

**Potential drug-drug interactions in the prescriptions of patients attending medical clinics of Teaching Hospital Jaffna**

Kajaniya V<sup>1</sup>, Henola R<sup>1</sup>, Gamage NGAA<sup>1</sup>, Wijesiril RGHA<sup>1</sup>, Fernando RHS<sup>1</sup>, Kumar R<sup>2</sup>, Navaratinaraja TS<sup>3</sup>

<sup>1</sup>*Faculty of Medicine, University of Jaffna*

<sup>2</sup>*Department of Community and Family Medicine, University of Jaffna*

<sup>3</sup>*Department of Pharmacology, University of Jaffna*

**Background and Objective:** Drug-drug interactions (DDIs) refer to the effects one drug may have on another when administered together. The prevalence of potential DDIs (pDDIs) in outpatient prescriptions reported in the literature varies from 22% to 76%. This study evaluated pDDIs and their association with age, sex, and the number of drugs in prescriptions of patients attending medical clinics of Teaching Hospital Jaffna (THJ).

**Methods:** This institution-based descriptive cross-sectional study was carried out on the latest prescriptions of patients treated with at least two drugs at medical clinics of THJ. Data were collected from 150 prescriptions from each of the four medical units, using systematic sampling (n=600). British National Formulary (BNF 80) was used to identify pharmacokinetic and pharmacodynamic pDDIs; pharmacokinetic interactions were classified according to severity. The association between pDDI and age group and sex were analysed using chi-square test; p<0.05 was considered significant.

**Results:** Of 600 prescriptions, 327 (54.5%) belonged to females. The mean age was 57.5 years (SD 14.6); 44% (n=276) were in the >60 years age group. In total, 152 pDDIs were identified in 86 (14%) prescriptions; 50 (58.1%) prescriptions had one, 14 (16.3%) had two, 16 (18.6%) had three, 4 (4.7%) had four, and 2 (2.3%) had five pDDI. Among the 152 pDDIs identified, 49.3% (n=75) were pharmacokinetic and 50.7% (n=77) were pharmacodynamic interactions. Among the pharmacokinetic, 53.3% (n=40) were moderate and 46.7% (n=35) severe; no mild interactions were identified. Within the severe category, the atorvastatin and diltiazem combination (n=12) was the most frequent drug pair. Among pharmacodynamic interactions, hypotension was the most commonly observed pDDI (n=46); the most common combination causing hypotension was losartan potassium and hydrochlorothiazide (n=15). The presence of pDDI was associated with older age (p=0.01) and the number of drugs prescribed (p<0.01).

**Conclusions:** The prevalence of pDDI among patients treated at medical clinics of THJ (14%) is relatively low. Advancing age and polypharmacy may increase the risk of DDIs. Closer monitoring of high-risk patients could prevent or reduce adverse outcomes of DDIs.

**Keywords:** Potential drug-drug interactions, Polypharmacy, Teaching Hospital Jaffna