Prevalence of Drug-Drug Interaction in Hospitalized Patient in Basrah City; Southern of Iraq

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Abstract

Objectives: Although multiple drugs administrationmostly increase therapeutic effect, some combinations lead to adverse drug-drug interactions and increased morbidity. This study was designed to identify the types,frequency, severity, and significance of drug–drug interactions (DDIs)

Methods: This retrospective cross-sectional study was conducted from September 2018 to February 2019 in Al-Fayha'a teaching hospital in Basrah, Iraq.The data of 186 patients were collected from hospital patients case sheets. The type and significance of DDIs were analyzed using "Medscape drug Interaction Checker.

Results: At least one to two DDI are noticed in about three quarters of the patients, about 30% cases have three to nine DDIs and 15% of them have ten or more DDIs. According to their severity, there are 85 (11.5%) of serious or potent DDIs. The largest percentage of reported interactions 544 (73.5%) were moderate were close monitoring required. Out of 740documented DDIs,65.1% were pharmacodynamics and 19.5% were Pharmacokinetic interactions, in addition, there were 15.4%of DDIs due to Unknown mechanisms. Most of the major potential DDIs occur with the antibiotic ceftriaxone and blood thinning medications (heparin and warfarin).

Conclusion: The findings of this study revealed a high prevalence of drug-drug interactions in hospitalized patients particularly in patients withcardiovascular disease. Potential DDIs in this study sufficiently high to alert health care providers to pay more attentions in order to prevent or decrease their adverse effects on patients.

Keywords: *Drug interactions; pharmacokinetics drug interactions, pharmacodynamic drug interaction*

Introduction

Drug-drug interactions (DDIs) widely occur in hospitalized patient especially in patients use long list of medications.A drug interaction occurs when the pharmacological effects of the one medication alters the intensity of the other concomitant drug. When two or more medications are taken together, there is a chance of an interaction among the drugs that could be manifested as an increase or decrease in the therapeutic effects or lead to serious unwanted effects which may change the clinical outcome of the patients [1]. Polypharmacyand increased age are significant risk factor for these interactions [2,3]. DDIs generally classified as pharmacodynamic and pharmacokinetic interactions that sub-classified according to mechanism of interactions into absorption, distribution, metabolism and elimination [4].Potential DDIs are one of the preventable mechanisms ofadverse drug events and health damage [5]. Frequency of potential DDIs markedly increase in prescriptions for hospitalized patients [6]. The clinical outcome of a possible DDIs is usually unknown [7]. Studies show that the patients may expose to one or more major or moderate DDIs during hospitalization especially in internal medicine wards and the probability these interactions increased when use more than 6 drug items [8-10].Although DDIs are common in the hospitalized patients, but there are few data reporting these interactions clinically. It is difficult to remember all the known important DDIs.