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Cytogenetics of chronic lymphocytic leukaemia in Malta

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Introduction: Chronic lymphocytic leukaemia (CLL) is a haematological malignancy which is commonly found in adults. It is characterized by mature B lymphocytes which accumulate in the blood. CLL has various prognostic indicators which include age, gender, chromosomal abnormalities and haematological parameters. Chromosomal abnormalities seen in CLL include crytpic abnormalities which require the use of molecular cytogenetic methods or molecular genetic methods for detection.

Methods: Blood was collected from 21 untreated patients with CLL who consented to participate in this study. Chromosomal suspensions were prepared using standard methods in the Cytogenetic Laboratory. Fluorescence in situ hybridization (FISH) using probes specific for 17p13.1, 11q22.3, 13q14.3 & CEP 12 *loci* were used. The results obtained by FISH were compared with those obtained using G-banded karyotyping. Furthermore the chromosomal aberrations detected were correlated with the patients' age, gender and haematological parameters.

Results: The most common chromosomal abnormality was deletion (del) 13q14x1 (40%), followed by del 17p13x1 (20%), del 11q22x1 (15%), trisomy 12 (10%) and del 13q14x2 (10%). FISH results obtained proved more robust when correlated with other prognostic indicators. The results were also compared with karyotype results seen in the Cytogenetic Laboratory. Karyotyping identified chromosomal abnormalities, which were not detected by the FISH panel but failed to identify some cryptic chromosomal abnormalities which were seen only by FISH.

Conclusion: In conclusion, both FISH and karyotyping techniques are recommended in patients with CLL in the Maltese medical setting to improve patient management.

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Sunitinib therapy and cardio-vascular toxicity in the local population: are we doing enough?

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Introduction: Sunitinib is an oral chemotherapy consisting of a multi-target tyrosine kinase inhibitor resulting in inhibition of tumour angiogenesis and proliferation. Amongst its side effect profile are its adverse effects on cardiac function, including grade 3 hypertension (systolic >180mmHg or diastolic >110mmHg), QTc prolongation, left ventricular dysfunction and cardiac failure. Our aim was to audit local practices for cardiovascular monitoring in those patients on Sunitinib therapy.

Methods: The reference protocol adopted was the Royal Surrey Chemotherapy Protocol for Sunitinib. Patients were recruited over a 5-year period from 2010 till 2015. Data was collected from case notes, discharge summaries and transthoracic echocardiogram results. Demographics, clinical indication for Sunitinib, cardiac history and adverse cardiac events while on Sunitinib were noted. The aim was to identify those patients with a positive cardiac history or subsequent cardiac events and correlate this with cardiac imaging.

Results: 113 patients were recruited with a male to female ratio of 2.2 and mean patient age of 64 years. 84% of patients received Sunitinib for metastatic renal cell carcinoma, followed by carcinoid (5%) and gastro-intestinal tumours (5%). 56 patients (49.5%) had a documented cardiac history. Only 17 out of 56 patients (30%) had documented transthoracic echocardiography screening as per Royal Surrey Guidelines.

Conclusion: This audit highlights the need for increased awareness of cardio-toxic potential of Sunitinib and standardisation of national protocols in this regard.

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Chemicals from the quinolone and colchicine analogues cause differentiation in human acute myeloid leukaemia stem cells.

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Introduction: Acute Mycloid Leukaemia (AML) is the commonest leukaemia of adulthood and carries a dismal prognosis. One subtype of AML known as Acute Promyelocytic leukaemia (APL), was found to respond to All-Trans Retinoic Acid (ATRA) which resulted in an improved prognosis. The aim of the study was to identify a number of chemicals which cause cell differentiation in HL-60 AML cells similar to the effect of ATRA on APL.

Methods: The cells were exposed to 126 different chemicals at a concentration of 1 μM and 10 μM. The response of the cell lines was assessed using reduction of nitro blue tetrazolium (NBT) normalised to cell number by dimethyl thiazolyl diphenyl tetrazolium (MTT) assays to show differentiation marker activity/cell number. The effects at day 3 and day 5 post-incubation at 37°C were noted to assess for both monocytic and granulocytic differentiation.

Results: Of the 126 chemicals tested, 30 showed promising results. Cells exposed to these chemicals showed increased differentiation when tested using the NBT/MTT assay and compared to controls. From these 30 chemicals, those from two particular groups (Colchicine Analogues and Quinolones) appeared to be among the most effective chemicals at inducing differentiation in HL-60 AML cells.

Conclusion: Chemicals such as the Quinolones and Colchicine analogues tested during this study appear to lead to the differentiation of HL-60 AML cells. Such chemicals may, in the future, lead to a new group of oncological agents which aim to treat cancer through differentiation of cancer cells.

Disclosure: Chemicals for this study were received from STEMCHEM COST consortium CM110.

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Low Incidence of venous thromboemolism (VTE) but with high early mortality in patients with diffuse large B cell lymphoma (DLBCL) receiving rituximab based chemotherapy

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Introduction: The incidence of Venous Thromboembolism(VTE) in patients with Diffuse Large Bcell Lymphoma(DLBCL) is 8.9-12.8%[1,2]. We analysed the incidence of VTE in patients with DLBCL at our Level3 HaematologyUnit and considered the effect of VTE on survival.

Methods: The hospital electronic-results systems, patients' notes and local databases were used for data collection of patients with new onset DLBCL or grade3 Follicular Lymphoma presenting between January 2010–December 2014. The vari-