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DEVELOPMENT OF AN APPLIED COURSE IN BIOCHEMISTRY FOR PHARMACY STUDENTS

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INTRODUCTION

Students reading for a Bachelor of Science in Pharmaceutical Sciences at the Department of Pharmacy at the University of Malta follow a compulsory study unit in biochemistry.

The study unit consists of 4 ECTS and is delivered via lectures during the second year of studies.

AIM

To update the biochemistry study unit to reflect an approach to integrate basic scientific concepts with the application to patient conditions and pharmaceutical aspects.

METHOD

The principal topics to be covered in the study unit were identified and the material for the lectures was developed by pharmacist academic staff who could relate the scientific aspects to relevant aspects in pharmacy.

RESULTS

Topics included were:

1) Physiological processes covering inflammatory reactions, cancer, cardiac signalling, fluid and electrolyte balance and aspects of toxicology
2) Metabolic pathways including endocrine control, lipid metabolism, carbohydrates
3) Neurotransmitters and pharmacogenetics

The topics were delivered through lectures with clinical examples so as to support students to grasp the fundamentals and apply them within pharmaceutical contexts (Table 1). The sessions were delivered by nine members of staff providing for wide experience-base.

Table 1: Examples of how the science of biochemistry was applied

Topic	Applications
Endocrine control	Thyroid disease, Cushing's disease, blood glucose testing, osteoporosis
Lipids	Lipid profile testing, liposomes for drug delivery
Inflammatory conditions	Rheumatoid arthritis
Toxicology	Enzyme inhibition, mutagenesis, carcinogenesis
Biochemical pathways	Psychopharmacotherapy, carcinogenesis

CONCLUSION

The revised study unit presents the scientific foundations merged with the implications for practice and is an attempt to help students break the silos in the teaching model.

Assimilating basic scientific principles within clinical sciences provides an example of how students will be putting their competences to use in their pharmaceutical career.