ISSN: 2167-1052

Drug-Drug Interaction: Short Communication

Hadji Seydou*

Department of pathology, University of Barcelona, Spain

Abstract

Clinically significant drug-drug interactions reduce effectiveness of medicine or cause fatal adverse events. Although harmful drug interactions are preventable, cliniciansa recognition and detection of drug interactions isn't optimal. To assess prevalence, clinical significance and factors related to potential drug-drug interactions at medical ward of Ayder Referral Hospital, Ethiopia. A cross-sectional study was conducted to work out potential drug-drug interactions. a complete of 204 patientsa medical records were analyzed for drug-drug interaction using Micromedex drug interaction software. Data were analyzed using SPSS version 16.

Keywords: Drug interactions, Pharmacodynamics, Pharmacokinetics

Accepted on Jan 27, 2021

Introduction

We identified 135 interacting-combinations during a total of 266 potential drug-drug interactions (pDDIs) with a mean of 1.3 pDDIs per patient. Of these, 30.1% and 53.7% of patients had a minimum of one major and one moderate pDDIs respectively. The foremost common pDDIs involved were concurrent use of clarithromycin with simvastatin, aspirin with heparin and dexamethasone with rifampin which have contraindication, major and moderate severity respectively. There was significant association of occurrence of pDDIs with polypharmacy ($p < 0.01$).

A drug interaction may be a change within the action or side effects of a drug caused by concomitant administration with a food, beverage, supplement, or another drug.

An explanation for a drug interaction involves one drug which alters the pharmacokinetics of another medical drug. Alternatively, drug interactions result from competition for one receptor or signaling pathway. Both synergy and antagonism occur during different phases of the interaction between a drug, and an organism. For instance, when synergy occurs at a cellular receptor level this is often termed agonism, and therefore the substances involved are termed agonists.

On the opposite hand, within the case of antagonism, the substances involved are referred to as inverse agonists. The danger of a drug-drug interaction increases with the amount of medicine used. Over a 3rd (36%) of the elderly within the U.S. regularly uses five or more medications or supplements, and 15% are in danger of a big drug-drug interaction.

Pharmacodynamic interactions

When two drugs are used together, their effects are often additive (the result's what you expect once you add together the effect of every drug taken independently), synergistic (combining the drugs results in a bigger effect than expected), or antagonistic (combining the drugs results in a smaller effect than expected).

There’s sometimes confusion on whether drugs are synergistic or additive, since the individual effects of every drug may vary from patient to patient. A synergistic interaction could also be beneficial for patients, but can also increase the danger of overdose.

Both synergy and antagonism can occur during different phases of the interaction between a drug, and an organism. The various responses of a receptor to the action of a drug have resulted during a number of classifications, like "partial agonist", "competitive agonist" etc. These concepts have fundamental applications within the pharmacodynamics of those interactions.

The proliferation of existing classifications at this level, alongside the very fact that the precise reaction mechanisms for several drugs aren't well-understood means it's almost impossible to supply a transparent classification for these concepts. It’s even possible that a lot of authors would misapply any given classification.

Citation: *Hadji Seydou. Drug-Drug Interaction: Short Communication. Adv Pharmacoepidemiol Drug Saf. 2021;10(1):01-02. DOI: 10.35248/2167-1052.20.9.239*

Pharmacokinetic interactions

Modifications within the effect of a drug are caused by differences within the absorption, transport, distribution, metabolism or excretion of 1 or both of the drugs compared with the expected behavior of every drug when taken individually.

These changes are basically modifications within the concentration of the drugs. During this respect, two drugs are often homergic if they need an equivalent effect within the organism and heterergic if their effects are different.

*Correspondence to:

Hadji Seydou

Department of

pathology

University of Barcelona, Spain

E-mail: Seydou19@gmail.com