

**“RETROSPECTIVE STUDY: FACTORS THAT CONTRIBUTE TO THE
VALPROIC ACID AND PHENYTOIN CONCENTRATION
DIFFERENCES IN PATIENTS OF HOSPITAL SULTAN ABDUL
HALIM, KEDAH.”**



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and Phenytoin Concentration Differences in Patients of Hospital
Sultan Abdul Halim, Kedah.”**

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ABSTRACT

In Malaysia, therapeutic drug monitoring (TDM) service was started in the 1980s. Since then, the number of hospitals that offer the service has increased. Therapeutic drug monitoring aims to promote optimum drug treatment by maintaining serum drug concentration within a therapeutic range. The most common reason for using a serum drug level as a guide is to provide additional information to be used in conjunction with other clinical data to assist in determining patient status. The focus of this study is to find the factors that may contribute to the differences of drug concentration in patients of Hospital Sultan Abdul Halim. The drug chosen were valproic acid and phenytoin. The therapeutic range is 50 -100µg/ml (seizure) and 50 - 125µg/ml (bipolar) for valproic acid while for phenytoin is 10 – 20µg/ml (adult and paediatric). A total of 30 patients were evaluated for each drug using therapeutic drug monitoring records which had been selected randomly according to a certain criteria. Patient's data such as name, identification number, age, gender, race, dose taken, results of drug concentration for two time intervals, smoking status, and any concurrent medications taken were recorded properly. The drug concentration was analyzed using Statistical Package for the Social Sciences (SPSS) 22, Microsoft Office Excel 2007 and Microsoft Office Word 2007. Overall, our findings showed that smoking status of patients taking valproic acid and the gender of patients taking phenytoin affect serum drug concentration. Other factors such as race, concurrent medication, disease state and age do not show significant results. Number of samples collected may be affect the final results obtained. Overall, this study help us in understanding the rationale used of therapeutic drug monitoring service and the factors that may contribute to the serum drug concentration.

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