3837260 PYCP/M : MAJOR: CLINICAL PHARMACY; M.Sc. in Pharm. (CLINICAL PHARMACY)

KEY WORD : DRUG-DRUG INTERACTION/ CLINICAL MONITORING/ THEOPHYLLINE

KOWIT JONGJAREARNPRASERT: DRUG INTERACTION MONITORING IN MEDICAL WARDS AT LERDSIN HOSPITAL. THESIS ADVISOR: SUVATNA CHULAVATNATOL, Ph.D., CHALERMSRI PUMMANGURA, M.S., JAIVAN TANAMAI, M.D., Thai Board of Internal Medicine. 132 p. ISBN 974-661-624-2

The objectives of this study were to determine the incidence of potential drug-drug interaction (D-DI) in patients admitted in male and female medical wards at Lerdsin Hospital and to assess the incidence of D-DI involving theophylline by monitoring serum theophylline concentration. Data collection was performed by daily review of patients' medications and if patients received theophylline, serum theophylline determination was also performed. Monitoring process would be stopped if patient died, was discharged or was referred to other wards. Four hundred thirty-seven episodes of potential D-DI were detected in 225 out of 450 patients. The incidence of potential D-DI was thus 50.0 %. Furthermore, 4 episodes of adverse reaction due to D-DI in 4 patients were detected. Therefore, the incidence of actual D-DI was 0.9 %. The object drugs commonly found in the study were ferrous salts, theophylline, digoxin and isoniazid. The precipitant drugs commonly found were aluminium hydroxide and/or magnesium hydroxide containing antacids, furosemide, H_2-receptor antagonists (particularly cimetidine and ranitidine) and rifampin. These potential D-DIs were classified as potential pharmacokinetic D-DIs (73.5 %) and pharmacodynamic D-DIs (26.5 %). Most of the potential pharmacokinetic D-DIs occurred in absorption (63.8 %) and elimination process (31.2 %). Most of the potential pharmacodynamic D-DIs occurred via indirect receptor effect (62.1 %) and via fluid/electrolyte disturbance effect (33.6 %). It was found that 69.5 %, 24.0 % and 6.5 % of potential pharmacokinetic D-DIs were in minor, moderate and major severity of clinical significance, respectively whereas 12.9 %, 61.2 % and 25.9 % of potential pharmacodynamic D-DIs were in minor, moderate and major severity of clinical significance, respectively. The common potential D-DIs which could contribute to danger included isoniazid vs rifampin, digoxin vs furosemide, digoxin vs hydrochlorothiazide, heparin vs aspirin, low molecular weight heparin vs aspirin and amikacin vs ceftazidime. The incidence of potential pharmacokinetic D-DI of theophylline was 7.3 % as calculated on the basis of total number of patients in the study and 11.0 % as calculated on the basis of potential D-DIs detected in the study. Clinical significance of minor severity was found in 60.4 % of these potential pharmacokinetic D-DIs whereas 39.6 % were of moderate severity. Terbutaline was the most common precipitant drug found in potential pharmacokinetic interaction with theophylline, but the clinical significance was in minor level.