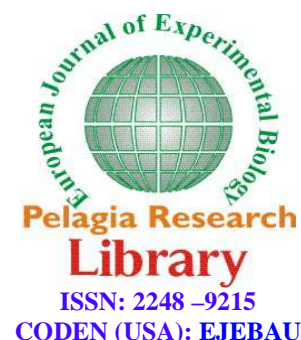




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European Journal of Experimental Biology, 2015, 5(7):22-25



## Drug-drug interactions of Rantidine with other medications used in treatment of different diseases

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### ABSTRACT

*This study was carried out on five hundred adult of in-patients of the general dedicated Hospital of Hilla (74 cases of male, 32 cases of female), and non drug-drug interaction (226 male, and 168 female) with remaining periods for in-patients in the general dedicated hospital of Hilla about (2-21days) depending on the development of the disease states and responding degree by in-patients to the treatment (recovery periods). There are significant differences ( $p < 0.05$ ) of drug-drug interaction (4.2), and don't getting for non drug-drug interaction of medications that are using in treatment of different disease (1) according to calculate of both with ( $\chi^2$ ) tabulated (3.84), and ( $53.00 \pm 21.00, 35.00 \pm 29.69$ ) in comparison with another ( $197.00 \pm 29.00, 197.00 \pm 41.01$ ) which are calculated by (SPSS 0.8 statistics). Also the results appeared significant differences ( $p < 0.05$ ) in case of drug-drug interaction show superiority of male (24.6%) in comparison with female (16%), whereas on contrary drug-drug interaction in female patients are more than male patients as follow (84%, 75.3%).*

**Keywords:** Rantidine, Drug-drug interaction, Drug-food interaction.

### INTRODUCTION

Drug Interactions are an important cause of drug related problems and this includes significant morbidity and mortality [1]. The ability to recognize and manage drug interactions is a crucial role of the pharmacist in optimizing patient outcomes. An important skill is to be able to recognize clinically significant drug interactions and provide management advice to the patient and their doctor. This advice may include discussing dose alteration strategies or alternative non-interacting drug combinations [2].

Not all drug interactions listed in texts and tables are clinically significant and individual variability in pharmacokinetics (what the body does to the drug) and pharmacodynamics (what the drug does to the body) means that even clinically significant interactions are often unpredictable in the magnitude of their effect [3]. Patients often receive several drugs at the same time. Some diseases, such as cancer and AIDS, demand the need for combination therapy, which works better than can be achieved with any one of the drugs alone. In other cases, the patient is suffering from several conditions, each of which is being treated with one or more drugs [4]. Given this situation and the many potential sites for interaction that exist within the body, it is not surprising that an interaction may occur between them, whereby either the pharmacokinetics or the pharmacodynamics of one drug is altered by another [5]. More often than not, however, the interaction is of no clinical significance, because the response of most systems

within the body is graded, with the intensity of response varying continuously with the concentration of the compound producing it [6]. Only when the magnitude of change in response is large enough will an interaction become of clinical significance, which in turn varies with the drug [7]. For a drug with a narrow therapeutic window, only a small change in response may precipitate a clinically significant interaction, whereas for a drug with a wide margin of safety, large changes in, say, its pharmacokinetics will have no clinical consequence. Also, it is well to keep in mind that some interactions are intentional, being designed for benefit, as often arises in combination therapy [8]. Clearly, those of concern are the unintentional ones, which lead to either ineffective therapy through antagonism or lower concentrations of the affected drug or, more worryingly, excessive toxicity, which sometimes is so severe as to limit the use of the offending drug or, if it produces fatality, result in its removal from the market [9].

The study was mainly focused to look for the drug interactions among medication (Rantidine and other drugs) that they were using in treatment of different diseases, according to sex (male and female) for in-patients of general dedicated hospital of Hilla.

### MATERIALS AND METHODS

The data have been collected randomly from patients' files of the statistics department in the general didactic hospital of Hilla, and these data included 500 clinical cases of in-patients (300 clinical cases of male patients and 200 clinical cases of female patients, table 1) that they were treated with different medications against different diseases. These data partook of the drug-drug interactions between a drug (rantidine) with other different medications by different routs of administrations (table 2), and were analyzed statically with SPSS 8.0 statistical package, and also the values between groups have been compared by independent sample. (P) values less than or equal to 0.05 has been evaluated as statistical significant [10].

### RESULTS

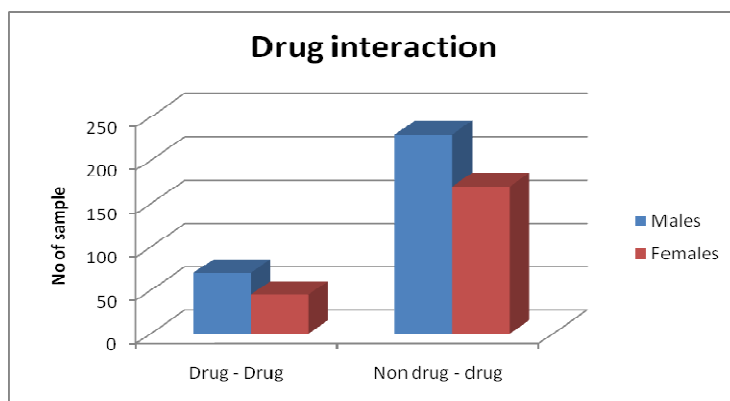
The data are collected randomly from patients' files of the statistics department in the hospital of Hilla and included 500 cases for in- patients (300 male cases, 200 female cases) and that they are treated with rantidine and other different medications (18 Nos. of drugs) via different routes of administration (15 orally, 3 intravenous injection) for treating of 16 cases of different diseases (Table 2), and the remaining periods for in-patients in the general dedicated hospital of Hilla about (2-21days) depending on the development of the disease case and responding of the in-patients to the treatment (recovery periods). The results show there are drug-drug interaction between rantidine and other medications (74 clinical cases of male patients, 32 clinical cases of female patients), and non drug-drug interaction (226 male, and 168 female). There are significant differences ( $p \leq 0.05$ ) of drug-drug interaction (4.2), and don't getting for another (1) according to calculate of both with ( $\chi^2$ ) tabulated (3.84), and ( $53.00 \pm 21.00$ ,  $35.00 \pm 29.69$ ) in comparison with another (non drug-drug interaction) ( $197.00 \pm 29.00$ ,  $197.00 \pm 41.01$ ) which are calculated by (SPSS statistics) [10]. Also the results appeared significant differences ( $p \leq 0.05$ ) in case of drug-drug interaction show superiority of male (24.6%) in comparison with female (16%), whereas on contrary drug-drug interaction in female patients are more than male patients as follow (84%, 75.3%) (Figure 1) (Table1).

Table 1: Table showing the drug interaction in in-patients according to sex.  $\chi^2$  the significant differences ( $p < 0.05$ )

Sex	No. of drug-drug interaction patients	No. of non drug-drug interaction patients	Total
Male	74 (24.6%)	226 (75.3%)	300
Female	32 (16%)	168 (84%)	200
Total	106 (21.2%)	394 (78.8%)	500

**Table 2: Table showing the medications being used with ranitidine**  
*Amp: ampoule; p.o: per os; tab: tablet; cap: capsule; i.v: intravenous; i.m: intramuscular.*

Drug	Other medications	Routes of administration	Cases
Ranitidine	Tramadol (amp.)	i.m.	Nephritis.
	Metronidazole (tab.)	orally (p.o.)	Parathyroid, adenoma, malacia.
	Paracetamol (tab.)	orally (p.o.)	Inflammation and pain in the vertebral column.
	Ampicloxacin (cap.)	orally (p.o.)	Acute bronchitis.
	Voltarine (amp.)	i.m.	Injuring in the rectum, anal wringing rupture colon intensification.
	Cephtranol (tab.)	orally (p.o.)	Acute Appendicitis.
	Mefenamic acid (tab.)	orally (p.o.)	Acute adenoma pain, presence of complex sack in the left ovary.
	Calcium (amp.)	orally (p.o.)	Multiple injuries in the eye orbit, concussion of the brain, fracturing of the submaxilla.
	Antipyretic (syrup)	orally (p.o.)	External abdominal section, extraction of the spleen, suturing of the diagram.
	Diphenhydramine (tab.)	orally (p.o.)	External clasp on the head and neck, high urorrhagia.
	Amoxicillin (cap.)	orally (p.o.)	Coetaneous drawing back of the left hand.
	Gentamicin (amp.)	orally (p.o.)	Left hand burn.
	Dexamethason (tab.)	orally (p.o.)	Cholelith, cholecystitis.
	Omeprazole (tab.)	orally (p.o.)	Hepatolith, lithotripsy.
	Ceftriaxone (amp.)	orally (p.o.)	Torsion of the testis
	Trifluoperazine (tab.)	orally (p.o.)	External clasp on the head, the cranium simple fracture, bleeding out of the meninx.
	Isopropamide (tab.)	orally (p.o.)	
	Aminophylline (amp.)	i.v.	
Prochlorperazine (tab.)	orally		



**Figure 1: Figure showing the drug – drug interaction and non drug – drug interaction between both the sex in the determined population**

## DISCUSSION

The data are collected randomly from patients' files of the statistics department in the hospital of Hilla that are drug-drug interaction of ranitidine with many different medications that are used in treatment diseases and by different intervals (recovery periods) depending on the development of the disease case and responding of the in-patients to the treatment. The (drug-drug interaction and non drug-drug interaction groups) of ranitidine and other medications have similar effect on the gender (male, female) according to (SPSS statistics) [10]. The significant differences appeared in the gender (male and female), the superiority of male on female in the drug-drug interaction group, and vice versa in the non drug-drug interaction group due to presence of indicative of effect between them. Ranitidine is the anti-secretory drugs which is H<sub>2</sub>-receptors blocking agent, and subsequently affect on the activity on another medications that have been taken via orally with it because of its effect of ranitidine on the absorption on medications from gastrointestinal tract (GIT), and then the absorption quantity of these medications are less without ranitidine [11]. The following conclusions were made after the study. There are many of drug-drug interaction of the using drugs in treatment of the different diseases for in-patients in the general dedicated hospital of Hilla. It has been found significant differences for drugs that have drug-drug interaction in comparison with non drug-drug interaction drugs. The drug-drug interaction in the male patients more than female patients and vice versa according to

percentage accident. Remaining periods are differences according to disease state, the type of drugs and capacity of responding to the treatment by in-patients in the general dedicated hospital of Hilla.

Acknowledgement: I personally thank and acknowledge Mr. Malla Sudhakar, Asst Professor, Department of Biotechnology, Indian Academy Degree College, for his constant support in the technical writing.

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