text mining techniques, a set of genes associated with infertility has been established. The protein-protein interactions for these gene products, was then derived from public molecular databases.

**Results:** Key interaction pathways are constructed to outline the main steps in gametogenesis and implantation. A curated dataset of molecular interactions that have been shown to play a role in this complex biological process, and related pathologies, has now been established. This dataset is linked to a number of key biomedical resources such as GenBank and Ensembl.

**Conclusions:** Infertility is an important condition in reproductive medicine as it affects about 7-8% of all couples. Any interference in gametogenesis, binding/fusion or implantation may lead to infertility. The use of the interaction dataset this work has generated is being tested in the interpretation of genome-wide association studies for abnormal spermatogenesis.

## OBG 21

### Effects of type of anaesthesia on post-hysterectomy recovery

**J. Mamo, M. Refalo, N. Mamo**

*Gozo General Hospital*

**Aims:** Regional and General Anaesthesia are both used for Hysterectomy. The postoperative analgesia and postoperative recovery may vary depending on the type of anaesthesia. Do patients undergoing hysterectomy need less analgesia when regional anaesthesia is used?

**Methods:** Seventy seven patients who needed a hysterectomy and were included in the study. Of the seventy-one patients needing a hysterectomy, five were performed vaginally and the rest were performed transabdominally. Thirty-nine patients had bilateral salpingo oophorectomy at the same time of the abdominal hysterectomy. Five patients had a concurrent Burch Colposuspension. General anaesthesia using fentanyl. Morphine

and pethidine are given towards the end of the operation, to utilise their longer acting analgesic effect. In spinal anaesthesia, Marcaine is used as a spinal agent and pethidine and morphine are added for analgesia. Forty two had general anaesthesia and twenty nine had regional anaesthesia. With regards to abdominal hysterectomies, 60% were done under general anaesthetic whilst 40% were by spinal anaesthesia.

**Results:** The mean duration of stay was 3.5 days from the day of surgery to the day of discharge. Our results show that there was no significant difference between the effect of general and spinal anaesthesia, on the duration of hospital stay, for both vaginal and abdominal hysterectomy. Diclofenac and paracetamol suppositories are given routinely to every patient who has undergone a major gynaecological operation, unless there are contraindications. Intramuscular pethidine is added if needed. In the immediate postoperative period, the analgesia requirement was lower in the spinal anaesthesia compared to the general anaesthesia group.

**Conclusions:** Patients should be aware that their concern regarding regional anaesthesia is unfounded. Their hospital stay is not increased, and the need for analgesia is reduced.

## OBG 22

### Dydrogesterone a possible preventative treatment for preterm delivery

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**Aims:** Recent trials are ambivalent towards the usefulness of progesterone in preventing preterm labour in high risk patients. A possible alternative is dydrogesterone which is a progestin in oral form. Dydrogesterone is used in cases of miscarriage with significant success. The rationale of this study is that preterm labour is a continuum of pregnancy loss similar to miscarriage differing in that it occurs at a later stage. Dydrogesterone has also been implicated in reducing the incidence of pre-eclampsia a common cause of preterm delivery.

**Methods:** Patients were recruited from two firms which have a significant input from the miscarriage clinic and SANDS (Stillbirth and Neonatal Death Society). These were patients with recurrent miscarriage, threatened miscarriage, past history of miscarriages together with PCOS and infertility, neonatal death related to preterm labour or preterm delivery due to medical conditions such as pre-eclampsia. Also included were a number of women with multiple pregnancies. These women opted to continue dydrogesterone beyond 22 weeks until 34 weeks in an effort to avoid preterm delivery.

**Results:**

The high risk group parameters were compared to a group of contemporaneous women at low risk and the background population. Preterm delivery occurred in 6 out of 76 (7.9%) women at high risk of preterm delivery compared to 10 out of 140 (7.1%) in the low risk group. The occurrence of preterm delivery in the Maltese population is 6.8% similar to the low risk group.

**Conclusion:** Dydrogesterone given early in pregnancy appears to attenuate the incidence of preterm delivery in the high risk group assessed in this study. The above results may be due to the immunomodulatory properties exerted by dydrogesterone possibly preventing the initiation of the inflammatory cascade leading to preterm labour and preeclampsia another common cause for preterm delivery.

## OBG 23

### Prevalence of HPV among Maltese women with abnormal smear tests

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*Department of Obstetrics and Gynaecology, Mater Dei Hospital, Malta*

**Aims:** The association between cervical cancer and HPV has been known since the 1970's. However very little is known about the prevalence and the different types of HPV amongst Maltese women. This study aims to correlate abnormal cervical cytology with HPV typing.

**Methods:** This is a multi centre study. In Malta the aim is to recruit 100 women and since the study started in March 2008, over 78 women have been included. The population used are women over 18 able to give written informed consent who are referred to have a colposcopy at Mater Dei for an abnormal cervical Smear. During the colposcopy session, a cervicovaginal lavage is collected using the Pantarhei® Screener. This is sent to the VU University Medical Centre in the Netherlands where HPV testing and genotyping are carried out.

**Results:** To date, about 78 samples have been analysed. Of these, about 3 samples were inadequate and the HPV types could not be determined. Of the remaining 75, 32 (42.7%) resulted negative for HPV, 11 (14.7%) were positive for Low Risk HPV types, 19 (25.3%) were positive for High Risk HPV, 7 (9.3%) were positive for a mixture of viruses while the remaining 6 (8%) results are still pending. The prevalence of the different HPV types among Maltese women was also looked into and this was correlated with the cytological abnormality.

**Conclusions:** From the data collected so far, the prevalence of HPV in Maltese women with abnormal smears is 49.3%. There was a strong association between HPV infection and cytological abnormality. Of note is that, in our study we found no HPV 18 and the most common HR HPV types are HPV 16, 31, 33, 68 and 66; and multiple infections were most commonly found below 35 years of age. HPV 16 was found in all lesions of CIN 3 and squamous cell carcinomas. This correlates well with studies carried out in other countries notably the ongoing ARTISTIC trial in the United Kingdom. HPV testing and typing may allow us to be in a better position to advice our patients regarding follow up, treatment and also vaccination against HPV.

## OBG 24

### “Sex and the City” in Catholic Malta

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*<sup>(1)</sup>Bayer-Schering-Pharma Ltd, Malta branch*

**Aims:** The Maltese population traditionally harbours Roman Catholic beliefs that have been gradually secularised. The present study sets out to quantify the consequences of more liberal sexual attitudes in this community.

**Methods:** We reviewed the reproductive and sexual health indicators reported from Malta and from other selected European countries. We then analysed the findings of a questionnaire study which was carried out among 200 Maltese and 2200 other European individuals to investigate various aspects of their sexual history.

**Results:** A greater proportion of Maltese births occur in teenagers but the out-of-wedlock maternity rate in Malta appears to be the third lowest in Europe. However, the rate appears to have nearly trebled over seven years. Sexually transmitted infections

rates in Maltese are either similar to or lower than those reported from the other European countries. The Maltese reported a higher mean age at first intercourse and a lower mean number of sexual partners mainly in women aged over 35 years. They received an earlier sexual education but they still predominantly resorted to unreliable contraception methods at their first sexual encounter.

**Conclusions:** The study confirms that sexual behaviour has changed. The educational support to deal with these altered practices is in place but still needs to be reinforced

## HEM 1

### Posterior mediastinal masses in a patient with Thalassemia Intermedia - extramedullary Haematopoiesis. A case report

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**Aims:** Case Report

**Results:** A 52 year old gentleman with thalassemia intermedia diagnosed about 20 years earlier was incidentally noted to have well defined bilateral posterior mediastinal masses on chest radiograph. Further investigations into the nature of these masses were carried out initially by CT scanning which confirmed bilateral large masses in the posterior inferior mediastinum, mostly homogenous in nature with few necrotic areas. Nuclear imaging in the form of a sulphur colloid scan was done in order to assess for the presence of reticulo-endothelial tissue. However, this failed to show uptake in the lesions. Histopathological examination of a CT-guided biopsy of the right paravertebral mass showed the presence of trilineage haematopoiesis and a conclusive diagnosis of erythroid hyperplasia was made.

**Conclusions:** Extramedullary haematopoiesis (EMH) is a recognised, uncommon complication of haemoglobinopathies and should be considered in the differential diagnosis of posterior mediastinal masses in such patients. We demonstrate the role of medical imaging in making a diagnosis of EMH.

## HEM 2

### Overview of patients attending the Haematology Clinic at Mater Dei Hospital

*M. Grech, D.P. Busuttil*

*Department of Pathology, Mater Dei Hospital, Malta*

**Aims:** To report on the demographic and clinical characteristics of patients attending the Haematology Out-Patients Clinic at Mater Dei Hospital over a one year period.

**Methods:** A database was compiled for patients attending the Haematology Clinic between the period January 2008-December 2008. The patients' medical notes were screened for demographic data, reason of referral to the Haematology Clinic, diagnosis, co-morbidities, drug therapy, laboratory investigations and investigational procedures carried out. The number of direct admissions from the Out-Patients was also recorded.

**Results:** The results are presented in a tabular and graphical form.

**Conclusions** The study gives a snapshot of the demographic and medical characteristics of patients attending the Haematology Clinic at Mater Dei Hospital. Further extension of the database is planned to give a more specific overview over a longer period of time.

### HEM 3

#### Overview of haematology service as in-patient care: a preliminary report

M. Grech, D.P. Busuttill

Department of Pathology, Mater Dei Hospital, Malta

**Aims:** To study the epidemiological data of patients admitted at the Medical Investigations and Treatment Unit under the care of one Consultant Haematologist.

**Methods:** A database was compiled for patients admitted for treatment under the care of one clinical haematologist between the period January 2008-December 2008. The patients' medical notes were screened for demographic data, diagnosis, number of years since diagnosis, number of admissions per year, reason for admittance to ward, co-morbidities, drug therapy, laboratory investigations and investigational procedures carried out as in-patients and length of stay

**Results:** The results are represented in a tabular and graphical form.

**Conclusions:** This study is only a preliminary report on the characteristics of haematology patients requiring hospitalisation. Further extension of the database is planned to give a more specific overview over a longer period of time.

### HEM 4

#### Investigating the outcomes of chemotherapy-induced neutropenia – a preliminary report.

M. Grech, D.P. Busuttill

Haematology Section, Department of Pathology, Mater Dei Hospital, Malta

**Aims:** To investigate the outcomes in patients developing neutropenia post-intravenous cytotoxic chemotherapy.

**Methods:** Patients developing neutropenia following intravenous cytotoxic chemotherapy were identified over an 18-month period between January 2008- June 2009. The medical notes of these patients were screened to identify the patients' demographics including age and gender; the number of patients developing neutropenic fever; the number of patients developing septic shock; the mean number of septic episodes per patient during the 18-month period; the mortality rate; the number of culture positive and culture negative episodes; the identity of the culture positive bacteria; the site of isolation and the antibiotic sensitivity spectra.

**Results:** The results are being presented in a tabular and graphical form.

**Conclusions:** This study is a preliminary report and further expansion of the data is planned to give a more specific overview over a longer period of time.

### HEM 5

#### Mater dei audit of the appropriateness of red cell transfusion

Malcolm Marquette<sup>1</sup>, Alessandro Gerada<sup>1</sup>,  
Matthew Mercieca Balbi<sup>1</sup>, Darlene Muscat<sup>1</sup>,  
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<sup>1</sup>Medical School, University of Malta, <sup>2</sup>Blood Bank, Mater Dei Hospital, Malta

##### Aims:

1. To assess the quality of documentation in medical files, with respect to red cell transfusion
2. To determine the fraction of requested units that was actually transfused
3. To determine the relationship between the decision to transfuse and the pre-transfusion Haemoglobin (Hob) level
4. To assess the rate of inappropriate transfusions
5. To inform the Hospital Transfusion Committee with a view to generating guidelines in this regard

**Methods:** An audit tool was used to prospectively collect data surrounding transfusion episodes that occurred over a defined period. Data collected included:

- Patient diagnosis and clinical co-morbidities
- Hob levels on admission, pre- and post-transfusion levels and levels before discharge
- Details of transfusion (date, number of units)

##### Results:

Total number of episodes = 387

Number of episodes transfused = 289/387 (75%)

Appropriate transfusions = 248/289 (86%)

Inappropriate transfusions = 41/289 (14%)

Transfusions not documented in patient files = 64/387 (17%)

Number of episodes in which patient was over transfused = 57/289 (20%)

##### Proportion of episodes by specialty:

- Surgical = 134/289 (46%)
- Medical = 126/289 (44%)
- Paediatric = 29/289 (10%)

##### Proportion of episodes by gender:

- Males = 174/289 (60%)
- Females = 115/289 (40%)

**Conclusions:** Following on from this study a number of recommendations may be relevant to the practice of Transfusion Medicine within Mater Dei Hospital.

1. Appropriate evidence based local guidelines governing the use of red cell concentrates should be drawn up and should include the consideration of pre-transfusion Hob levels.
2. Any investigation results used to inform the decision to transfuse should be less than 24 hours old.
3. The decision to transfuse should always take into consideration the patient's status and any co-morbidities or lack thereof.
4. One unit of red cells may be adequate to elevate the patient's Hb sufficiently in many cases.
5. Poor documentation is inexcusable. Training should be addressed towards rectifying the current state of affairs.



## BMS 1

### Preliminary study of the prevalent mutations causing familial mediterranean fever in Malta

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**Aims:** Familial Mediterranean Fever (FMF), also known as recurrent polyserositis, is an autosomic recessive disease affecting the inflammatory pathway and as its name implies it affects populations of The Mediterranean basin. A FMF was first identified as a distinct syndrome in 1945. It is a disorder of inappropriate inflammation, where an event that under normal conditions can cause a mild inflammation, causes a severe response. The major pathophysiological characteristic of FMF is an inflammatory reaction of serosal tissues with increased chemotactic activity of leucocytes, massive invasion of the affected tissues by granulocytes and fever. Typical precipitating factors include physical and emotional stress, a high-fat diet and menstruation. Though the causative mutations have been identified within the MEFV (Mediterranean Fever) gene, located on the short arm of chromosome 16, the exact function of the product of this gene is still unclear though its role is clearly anti-inflammatory in nature. The aim of the study was to determine the prevailing mutations amongst the Maltese patients and their respective rate amongst the Maltese population as well as a preliminary analysis of the genotype/phenotype correlations.

**Methods:** The research sample consisted of patients referred to the Molecular Genetics Clinic, Mater Dei Hospital, and screened by sequencing of Exon 2 and Exon 10 of the MEFV Gene. In an attempt to measure the carrier rate of these mutations, 300 random samples from the Cord Blood Bank at the Laboratory of Molecular Genetics, University of Malta, were also analysed.

**Results:** Three mutations the E148Q in Exon 2 and the M694V and V726A mutations in Exon 10 of the MEFV gene have been identified amongst the referred patients. The carrier rate of the mutations have been calculated at 6.4% (E148Q), 1.5% (M694V) and 2.1% (V726A) amongst the Maltese population. With this estimated population carrier rate for the known FMF mutations (10%), a prevalence of the disease of 1% can be calculated.

**Conclusions:** From the data obtained it is clear that FMF is under diagnosed. The reasons for this could be the high variability of the presenting symptoms and age of presentation as well as the high prevalence the E148Q mutation amongst the population, that is known to present with a mild phenotype.

## BMS 2

### Endothelial Glycocalyx: imaging & manipulation

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**Aims:** Endothelial glycocalyx layer is a thin layer of macromolecules lying on the luminal aspect of the endothelial cells in the vasculature. The role of this layer in the filtration and reabsorption across the vessel wall and mechanotransduction in endothelial cells has been appreciated by various studies in the past decade. This study is a detailed review to explore the composition of the glycocalyx and its structural organization. Based on recent research, this study describes the ever changing nature of the various components of the endothelial glycocalyx and their dynamic relation with the fluid shear stress, blood cells, plasma proteins and molecules. These findings are used to identify gaps in the previous studies that attempted to describe this layer's dimensions and structural organization. Using comparative analysis the relation of red blood cells and white blood cells with endothelial glycocalyx were described, and the need for experimental analysis of the white blood cell relation with the endothelial glycocalyx is identified.

The contribution of the endothelial glycocalyx layer to various physiological and pathological processes is also discussed, focusing mainly on the role of the endothelial glycocalyx layer as a molecular sieve across which the Starling forces act based on the revised version of the Starling principle. The role of the endothelial glycocalyx in mechanotransduction is explored in detail. Furthermore the contribution of the endothelial glycocalyx to atherosclerosis, diabetes and inflammations is also reviewed.

The various imaging technique used to image the glycocalyx are discussed in this review. This review identifies few challenges for further exploration of the endothelial glycocalyx layer and its role in physiology and patho-physiology. The main challenge is that the current imaging techniques used to visualize the glycocalyx are associated with various limitations and although they advanced our understanding of this layer a more robust imaging technique that would enable a better understanding of the structural organization of this layer in various tissues is required.

**Methods:** please refer to the above section

**Results:** please refer to the above section

**Conclusions:** please refer to the above section

## BMS 3

### Identification of Polyphenolic Compounds as Potent Inhibitors of Alpha-Synuclein Aggregation

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**Aims:** Parkinson's disease (PD) is the most common motor disorder and the second most common neurodegenerative disease. Cumulative evidence now suggests that the aggregation of alpha-synuclein (aS) is critically involved in the pathogenesis of PD. The main aim of our research is to show that natural polyphenolic compounds are strong inhibitors of aS aggregation.

**Methods:** Using confocal single-molecule fluorescence spectroscopy, we have studied the inhibitory and destabilizing effects of sixteen natural polyphenolic compounds on  $\alpha$ S oligomer formation. The organic solvent DMSO,  $Fe^{3+}$  ions, and acidic phospholipids were used to trigger synuclein aggregation into oligomeric structures

**Results:** We found that a select group of polyphenols, notably black tea extract, tannic acid, myricetin, baicalein, nordihydroguaiaretic acid and (-)-epigallocatechingallate, exhibited potent dose-dependent inhibitory activity at physiological (low  $\mu$ M and nM) concentrations. Moreover, they were capable of robustly destabilizing pre-formed  $\alpha$ S oligomers. Further experimentation suggested that metal chelating or antioxidant properties of polyphenols are not likely involved in mediating these effects.

**Conclusions:** Based upon structure-activity analysis, we propose that the physicochemical profiles of potent polyphenols require, (i) aromatic elements that would allow binding to the  $\alpha$ S monomer/oligomer, and (ii) hydroxyl groups (especially the presence of three hydroxyl groups on the same benzene ring structure) that would hinder the progress of the polymerization process.

#### BMS 4

### Frequency of the AIDS-Resistance CCR5- $\Delta$ 32 allele in the Maltese population; using Malta to disprove The Black Death hypothesis

**B. Baron**

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**Aims:** To determine the percentage of the Maltese population resistant to common HIV variants (HIV-1) using the CCR5-receptor to infect cells and hence challenge conflicting hypotheses regarding CCR5- $\Delta$ 32 allele origin and spread.

**Methods:** DNA was prepared from venous blood by a salting out method. Polymerase Chain Reaction (PCR) was performed using two sets of primers that flank the region of interest. The PCR products were separated by electrophoresis using 3% agarose gel and visualized using Ethidium Bromide. A number of these products were sequenced to determine the exact position and size of the deletion.

**Results:** Using 300 blood donors it was determined that the CCR5- $\Delta$ 32 allele frequency in Malta is 0.00666 and the shorter PCR product obtained had the 32-base deletion expected in this region.

**Conclusions:** Using this data it is possible to disprove the hypothesis that the Black Death (particularly that of 1346-52) was responsible for a genetic shift that spread the CCR5- $\Delta$ 32 allele. This is based on the fact that Malta has had 3 major documented plague outbreaks since the 14<sup>th</sup> century with death tolls of 5-15% of the population at the time. However despite this the CCR5- $\Delta$ 32 allele frequency is extremely low.

#### BMS 5

### Linkage Analysis in a familial case of idiopathic Epilepsy in Malta

**Marisa Cassar, Janet Mifsud.**

*Department of Clinical Pharmacology and Therapeutics, University of Malta*

**Aims:** Linkage analysis plays a major role in research on genetics of epilepsy, using large families with several affected individuals. In this study, it was used to identify possible novel causative loci in a chromosomal interval that is linked to the epilepsy phenotype in a Maltese family, which has seven affected individuals with epilepsy, over three generations.

**Methods:** Linkage analysis was performed using high density single nucleotide polymorphisms (SNP) genechips. Analysis of the DNA from affected family members identified a linkage interval of about 20cM on chromosome 20 (20q13.32-33) which gave a parametric LOD score of 2.67.

**Results:** The inheritance pattern in the family was found to be autosomal dominant with incomplete penetrance. The linkage interval on chromosome 20 was confirmed using markers for Short Tandem Repeats (STRs). The affected individuals were found to have a different haplotype from the non-affected individuals. A novel 24bp deletion was, in fact, identified in all the affected individuals. This allele was found to normally occur only at a frequency of 0.04 in the general Maltese population

**Conclusions:** This project has identified novel genetic mechanisms which contribute to the phenotype of epilepsy and contributes to a better understanding the cause of this condition. When considering that 30% of people who have epilepsy are pharmacoresistant, and other affected individuals still have a low quality of life in spite of treatment with antiepileptic drugs, it is imperative that the knowledge gained through genetic studies is used in the identification of novel therapeutic targets and the development of new drugs.

#### BMS 6

### Pharmacogenetics of the human chemokine receptor 4 (CCR4) gene

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*Dept of Clinical Pharmacology and Therapeutics, University of Malta*

**Aims:** The human CCR4 receptor consists of a 360 amino acid GPCR protein, coded by a gene on 3p22. It is expressed on human Th2 lymphocytes, basophils and platelets, and is the receptor for the endogenous ligands, TARC and MDC both of which are involved in activated Th2 lymphocyte recruitment to the lung. Published studies have shown that antagonism of the CCR4 receptor or inactivation of its ligands leads to decreased pulmonary eosinophilia and diminished airway hyperresponsiveness in a mouse asthma model, while aspergillus-challenged CCR4 -/- knockout mice exhibit lower airway hyperresponsiveness than normal controls. The CCR4 receptor has been identified as a major drug target for asthma, and several patents for antagonist molecules have been filed by pharmaceutical companies. No CCR4 pharmacogenetic information exists in the literature.

To investigate pharmacogenetic implications of the CCR4 gene, with specific reference to its projected therapeutic targeted use.

**Methods:** Methodology: Total mRNA was extracted from a human CD4+ Th2 lymphocyte cell line. cDNA was used as a template to identify the transcriptional start site (TSS) and 5'UTR of the gene,

using 5'RACE methodology. Cloning procedures were performed using pCR4-TOPO and TOP10 E.Coli. cells. The identified CCR4 transcript 5'UTR region was mapped to the human genomic sequence using NCBI data and BLAST alignment tools. Deletion constructs were prepared for the promoter region upstream of the TSS, using the pGL3 Enhancer luciferase-based reporter plasmid and DH5-alpha E. Coli. cells. The constructs were transfected into mammalian cells using Tfx-20 and luminometric reporter assays were performed using the DLRA procedure. TF motif mapping of the promoter region was performed using Transplorer.

**Results:** Two novel promoter regions were identified, both of which possess functional transcriptional regulatory activity. Both promoters appear TATA less. Potential TATA sequences identified are in regions distant from the expected location of a functional TATA-binding protein motif. The 5'UTR arrangement of both promoters has been characterized and transcripts having different exon/intron arrangements have been identified. A higher ratio of transcripts initiate from the downstream TSS region, suggesting that the downstream promoter may be more active in human CD4+ Th2 cells.

**Conclusions:** Novel functional transcriptional regulatory data on the CCR4 gene has been elucidated. We are currently studying population variations of this gene and their potential functional implications.

## BMS 7

### Hypoglycemia causes widespread white matter injury – animaging study in transgenic mice

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**Aims:** Insulin-induced hypoglycemia presents the most important limitation to effective treatment for diabetes. Acute severe hypoglycemia may cause transient or permanent brain dysfunction such as confusion, cognitive impairment, seizures and coma. Deprivation of cellular glucose also contributes to the pathophysiology of ischemic brain injury. Recent neuroimaging and pathological studies of patients with severe hypoglycemic episodes suggest that white matter is also vulnerable to hypoglycemia. Although hypoglycemic brain injury is well documented in gray matter, little is known of mechanisms of injury in white matter deprived of glucose. In this study, we investigated the time course in vivo of axon and oligodendrocyte injury in a model of cerebral white matter injury in acute brain slices from adult transgenic mice.

**Methods:** Acute coronal brain slices (400µm) including corpus callosum were prepared from transgenic mice with neuron specific expression of YFP controlled by the Thy1 promoter (Thy1-YFP; line H) or from oligodendrocyte-specific expression of GFP (PLP-EGFP) or dsRed (PLP-dsRed) controlled by a proteolipid protein promoter. Perfused brain slices were visualized under confocal microscopy and which permitted high resolution time-lapse fluorescence imaging of intact axons and oligodendrocytes in white matter slices with minimal photodamage.

**Results:** Transient glucose deprivation (45 min) caused delayed structural disruption of YFP-labeled axons, which appeared as beading, fragmentation, and loss of fluorescence intensity 30-60 min after restoration of glucose levels. Application of the AMPA/

kainite antagonist, 30mM NBQX, reduced axonal injury even if started immediately following glucose deprivation. Confocal microscopy also allowed visualization of structural changes of oligodendrocytes in slices from PLP-transgenic mice.

**Conclusions:** Brain slices permit direct access to white matter cellular components within an intact three-dimensional relationship and are therefore ideal to examine white matter injury without regard to alterations in cerebral vasculature or blood flow, which are known to be effected by diabetes. YFP labeling of axons in white matter proved as a very sensitive marker for visualization of axonal injury in vivo. These results indicate that glucose deprivation causes delayed structural disruption in axons, mediated in part by activation of AMPA/kainite glutamate receptors. Transgenic expression of fluorescent proteins allows direct observation of cell-specific structural changes in living tissue.

## BMS 8

### Subunit glutamate receptor expression in the white matter of the developing rat brain.

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**Aims:** AMPA/kainate receptor mechanisms have been implicated in white matter injury. However, knowledge about glutamate receptor subunit localization in white matter is incomplete. We therefore examined the distribution of the kainate-selective glutamate receptor subunit, GluR5, in the postnatal rat corpus callosum using immunocytochemistry by confocal laser scanning fluorescence microscopy.

**Methods:** Experiments were performed on Sprague Dawley rats ranging from embryonic day E15 to adult. Animals were anaesthetized and perfused transcardially and their brains fixed thereafter. Embryos were anesthetized with halothane, and removed from the uterus, and the brains dissected and fixed. Coronal and sagittal sections (16 µm) were prepared by cryostat. For GluR5 expression, sections were processed using the avidin-biotinylated peroxidase complex method. For GluR5 co-localization with different cell markers, double-labeling was performed using Cy3 and Alexa Fluoro 488-conjugated IgG.

**Results:** From embryonic day (E)15 to early postnatal ages (P0 to P5), numerous GluR5-immuno reactive (IR) positive fibers were found throughout the brain, including the corpus callosum. These GluR5-IR fibers were labeled by nestin and RC2 antibodies. At P10, GluR5-IR dramatically decreased in nerve fibers and also became positive in glial cells in the corpus callosum. These GluR5-IR glial cells were labeled by the oligodendrocyte marker, anti-APC. GluR5 became progressively concentrated in the glial cells and less concentrated in the fibers thereafter. During the third postnatal week, GluR5 was most concentrated in oligodendrocytes and there was no GluR5-IR in the nerve fibers. GluR5 was widely expressed in oligodendrocytes until P32, but the intensity and the number of cells decreased. By P42 there were a few GluR5-IR glial cells in the corpus callosum.

**Conclusions:** GluR5 was found to be expressed together with nestin-IR and RC2-IR fibers in the developing brain before and during the period of myelination in the corpus callosum (which begins around P11). These GluR5 fibers may be processes of radial glial cells or of newly formed neurons and the functional significance

of this observation needs further investigation. Around P11, GluR5 expression shifts to oligodendrocytes. The dynamic upregulation of GluR5 during the postnatal period may contribute to white matter development and may influence the vulnerability of developing white matter to excitotoxic insults.

## BMS 9

### Enhanced efficacy of bioactive compounds: Targeting isoprenylation in cancer cells to mediate apoptosis

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**Aims:** The rate limiting enzyme for mevalonate synthesis in eukaryotic cells is 3-hydroxy-3-methylglutaryl coenzyme A (HMG-CoA) reductase (Hmgcr) and products of mevalonate synthesis play a key role in tumorigenesis (Li et al., 2002). Isoprenoids have the potential of inducing cancer cell death (apoptosis) by inhibiting Hmgcr. Although isoprenoids gave promising results in the treatment of cancer in pre-clinical trials (Bifulco, 2005), effective doses were poorly tolerated in cancer patients due to toxicity. The study aims to establish a combinatory treatment of isoprenoids with Rapamycin, an mTOR (mammalian target of Rapamycin) inhibitor, suggested to be a potential chemotherapeutic sensitizer (Shi et al., 1995). The combinatory treatment will serve to sensitize tumour cells for induction of apoptosis by isoprenoids, enhancing the therapeutic index of isoprenoids.

**Methods:** Cell culturing and pharmacological inhibitors: 3 cell lines (A549, PC3, C32) were chosen from a panel of cell lines. Pharmacological inhibitors used were Rapamycin, Limonene, Perillyl alcohol, alpha-pinene. Cytotoxicity assays (XTT) were performed on all cell lines alone or in combination and read at 490nm on microplate reader. Annexin V assay was used for apoptotic quantification by flow cytometry. Western blot analysis measures phosphorylation and activation of proteins using 4EBP and p70 S6 kinase antibodies.

**Results:** To evaluate the effect of growth inhibition and apoptosis, cells were cultured in the presence of Rapamycin and Isoprenoids. Preliminary data show that exposure of Rapamycin triggered response in PC3 and A549 whilst response was not observed for C32. All cell lines were differently sensitive to Isoprenoid exposure. Combinatory treatment with both drugs was performed, lowering the dose of Isoprenoids needed for apoptosis. Western blot analysis was carried out and kinase activity was shown to be abrogated in presence of Rapamycin.

**Conclusions:** We propose the synergistic combination of isoprenoids with the mTOR inhibitor, rapamycin (CCI-779) to enhance apoptosis and reduce toxicity. Hence this combinatory treatment might be an effective treatment option in patients with specific solid tumours. The identification of sensitive cell lines will allow further evaluation of molecular mechanisms that initiate apoptosis.

## BMS 10

### In vitro investigation of anti-osteoporotic bioactivity of extracts from indigenous plants and investigating whether these induce an oestrogen growth factor response

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**Aims:** The main aim of the study is the production of an extract from a local indigenous plant that induces the differentiation of the osteoblast cell line MC3T3-E1 without inducing an estrogen growth factor response in the breast cancer cell line MCF-7.

**Methods:** A wide range of different methodologies have been used. Methanol extraction has been utilized for the extraction process. Using the osteoblast cell line MC3T3-E1, titrations were performed so as to obtain the working concentrations for beta-oestradiol, the extracts, and an already commercialized product (Lignan). To determine the cytotoxicity, XTT assays were performed on the different compounds tested. A chemiluminescence method has also been utilized to directly measure the osteogenesis rate by measuring the uptake of the stain Alizarin red for calcium mineralization (bone matrix). Western blotting is being used to measure the activation of the Estrogen Receptor (ER-alpha) by using a specific phospho-antibody. Real time-PCR will be utilized for expression studies of identified oestradiol response genes.

**Results:** Using methanol reflux, two different extracts have been produced. The working concentrations of the test compounds have already been identified and XTT assays have showed us that none of the test compounds tested (beta-oestradiol, lignan, and carob pod extract) is cytotoxic. The osteogenesis rate has been quantified and after 15 days, a 3.6 fold increase in osteogenesis has been obtained with beta-oestradiol and a 7.6 fold increase in osteogenesis has been obtained with Lignan, when compared with a no factor control. Out of the 2 extracts produced, one of them did not produce any significant results. However, pilot studies conducted on the second extract have shown very promising results and the current experiments being performed will determine the ideal working concentration of this extract. We also confirmed the work done by Takamizawa et al (2004) where whilst ascorbic acid 2-phosphate stimulates osteogenesis, ascorbic acid showed a repressive effect depending on concentration used.

**Conclusions:** To date we can conclude that both beta-oestradiol, and Lignan increase the rate of osteogenesis. Although the primary extract did not produce any significant results, pilot studies on the secondary extract have shown us that the results are very promising. The effect of these test compounds on ER-alpha and on oestradiol response genes still needs to be determined.

## BMS 11

### The characterization of c-Kit mutations in Gastrointestinal stromal tumours

S. Gauci, J. Attard, S. Falzon, R. Avellino, J. Borg, J. Degaetano, G. Grech

**Aims:** Gastrointestinal stromal tumours (GISTs) are specifically mesenchymal tumours arising throughout the gastrointestinal tract. The incidence is of approximately 2/100,000, with a 5-year survival in 50% of the patients. Up to 80% of GISTs are CD117 positive due to a mutation in the c-Kit, whilst Platelet Derived

Growth Factor Receptor Alpha (PDGFRA) mutation is mostly characterized by CD117 negativity. Surgery is the main treatment in cases of benign and located GISTs, and imatinib mesylate is used in cases of metastasis or non-operable cases. The c-Kit mutations which respond to imatinib therapy are found in exons 11 and 9 whilst those resistant are found in exons 13 and 17. Considering the recent immunohistochemical discoveries and the increase in identification involving diagnosis and clinical approach in GIST, the aim of this retrospective study is to assess the sensitivity of various molecular techniques used to identify mutations in KIT hotspot exons 11, 9, 13 and 17 by using DNA and RNA isolated from formalin-fixed-paraffin-embedded (FFPE) tumour material from GIST patients. The main objective is to identify the genetic mutational profiles of c-Kit in GIST patients. The mutational state will also provide a molecular classification of patients and give information on prediction of therapy outcome that can be introduced in the diagnostic service.

**Methods:** 1. Microscopical examination will be performed on tumours which are diagnosed as leiomyoma, leiomyosarcomas and GISTs found throughout the gastrointestinal tract. 2. The pressure cooker antigen retrieval technique using Citrate buffer pH6 will be used for the immunohistochemical immuno-peroxidase technique using Avidin Biotin complex (ABC) to stain the slides with CD117. 3. After staining, CD117+ and CD117- samples will be identified, recorded and the CD117+ samples will be subjected to the study. From the formalin fixed paraffin embedded (FFPE) blocks, sections will be cut using a microtome. 4.

Mutation Analysis – Nucleic acid (DNA/RNA) will be isolated from the sections and Polymerase chain reaction (PCR) will be the method used to amplify the hotspot exons of c-Kit gene for patient samples that are CD117 positive (exons 9, 11, 13 and 17). The PCR products will be cloned to distinguish between neoplastic and non-neoplastic DNA/RNA material so as to select and identify the underlying mutation in the tumour tissue and to increase the sensitivity of the sequencing analysis.

**Results:** The project shall yield the percent CD117 positive GIST patients as diagnosed with the current classification. Currently the immunohistochemical detection of CD117 has been optimised and the retrospective analysis of 42 samples has commenced. Using a c-Kit positive sample, various DNA extraction protocols have been investigated to allow the efficient isolation of good quality DNA. The PCR for c-Kit exons 9 and 11 has been optimised on patient material. The mutations associated with imatinib sensitivity will be documented following molecular characterisation.

**Conclusions:** The identification of mutations that are associated with imatinib sensitivity shall be useful to implement this treatment regime in the current therapy. The introduction of molecular techniques to classify patients into therapeutic group allows individualised therapy for better patient quality of life.

## BMS 12

### Differentiation effects of biological extracts and histone deacetylase inhibitors on HL60 leukaemia cells in combination with retinoic acid

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**Aims:** Differentiation Therapy with retinoic acid has become a therapeutic solution for a previously commonly fatal disease, Acute Promyelocytic Leukaemia. It has the added benefit of reduced side effects by comparison to chemotherapy. This treatment is unfortunately limited to one rare leukaemia. Various biological extracts and known DNA modified are used to induce differentiation in leukaemia cell lines which are less susceptible to retinoic acid.

**Methods:** Leukaemia cells were exposed to the different biologicals followed by retinoic acid. Markers of granulocytic differentiation were detected by means of nitro-blue tetrazolium (NBT) reduction. The tested extracts were derived from Maltese endemic plant *Darniella melitensis* as well as a number of holometabolous insects.

**Results:** Protease-treated insect-conditioned medium was effective in inducing HL60 differentiation as a pre-treatment to retinoic acid. Certain histone deacetylase inhibitors were similarly effective. On the other hand, an organic fraction from the insect-conditioned medium was very active in inducing HL60 differentiation, when used alone. Extracts of *Darniella melitensis* were effective in inducing differentiation in diverse leukaemia cell lines.

**Conclusions:** This research may help expand the spectrum of leukaemias susceptible to differentiation therapy. This may be both through enhancing the effect of retinoic acid as well as via other independent mechanisms.

## BMS 13

### Investigating the angiotensin converting potential of naturally occurring terpenes using in silico models

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**Aims:** Preliminary biological assays with naturally occurring terpenes are indicative of their Angiotensin Converting Enzyme (ACE) inhibitory potential. The aim is to establish a robust predictive in silico tool to qualify and quantify ACE inhibition of a series of terpenes, and to make sound recommendations as to their viability for inclusion in more extensive drug design strategies that seek to identify novel agents within this highly utilised antihypertensive pharmacological class.

**Methods:** Initial X-ray Crystallographic Models were identified from the Protein Data Bank. These described one holo- and two apo- forms of the receptor- one bound to captopril and the other to enalaprilat. The terpene series included in the study were constructed and structurally optimised using SYBYL. They were then docked into the ligand binding pocket of the ACE using the bound co-ordinates of captopril and enalaprilat as templates. The binding affinity of each member of the terpene series to the receptor was calculated using SCORE, and compared to those of captopril and enalaprilat. Comparison of binding modality between the terpene series and captopril and enalaprilat was also carried out.

**Results:** The terpene series under study was able to forge the most important contacts that were observed between ligand and ligand binding pocket amino acids for captopril and enalaprilat. Their affinities for the ligand binding pocket were also similar. The predicted bioavailability of the terpene series was also good with ligands being both Lipinski, Veber and Rule of 3 Compliant.

**Conclusions:** There is sufficient evidence to suggest that continued modification of the terpene ligands series under study could yield innovative antihypertensive agents of the ACE inhibiting class

## BMS 14

### Poster withdrawn

## ENT 1

### Morphological maturation of salivary glands during gestation

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**Aims:** It is known that salivary glands pathology results in various diseases of oral cavity. The impairment of the intrauterine growth and development of salivary glands could stimulate malfunctioning of the glands in later life. The aim of present study was to find out the morphological and functional peculiarities of the salivary glands during various stages of normal gestation according to the data in this scientific literature. These may help to evaluate later the markers of the structural and functional pathologies resulted from the restricted intrauterine fetal supply.

**Methods:** This scientific literature is based on the analysis conducted in the patho-morphological department.

**Results:** The analysis has shown that salivary gland tissues could be recognized morphologically between 6th and 8th weeks of gestation. They develop as buds of ectoderm. Further epithelial cells division results in tubuloalveolar structures formation. At 10-12 weeks of gestation, there is the system of ramified epithelial columns with growing in nervous fibres and capillaries. Cell division and differentiation of the primary epithelial columns proceeds at 12-13 week. The epithelium covering becomes two-layered and then multi-layered. From 16th week the alveolar ends of the glands develop. The secretion of the serous saliva starts by the 20th week of gestation. From 21-22 weeks, the structure of gland becomes more complicated, the system of channels is differentiated, and secretory ends of a gland are transformed. A number and sizes of lobules is multiplied. A connective tissue capsule and interlobular connective tissue are more differentiated. The maturation of the gland epithelial compartments, nervous fibers results in further specialization of the salivary gland tissue by the 25-31 weeks of gestation.

**Conclusions:** Thus, the consequence of unfavorable intrauterine conditions for the fetal development may alter the differentiation and maturation of salivary glands and produce various pathologies in future.

## ENT 2

### Correlation of Symptoms and signs with CT in 305 patients with Chronic Rhinosinusitis

*A.M. Agius*

*Department of Surgery, The Medical School, University of Malta*

**Aims:** AIMS This study aimed to further elucidate the relationship between patient symptoms, nasal endoscopic findings and CT. The setting of this study was a busy otolaryngological practice using a computerised database on a small Mediterranean island.

**Methods:** A cohort of 305 consecutive patients with symptoms of CRS that persisted despite maximal medical therapy were evaluated by medical history, clinical examination and nasal endoscopy followed by sinus CT. CT scans scoring 2 or higher on the Lund-Mckay scoring system were classified as positive for sinusitis while scans scoring 0 or 1 were classified as negative for sinusitis.

**Results:** 172 scans (56%) were positive while 133 (44%) were negative. Males with CRS were significantly more likely to have a positive CT (chi squared test,  $p=0.0005$ ). Postnasal drip/rhinorrhoea, nasal obstruction and hyposmia as primary symptoms were significantly more likely to be associated with a positive CT (chi squared test  $p=0.0001$ ). Patients presenting with facial pain as the primary symptom were significantly less likely to have a positive CT (chi squared test,  $p=0.0001$ ). Middle meatal pus or nasal polyps on nasal endoscopy were significantly more likely to be associated with a subsequently positive CT (chi squared test,  $p<0.0001$ ). Mucosal oedema of the middle meatus was a non-specific finding.

**Conclusions:** Postnasal drip/rhinorrhoea, nasal obstruction and hyposmia as primary symptoms were significantly more likely to be associated with a positive CT than facial pain. Nasal endoscopy is a very important tool that can identify middle meatal pus or nasal polyps which are associated with a positive CT.

## ENT 3

### Facial pain in Chronic Rhinosinusitis-correlation with nasal endoscopy and CT

*A.M. Agius*

*Department of Surgery, The Medical School, University of Malta*

**Aims:** Commonly attributed to chronic sinusitis, facial pain is a frequent presenting complaint in otolaryngology clinics. This study aimed to correlate facial pain with nasal endoscopy and CT in such patients.

**Methods:** The setting was a busy otolaryngological practice on a small Mediterranean island. A cohort of 305 consecutive patients with chronic rhinosinusitis refractory to maximal medical therapy was assessed clinically, by nasal endoscopy and coronal sinus CT. The primary presenting symptom in 154 of these individuals was facial pain. Using the Lund-McKay scoring system, a CT positive for sinusitis was set at 2 or higher. A score of 0 or 1 was considered negative for sinusitis. Patients were followed up for a mean of two years and their outcomes analysed.

**Results:** The CT in 61 (40%) patients with facial pain scored positive while 93 (60%) patients had a negative CT. Patients with facial pain as the presenting symptom in rhinosinusitis were significantly less likely to score positive for sinusitis on CT (chi squared test,  $p<0.0001$ ). CT positive patients were significantly more likely to have pus or nasal polyps (chi squared test  $p<0.0001$ ) on nasal endoscopy than CT negative patients. Only 36% of patients with facial pain and other sinusitis symptoms had chronic

rhinosinusitis as confirmed by CT and presence of pus or polyps on nasal endoscopy. Patients with positive CT were significantly more likely to be treated surgically while those with a negative CT were significantly more likely to be treated by medication (chi squared test,  $p < 0.0001$ ).

**Conclusions:** Patients with a clinical diagnosis of sinusitis with facial pain as their primary symptom are significantly less likely to have objective sinusitis on their CT. Alternative neurological diagnoses to sinusitis should be considered in patients with facial pain.

#### ENT 4

### Intra-oral parotid duct ligation in the management of chronic recurrent parotitis: A case series

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**Aims:** Case Series

**Results:** We present a case series of five patients diagnosed with chronic recurrent parotitis, in whom tumours, auto-immune disorders, specific infections and sialolithiasis had been excluded as aetiological factors. These patients underwent intra-oral parotid duct ligation under general anaesthesia, as opposed to superficial parotidectomy, which is often quoted as the surgical treatment of choice in the literature. They were followed-up to assess post-operative recovery/complications and effectiveness of treatment.

**Conclusions:** Intra-oral parotid duct ligation is an effective low-risk management option for chronic recurrent parotitis.

#### ENT 5

### The Use of LASER in the Treatment of Obliterative Otitis Externa

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**Aims:** Obliterative otitis externa refers to an acquired stenosis of the external auditory canal characterized by formation of fibrous tissue. This usually follows chronic inflammatory conditions of the ear and presents with progressive conductive hypoacusis. Management is notoriously difficult: both medical and surgical treatment has high recurrence rates. Although the use of carbon dioxide laser in external ear conditions is well known, it has not been previously reported as a meatoplasty technique. This study aims to explore the use of carbon dioxide laser for canalplasty and observe long-term results.

**Methods:** Laser canalplasty was carried out on eight patients who had been treated very variably for obliterative otitis externa in the past several years. Previous efforts at traditional surgical canalplasty had failed in all eight patients. A pure tone audiogram was carried out at the start of the treatment. All patients were followed up by otoscopic examination and pure tone audiometry for a mean of 10 months.

**Results:** None of the patients showed any clinical sign of significant recurrence. In three patients, an early initial obliterative process was noted, which arrested spontaneously. In all patients there was a discrete but documentable increase in the air conduction threshold.

**Conclusions:** Carbon dioxide laser canalplasty for obliterative otitis externa offers an overall positive response with good canal patency, low recurrence rates and documentable increase in hearing. Longer term follow-up is however required.

#### ENT 6

### Epidemiology of cleft lip and cleft palate in Malta

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**Aims:** A descriptive epidemiological study carried out to determine the proportion of patients with cleft lip and/or cleft palate in Malta.

**Methods:** The study was carried out on patients born with cleft deformities between July 1993 and December 2007 as obtained from a plastic surgeon's database. Since 1994 to date the majority of patients born in Malta and Gozo with cleft lip and/or palate were referred to and operated by this same surgeon. Data was collected retrospectively from medical files and by phone questionnaires. Apart from demographic data, other aspects analyzed included type of cleft deformity, associated congenital anomalies, family history as well as maternal age, smoking and drinking habits and drug history.

**Results:** In total 99 patients were listed. 5 patients were excluded from the study as their medical information was inaccessible. Isolated cleft palate (65.96%) was more frequent than cleft lip alone (14.89%) and cleft lip and palate (18.09%). cleft palate alone was seen more commonly in females (35.48% vs. 30.1%) whilst males predominated in cleft lip and also in combined cleft lip and palate. A positive family history was noted in 10.75% of patients with cleft deformities (3.23% in 1st degree relatives and 8.6% in 2nd degree relatives). 23.6% of mothers kept smoking and only 2.25% continued drinking alcohol throughout pregnancy. Pierre Robin Sequence was the most common congenital anomaly associated with cleft deformities.

**Conclusions:** To date this is the first study of its kind on cleft deformities in Malta. The rate of isolated cleft palate was found to be much higher than expected when compared to results from other European countries where cleft lip, with or without cleft palate, usually predominates. We could not find an explanation for such a difference in findings; however, these results provide a good baseline for further analysis.

#### ENT 7

### Unusual case of hoarseness

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**Aims:** Case Report

**Methods:** Case Report

**Results:** A 24 year old gentleman was accidentally hit close to the midline of the neck, by a 3.5cm long steel nail attached to a rope. The nail was not found. The patient was asymptomatic except for a 5 mm lacerated wound at the level of the thyroid cartilage, which was sutured immediately after the accident by the General Practitioner and treated with steroids and antibiotics. However, three weeks later, the patient presented to ENT Clinic with worsening hoarseness since the accident. Clinical examination of the neck was normal.

Flexible nasoendoscopy revealed bilateral oedema of the vocal cords with the tip of the nail protruding lateral to the anterior commissure. A radiograph of the neck showed the nail localised in a horizontal position at the level of the thyroid cartilage below the epiglottis, partly projecting in the laryngo-pharynx. Exploration of the neck was carried out through the original wound and the nail with surrounding granulation tissue was removed without complications. Post-operatively the patient's voice slowly recovered over a period of 6 weeks.

**Conclusions:** Trauma with penetrative injuries of the neck, especially when associated with hoarseness, should be viewed with a high index of suspicion and should be referred to an ENT clinic for a full examination of the neck and vocal cords.

## ENT 8

### **Reliable 3-e cephalometric analysis using cone beam computed tomography (cbct): a normalization study using caucasian adolescents seeking orthodontic treatment**

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**Aims:** To be able to develop a unique 3-D Cephalometric landmark identification system that will help in the future development of a true 3-D Cephalometrics. In order to develop such a system, the anatomical landmark recognition and normalization of the cephalometric measurements in three dimensions are essential. Such a method was proposed to identify the landmarks and record the measurements in a group of Caucasian patients referred from a private practitioner.

**Materials and Methods:** This is a retrospective study using CBCT data from existing records of the Oral and Maxillofacial Radiology faculty practice. An exempt application is pending at the Institutional Review Board of the University of Medicine and Dentistry of New Jersey, USA. After seeking the approval, the volumes will be studied and multiple axial, coronal and sagittal planes will be reconstructed using specific target areas for anatomical accuracy and repetition. The norms will be recorded.

**Results:** This is an on-going study and hence the results are yet to be recorded. The goal is to identify the Cephalometric anatomical landmarks and perform the 3-D feasibility study on at least 10 Cone Beam CT (CBCT) volumes that were obtained on Caucasian adolescents. It is anticipated that the pilot study will be completed by the end of September 2009.

**Discussion:** The art and science of Cephalometrics hasn't changed much in the last few decades. Lateral and posterior-anterior Cephalograms are still being used for Cephalometrics in Orthodontic diagnosis. Even though the medical CT has been in place for over 40 years, the utilization of medical CT for the skull solely for the purpose of Cephalometric analysis was rare and the radiation doses did not warrant the usage of the technique. However, the introduction of the CBCT within the last decade has revolutionized the way Cephalometrics can now be performed. Reliable 3D data of skull can be obtained so that the errors generated via measurement of the planar 2D images from lateral and PA

cephalograms can be virtually eliminated. Superimposition of the left and right sides of the skull anatomy will never be a problem. The reliability of the 3D Cephalometrics will lead to better diagnosis and treatment planning for patients. The 3D Cephalometrics has a large role in the treatment planning for surgical cases, where the accurate assessment of the surgical outcomes depends on the initial Cephalometric measurements. This technique can be used routinely for surgical orthodontics for better outcomes. The normalization of 3D measurements for various ethnic population groups is a must before the task of predictable 3D Cephalometrics among these patient groups.