

A RETROSPECTIVE ANALYSIS OF PHARMACIST-DRIVEN THERAPEUTIC DRUG MONITORING CONSULTING SERVICES AT A LARGE PRIVATE HOSPITAL

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INTRODUCTION

- Paracelsus, a famous German-Swiss physician once said "All things are poison and nothing is without poison, only a dose makes a thing not poison."
- Management of dosing and therapeutic effect may be done by dosing as per body mass, adjustments based on clinical response or lab monitoring such as lipid levels for patients on statins.
- Therapeutic drug monitoring (TDM) is a concept that individualises drug dosage such that plasma drug concentration may be maintained within a certain target range.



- Most drugs have a large degree of safety and therefore do not require a rigid individualisation of the particular dosage regimen
- Some drugs require specialised monitoring due to patient PK variability. These are the drugs that may be targeted for TDM

AIM AND OBJECTIVES

- Although drug levels were requested frequently by prescribers at the study site, little collaboration existed between the doctor and pharmacist to optimise dosing.
- The aim of the study was to analyse the impact of TDM consulting services in a private hospital setting.
- The objectives were to quantify dose adjustment recommendations based on TDM services, doctor acceptance thereof, and to identify trends in terms of rejection of interventions.



METHODS

Study design:
Retrospective descriptive case report method of analysis

Study site:
386 bed multi-disciplinary private healthcare institution in Pretoria

Study period:
May 2019 to March 2021

Data collection:
Review of all TDM calculations, assessments and recommendations – information transferred to an Excel spreadsheet and analysed

All adult patients on aminoglycosides, vancomycin, valproic acid and phenytoin were included. Patients < 18 years of age were excluded



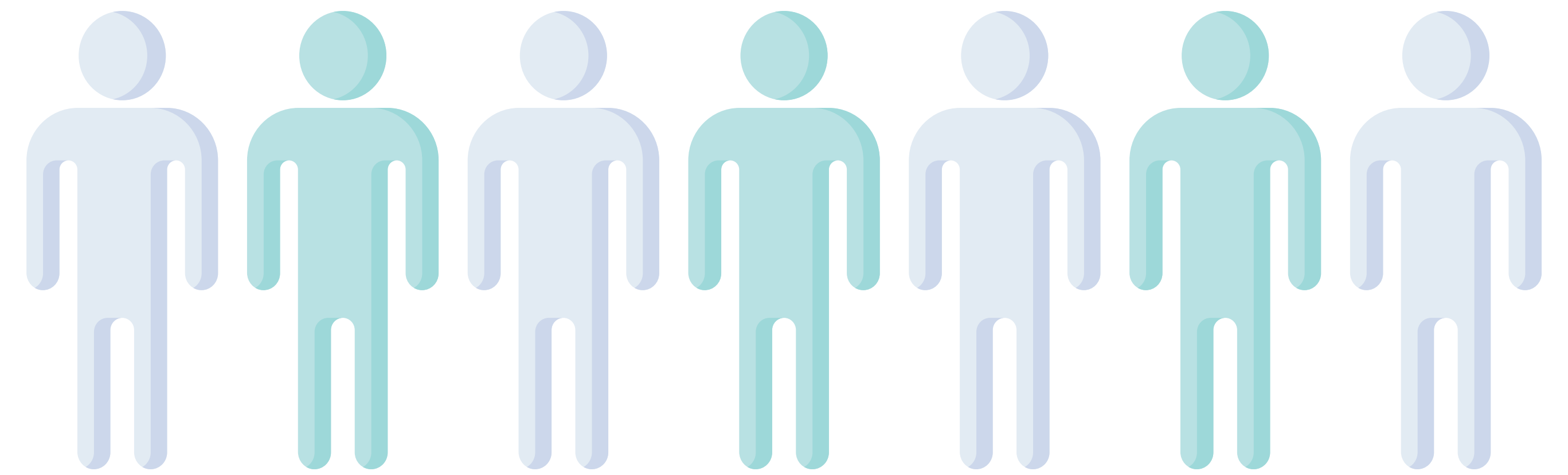
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RESULTS

A total of n=77 patients were included in the study

Therapeutic drug monitoring services resulted in 64% of cases requiring dose adjustments



Prescribers accepted dose adjustment suggestions in 63% of instances

All gentamicin- and vancomycin- related suggestions were accepted

Most (92%) of interventions on phenytoin were accepted, 90% on amikacin and 66% on valproic acid

DISCUSSION AND KEY LEARNINGS

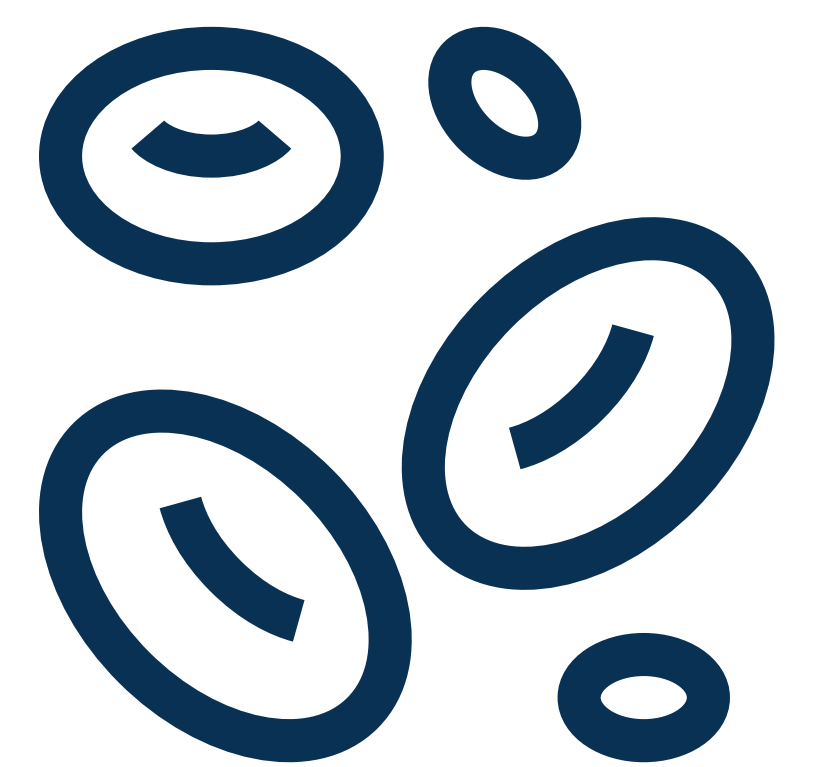
When TDM services were first initiated, the following challenges were identified:

- Incorrect timing of blood draws by the phlebotomist.
- Incorrect timing of drug administration and failure for necessary levels to be requested.
- Buy in from prescribers was initially challenging.
- There were instances where laboratory errors were suspected but could not be proven.

The key lessons learnt from this study:

- Always understand the TDM calculation you are performing.
- Clinical assessment of the patient is as important as performing the calculation.
- Interpretation of the TDM calculation and implications of possible recommendations is key.
- Consultation with a pharmacokineticist when in doubt is always advised.
- A team approach is imperative for a successful hospital TDM program.

Could a different image be selected here - these look like platelets, maybe the conclusion image here and a "Team image at the conclusion section?"



CONCLUSION

- This study demonstrated the positive impact of the pharmacist in therapeutic drug monitoring within a multidisciplinary team.
- This study highlighted the importance of cross-functional collaboration to optimise dosing without harm.
- The high acceptance of dose recommendations highlights doctor acceptance of clinical pharmacists as part of the multidisciplinary team.



ACKNOWLEDGEMENTS

A structured onboarding programme for new recruits could provide the necessary support and prepare professional nurses to become accountable and safe nursing practitioners. Prior research has shown the importance of onboarding in the engagement and retention of nurses, particularly evidence based onboarding.

*** This is not my acknowledgements - I think it belongs to one of the nursing projects