



# UNIVERSITY OF MALTA

## *The Pharmacy Department Review*

Volume 1 Issue 4

March 2009

### COMPUTER-AIDED LEARNING IN PHARMACY

Over the past years, the Pharmacy Department has always kept abreast with the changes and developments taking place in modern technology. Through information technology, teaching and learning processes are made more efficient. In addition, this technology has the potential to strengthen the classical link between scientific research and education. The Pharmacy Department is planning to introduce Computer Aided Learning (CAL) in the undergraduate course.

Prof. Lilian M. Azzopardi, Prof. Anthony Serracino Inglott and Ms. Marie Clare Zammit have recently participated in the 2<sup>nd</sup> European Workshop on Computer-Aided Learning in the Pharmaceutical Sciences which was held in Vienna, Austria between the 6-7th November 2008. The workshop focused on the use of CAL, e-learning, and in-silico learning in pharmaceutical education. Participants also had the opportunity to use the PharmXplorer online programme during a hands on session.



The Maltese delegates at the 2<sup>nd</sup> European Workshop on CAL in the Pharmaceutical Sciences (from left) Marie Clare Zammit, Lilian M. Azzopardi, Anthony Serracino Inglott.

#### Current projects/programmes:

Norbert Haider from the University of Vienna, Austria gave a presentation on **PharmXplorer**, which is an online programme for teaching

pharmacy. It provides e-learning modules for different levels and contains a database of approximately 2800 drug compounds, a medicinal plants database, a discussion forum and a learning platform.<sup>1</sup> Daniela Schuster from the University of Innsbruck discussed the use of PharmXplorer as a learning platform for an online continuing education course for pharmacists. This programme contains the course content on various topics and includes self-evaluations, an online test and certification



Steve Moss from the University of Bath, UK discussed the **Pharmacy Consortium for Computer Aided Learning (PCCAL)**. This consortium was established 17 years ago between schools of pharmacy to promote and co-ordinate the use of computers in undergraduate teaching. A virtual pharmacy college designed for pharmacy students, faculty and practicing pharmacists, providing access to a variety of educational resources can be accessed on [www.collegeofpharmacy.com](http://www.collegeofpharmacy.com). Resources include a lecture theatre, library, CAL learning centre, museum, herb garden and a poster and conference hall.

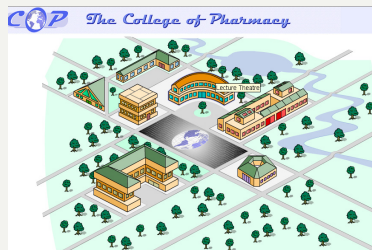
Sebastian Polak from Simcyp Ltd, UK discussed the **Simcyp Virtual**

**Campus**. This provides a platform for modelling and simulation of drug absorption, distribution, metabolism and excretion (ADME) in virtual populations. This is used by 9 of the 10 top pharmaceutical companies worldwide<sup>2</sup>, thus bridging academia with the pharmaceutical industry.

The **European Centre of Pharmaceutical Medicine (ECPM)** course is a Postgraduate Programme established in 1991. The programme director, Dr. Annette Mollet explained that the programme applies the concept of hybrid learning. This combines onsite learning and e-learning elements.

Gerhard F. Ecker from the Department of Medicinal Chemistry at the University of Vienna gave an overview on Europin. **Europin** is a European Pharmacoinformatics Initiative that aims at developing a joint PhD programme by applying IT in the Pharmaceutical field.

These programmes promote a profound understanding of complex scientific facts and processes by means of visualisation. The user can view graphics, animations and videoclips in addition to written material and perform self assessments thus improving the learning process.



The virtual online college of pharmacy

#### References:

- Haider N. 2<sup>nd</sup> European Workshop on Computer-Aided Learning in the Pharmaceutical Sciences. [Online]. 2008 [2008 Dec 27]; Available from: URL:<http://merian.pch.univie.ac.at/eufeps/workshop2008/>
- Simcyp real solutions for virtual populations. [Online]. 2008 [2009 Jan 7]; Available from: URL:<http://www.simcyp.com/>

This year's Pharmacy Student's Symposium is going to be held between the 9th and the 13th March 2009 at the Institute of Healthcare Auditorium, Mater Dei Hospital. For the detailed programme visit the Department's website on <http://home.um.edu.mt/>

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This newsletter is published as part of an undergraduate project carried out by Antine Vella under the supervision of Professor Anthony Serracino Inglott.

In October 2006, the first 5 post-graduate pharmacy students enrolled for the MSc in Medicine & Surgery held by the Pharmacy Department. Below are the answers to 10 preset questions made to two students who attained a distinction in the subject.



Alison Anastasi

1) A new 15 months-course, with a specialization – quite enticing! My sister played the big part since she succeeded in convincing me to go for it. My current job is that of a hospital pharmacist at Mater Dei Hospital. I chose this course to extend my skills in the clinical aspect of pharmacy and at the same time to keep my horizons wide open as regards industrial pharmacy and pharmacoeconomics.

2) Being part of the first group of students engaged in this new course is an honour. We have been through a wonderful and rather engaging experience and all of us did well. I can say that it is quite an achievement!

3) When I placed foot in this course I never thought that although restricted with guided ECTS we were going to be free to explore our initiatives and opinions. We had interactive sessions with both local and foreign experts. The specialization was the best part - I went from being a student, to a tutor both locally and internationally, involved in versatile practical modules, and much more.

4) The MSc course was demanding and great effort had to be invested in time management. Suiting lecture time both with lecturers and fellow students was quite a task – however, it was successful most of the time. Personal sacrifices played an important role for the success.

5) I can say that it was not easy trying to cope with work and study but as I said before I invested in time management.

6) The course focused on industry, pharmacoeconomics and on the clinical setting besides self-management and management tips which are needed in any kind of work setting. Lectures presented were the ignition; however, with the

guidance of our module supervisors, and our initiative we managed to be creative, innovative and rather pioneers in our results. In my opinion the duration was just perfect.

7) Pharmacists have to keep in mind their love for the profession, leaving an open mind to learn the various aspects of pharmacy and specialize in a topic of their particular interest, with the hope that stakeholders will consider their achievements.

8) There is no doubt that this degree enriched my profession. As regards career opportunities, it depends where one is working. I am quite a positive person, and I believe that it will open doors to innovative opportunities.

9) Whatever I do in life I never regret. I know that every target I reach is a new stimulus for my future. I sincerely hope that the pharmacy world discussed in conferences and other meetings at international level will one day reach our shores. Yes, I feel that I should promote this course. It is a high level standard course held locally.

10) I did it, and now it is your turn. Good luck to all B. Pharm (Hons.) students especially the new graduates – Congratulations! Think positive, study and believe in yourself. Everyone can manage to succeed – it is a matter of willingness, responsibility and maturity! MSc in Pharmacy presents an opportunity for students who want to gain specialist knowledge in a short well-organized period of time. The course has a direct impact on how pharmacists can advance, redirect or expand their careers.

### Questions

- 1) What/who motivated you to enter this course?
- 2) How did you feel, knowing that you were the first group of students engaging in this course?
- 3) What was your idea of the course? Was it different from what you expected?
- 4) How do you describe the MSc course? (Difficult, demanding etc..)
- 5) Did you find it hard to cope with work and study?
- 6) Was the course too short/ too long for the material covered?
- 7) What do pharmacists have to keep in mind in order to succeed in such a course?
- 8) Do you believe that your career opportunities will increase having this degree?
- 9) If you were to go back in time will you engage in this course?
- 10) What are your final comments after having succeeded in this course?



Karl Bartolo

1) After completing my first degree in Pharmacy, I was looking forward to starting a Masters course related to the Pharmaceutical Industry, my main area of interest. At the same time I wanted to start gaining some work experience in this sector, so I took up a post as a Quality Assurance Officer within a pharmaceutical manufacturing facility. Combining a Masters course with a full-time job is not the easiest of tasks, and I was finding difficulty in identifying a course which would allow me to do both. The MSc. Pharmacy course offered an excellent compromise, in that it was intentionally structured to incorporate one's daily work experience as a core element of its curriculum, making it tailor-made for my needs.

2) With no previous course experience, there was no way of knowing the road ahead, and we had to be prepared for the inevitable teething problems. However it all turned out well in the end, giving us the added satisfaction that we had contributed positively to the development of the course.

3) The course aligned very well with my expectations. It was rich in content and well-balanced, efficiently combining all aspects of pharmacy, but at the same time allowing specialisation in one particular area of interest.

4) One would expect any Masters degree to have a substantial level of difficulty, and this MSc. course was no exception. Nonetheless, it was manageable and challenging in the right ways.

5) I can't say it was easy, but the course curriculum allowed

for proper time allocation between work and study, allowing me to perform both proficiently.

6) The course duration was adequate and suitable for the material covered.

7) Even though the main focus of every student would be his/her specialization subject, one should not take the other modules lightly. Different aspects of Pharmacy are inter-related and all subjects covered in this course will benefit the students in helping them take a more holistic approach towards work within their respective sectors.

8) I am confident that this degree will enhance my career opportunities. However, most important of all, it has enriched my work knowledge and contributed positively to my current job position.

9) Definitely!

10) This course is an excellent choice for anyone who would like to combine work with studying. It has been a learning-rich experience and I strongly recommend it to all Pharmacists!

***Congratulations to Ms. Anastasi and Mr. Bartolo on their well-deserved achievement. Congratulations are extended to Ms. Romina Briffa, Ms. Chantel Ellul and Mr. Owen Farrugia who successfully completed the course.***

## The research spot- Parkinson's Disease

### Introduction

Parkinson's disease is a progressive neurological condition mostly affecting movement. It is named after Dr James Parkinson (1755-1824), the London doctor who first identified the condition in 1817. Notwithstanding the progress made in both medicine and research there is as yet, no cure. The Malta Parkinson's Disease Association (MPDA) was founded with the aim of providing support and ease the burden on the patients and the carers. For more information on the association visit the website:

<http://www.maltaparkinsons.com/>



Actor Michael J. Fox (right) with former boxer Muhammed Ali (left), both affected by Parkinson's Disease.

Fox is the founder of the Michael J. Fox Foundation for Parkinson's Research with the aim to find a cure for Parkinson's Disease and to develop improved therapies for those affected by the disease.

### Previous local studies on the disease

A review of the parkinsonian syndrome and its treatment in Malta was a study conducted by Simone Farrugia in the year 1990. In the population studied, the incidence of the disease was higher for males than for females, the ratio being 73%:27%. Females tend to manifest the severe form of the disease compared to males. The most prevalent type of parkinsonian syndrome was found to be the idiopathic form with an occurrence of 59%, followed by drug-induced parkinsonism (15%). As regards to the physical disability inflicted by the disease (excluding patients with drug-induced parkinsonism), 38% were dependent on the nursing staff, 28% were semi-dependent while 34% were independent. Regular physiotherapy sessions have proven to help in this respect. The main drugs used to treat Parkinson's disease were L-dopa-carbidopa and/ or anticholinergic drugs. The side-effects of which were found to reduce the effectiveness of the treatment.

Considering only the daily antiparkinsonian medication for the year 1989, it was established that 379 patients suffered from the disease in the Maltese population. The average annual incidence rate for Malta between 1979 and 1988 was estimated to be that of 9 parkinsonian patients per 100,000 people.

In 1998, Boris Kandinov completed the study on *Late complications of long term Parkinson's disease and its association with anti-parkinsonian treatment*. The objectives of the study were:

⇒ To evaluate the relationship between antiparkinsonian medications and late complications of Idiopathic Parkinson's Disease.

⇒ To compare the effectiveness of anti-parkinsonian medication on disease progression in parkinsonian patients at St.Luke's Hospital (Malta) and Tel-Aviv Medical Centre (Israel).

The results from the Tel-Aviv study indicated that motor fluctuations, dyskinesias, freezing of gait, dementia, depression and psychoses were significantly related to disease severity. In the younger age group (<59years) disease progression was mostly manifested with motor complications whereas in the older age group (>59years), disease progression was associated with behavioural complications. In Malta, the mean age of onset and the mean duration of the disease were found to be higher than that in Tel-Aviv. The percentage of patients in Malta with symptoms such as dystonia and dyskinesia was higher than expected. Otherwise the percentages of other symptoms such as dementia and depression were as expected.

Recently in the year 2008, Janis Vella presented the study entitled *Hospital pharmacist's intervention in Parkinson's disease*. The aims of the study were:

⇒ To assess the prevalence of sleep disorders in the elderly Parkinson's disease patients.

⇒ To analyse the type of sleep disorders and related factors.

⇒ To perceive the patient compliance to their medication.

⇒ To see whether the patients adopt sleep hygiene measures.

From the investigations carried out, it was established that:

⇒ 88% of the patients suffered from sleep disorders, the most prevalent being nocturia<sup>1</sup> with 61%.

⇒ 79% of the patients were fully compliant to their medications.

⇒ A good number of patients followed good sleep hygiene practices.

⇒ Gender, age and level of education all influence the prevalence of the disease. 58% of the patients involved in the study were males and 42% were females. The overall mean age for this population of patients was 74years. All patients studied obtained some form of education ranging from primary education (36%) to tertiary education (2%). All patients had a good mental score test.

⇒ On average, every patient was on 6 different types of medications including medications for other comorbidities such as hypertension and diabetes mellitus. Co-careldopa (Sinemet®) and pergolide (Celance®) were the two most commonly used anti-parkinsonian medications.

### Current project

Currently Akram Shueb, a third year pharmacy student is undertaking a similar study entitled *Pharmacist intervention in the management of Parkinson's disease*. The objective of the study is to develop and implement a pharmacist intervention plan for the management of patients with Parkinson's disease in an out-patient setting.

<sup>1</sup> Excessive urination at night.

*"I love the irony. I'm perceived as being really young and yet I have the clinical condition of an old man"*  
- Michael J. Fox



Illustration of gait disturbances in Parkinson's disease by Sir William Richard Gowers from A Manual of Diseases of the Nervous System, 1886

The projects referred to in this newsletter are carried out under the supervision of members of the academic staff of the Department of Pharmacy with the collaboration of other academic staff from various faculties and institutes in the University including other departments in the Faculty of Medicine and Surgery. The Department of Pharmacy is fortunate to have such an expert collaboration from so many academics and recognises such distinguished contributions

### References:

Farrugia S. A review of the parkinsonian syndrome and its treatment in Malta [dissertation]. Msida (Malta): University of Malta.; 1990.

Kandinov B. Late complications of long term Parkinson's disease and its association with anti-parkinsonian treatment [dissertation]. Msida (Malta): University of Malta.; 1998.

Vella J. Hospital pharmacist's intervention in Parkinson's disease [dissertation]. Msida (Malta): University of Malta.; 2008.

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This year, allergies  
do not cause drowsiness<sup>1</sup>

**NEOCLARITYN**  
DESLOCLARITADINE

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**NEOCLARITYN tablets / syrup**

**DESCRIPTION:** Each NEOCLARITYN Tablet contains 5.0mg of desloratadine. Each 1ml of NEOCLARITYN Syrup contains 0.5mg of desloratadine. **ACTIONS:** Desloratadine is a non-sedating long-acting histamine antagonist with potent selective peripheral H<sub>1</sub>-receptor antagonist activity. Desloratadine has demonstrated anti-allergic, antihistaminic, and anti-inflammatory activity. **INDICATIONS AND USAGE:** NEOCLARITYN Tablets/Syrup is indicated for the rapid relief of symptoms associated with allergic rhinitis, such as sneezing, nasal discharge and itching, congestion/stuffiness, as well as ocular itching, tearing and redness, itching of palate and coughing. It is also indicated for the relief of symptoms associated with chronic idiopathic urticaria such as the relief of itching and the size and number of hives. **DOSEAGE AND ADMINISTRATION:** Tablets: Adults and adolescents (≥12 years of age): One NEOCLARITYN 5mg film-coated Tablet once-a-day, regardless of mealtime. For oral use. Syrup: Children 1 through 5 years of age: 2.5ml (1.25mg) NEOCLARITYN Syrup once-a-day with or without a meal. Children 6 through 11 years of age: 5ml (2.5mg) NEOCLARITYN Syrup once-a-day, with or without a meal. In adults and adolescents (12 years of age and over): 10ml (5mg) NEOCLARITYN Syrup once-a-day, with or without a meal. **DRUG INTERACTIONS:** No clinically relevant interactions with NEOCLARITYN were observed in clinical trials. There was no effect of food or grapefruit juice on the disposition of desloratadine. NEOCLARITYN taken concomitantly with alcohol did not potentiate the performance impairing effects of alcohol (see section on pharmacodynamic properties). **ADVERSE EFFECTS:** In clinical trials in a range of indications including AR and CIU, at the recommended dose of 5mg daily, undesirable effects with NEOCLARITYN Tablets were reported in 3% of patients in excess of those treated with placebo. The most frequent adverse events reported in excess of placebo were fatigue (1.2%), dry mouth (0.6%), and headache (0.6%). In clinical trials in a pediatric population, NEOCLARITYN syrup was administered to 246 aged 6 months to 11 years. The overall incidence of adverse events in children 2 through 11 years of age was similar for the Neoclarityn Syrup and the placebo group. **CONTRAINDICATIONS:** Hypersensitivity to the active substance or to any of the excipients or to loratadine. **PRECAUTIONS:** Effects on ability to drive and use machines: No effects on the ability to drive and use machines have been observed. **USAGE DURING PREGNANCY AND LACTATION:** No teratogenic or mutagenic effects were observed in animal trials with desloratadine. Since no clinical data on exposed pregnancies are available with desloratadine, the safe use of NEOCLARITYN during pregnancy has not been established. The use of NEOCLARITYN during pregnancy is therefore not recommended. Desloratadine is excreted into breast milk, therefore the use of NEOCLARITYN is not recommended in breast-feeding women. **OVERDOSSAGE INFORMATION:** In the event of overdose, consider standard measures to remove unabsorbed active substance. Symptomatic and supportive treatment is recommended. Desloratadine is not eliminated by haemodialysis; it is not known if it is eliminated by peritoneal dialysis. **HOW SUPPLIED:** NEOCLARITYN 5mg Tablets: boxes containing 30 tablets. NEOCLARITYN Syrup 0.5mg/ml in bottles of 100ml. **STORAGE:** Tablets and Syrup: Do not store above 30°C. Store in the original package. Marketing Authorisation Holder: SP Europe, Rue de Solfero 73, B-1160 Brussels, Belgium

<sup>1</sup> - Schering Plough Summary of product characteristics.

Before prescribing please read full prescribing information.  
Full prescribing information is available from local representatives of MAH:  
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