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Prevalence of potential drug-drug interactions in medical clinics at the National hospital of Sri Lanka

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Background: Drug interactions (DIs) are one of the top reasons for adverse drug reactions, leading to loss of compliance for medications. Polypharmacy has been identified as one of the top reasons for DIs. Even though DIs on prescriptions are preventable, due to different reasons they are undiagnosed, and may lead to unacceptable complications.

Objective: The objectives of this study were to identify the impact of polypharmacy on potential drug-drug interactions (pDDIs) and to assess the prevalence and types of pDDIs in the prescriptions issued by the medical clinics at the National Hospital of Sri Lanka (NHSL).

Method: An institution-based descriptive cross-sectional study was conducted at the NHSL using systematically collected 1200 prescriptions. pDDIs were classified according to type and severity using the British National Formulary (BNF-75) and MEDSCAPE software and were analyzed using SPSS version 23.

Results: The average number of drugs per prescription was 5.69, and ranged from 2 to 13. A total number of 955 (79.6%) prescriptions showed 5372 pDDIs with a mean of 4.48 ± 4.06 per prescription. Among the pDDIs identified, there were 1978 (36.8%) pharmacokinetic pDDIs, 2704 (50.3%) pharmacodynamic pDDIs, and 690 (12.8%) pDDIs due to unknown mechanisms. Among the pDDIs identified, 290 (5.4%) were severe, 3662 (68.2%) were moderate, and 1420 (26.4%) were minor interactions. The most serious interaction was between aspirin and enalapril with a percentage of 40.7% followed by the interaction between clopidogrel and omeprazole (16.6%). A percentage of 0.6% prescriptions with polypharmacy had triple whammy.

Conclusion: The percentage of pDDIs from the study was 79.6%. The majority of interactions showed pharmacodynamic mechanisms, and 5.4% of the interactions were severe. Notable interactions were seen between aspirin-enalapril, clopidogrel-omeprazole and triple whammy. Polypharmacy is a main factor that causes to increase DIs.