Research Article

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Drug Related Problem Occurring to the Patients in a Suburban Area

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Abstract
The present study is aimed at the drug related problems like medication errors, Irr-rational prescriptions, adverse drug reactions and drug - drug interactions occurring in sub-urban areas. A prospective study was conducted in a private medical college hospital in a suburban area in various departments like general medicine, cardiology, nephrology, neurology, and gynecology. The study was conducted for 90 days and the prescriptions were collected and various drug related problems were analyzed. Possible drug-drug interactions 50% are major drug-drug interaction, followed by 34% are moderate and 10% were minor drug interactions. Approximately 2% of the prescriptions were found to be irrational prescription like administration of their analgesics, combination of two H_2 receptor antagonist, 10% found to have medication errors, where proper dosage form, proper dosage instructions were not given. Among the adverse drug reactions which occurred maximum number came from dermatology. Clinical pharmacists are having a major role in minimizing the drug related problems.

Keywords
Drug related problems, Drug-Drug interactions, Adverse drug reactions, Irrational prescriptions.

Introduction
Drug related problem occur mainly due to multiple drug therapy, drug or dose selection, drug misuse process information regarding patient care. It also include in appropriate drug prescribing, failure to receive drug, over dosage, drug- drug interaction, adverse drug events, poor monitoring by health care professionals.[1] While highlighting the importance of drug related problems (DRPs) the drug-drug interactions, medication error, irrational prescription, and adverse drug reaction comes to prime importance. ADR due to drug over dosage (Poisoning), drug abuse and therapeutic errors. The administration of drug may result in the development of side effects, unwanted effects, and toxic effects, allergic and idiosyncratic effects.[2] Drug interaction are said to occur when the pharmacological activity of a drug is altered by the concomitant use of another drug or by presence of food drink or environmental chemicals. The drug whose activity is affected, such as interaction is called as object drug and the agent which precipitates such an interaction called as precipitant.[3] Medication error as any preventable event that may cause or lead an inappropriate medication use or patient harm while the medication is in control of the health care professional, patient or consumer. Such events may be related to professional practice, health care products, procedures and systems, including prescribing order communication, product labeling packing and nomenclature, compound distribution, administration, education, monitoring and use.[4] Some common types of medication errors are, incomplete patient information not knowing patient allergies other medicines, they are taking previous diagnosis and lab results. Miscommunication of drug orders, which can involves poor hand writing, confusion between drugs and similar names, misuse of zeros and decimal point, confusion of metric and other dosing unit and inappropriate abbreviations. Lack of appropriate labeling as a drug is prepared and repacked in to similar units and environmental factors such as lighting, heat, noise and interruptions that can distract health professionals from their medical tasks.[5]

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Objectives
The aim of this work is to study the drug related problems occurring to the patient in suburban area mainly drug related problems like medication errors, irrational prescription, adverse drug reaction and drug interaction.

Methods and Materials
This prospective study was conducted in private medical college hospital located in suburban area in these comparing different departments of medicine, pediatrics, gynecology, neurology, nephrology, pulmonology medicine, cardiology and orthopedics. This study conducted nearly 90 days after collection of prescription; they were sorted on the basis of age, sex and patient disease

wise also the drugs were classified on the basis of their pharmacological activity. After sorting out, the completeness of the prescription were studied, then the appropriateness of the dosage, medication error, illustrating correct dosage forms, strength was determined. The possible drug-drug interaction was found fount out basis on the information from micromedix. The drug – drug interaction were classified as major, moderate and minor interactions and percentage of major, moderate and minor interaction were determined. Adverse events also recorded with help of physicians if anywhere found out.[6]

Results and Discussion

Totally 143 prescriptions studied during the study period of 90 days. Among the 143, 47% were male and 53% were female patients among this 47% of male patients, maximum coming under 51-60 yrs group of patients followed by above 60 yrs group of patients, 31-40yrs group of patients and 0-10yr group of patients. Among the 53% of female patients, maximum (24%) were coming under 21-30yrs age group of patients followed by 40-50yrs and 0-10yrs of age group of patients. Around 23% of antibiotics were prescribed followed by multivitamins, analgesics were prescribed Fig.1. In case of possible drug-drug interaction 50% are major followed by 34% are moderate and 10% were minor drug interactions Fig.2. Around 2% of the prescriptions were found to be irrational prescription likewise administration of their analgesics, combination of two H_2 receptor antagonists were found Table.1. We found more adverse events in dermatology department (11%) then hematology followed by hepatotoxic, CNS, GI, obesity, immunology Fig.3-5 Above 10% found to have medication errors, where proper dosage form, proper dosage instructions were not given.

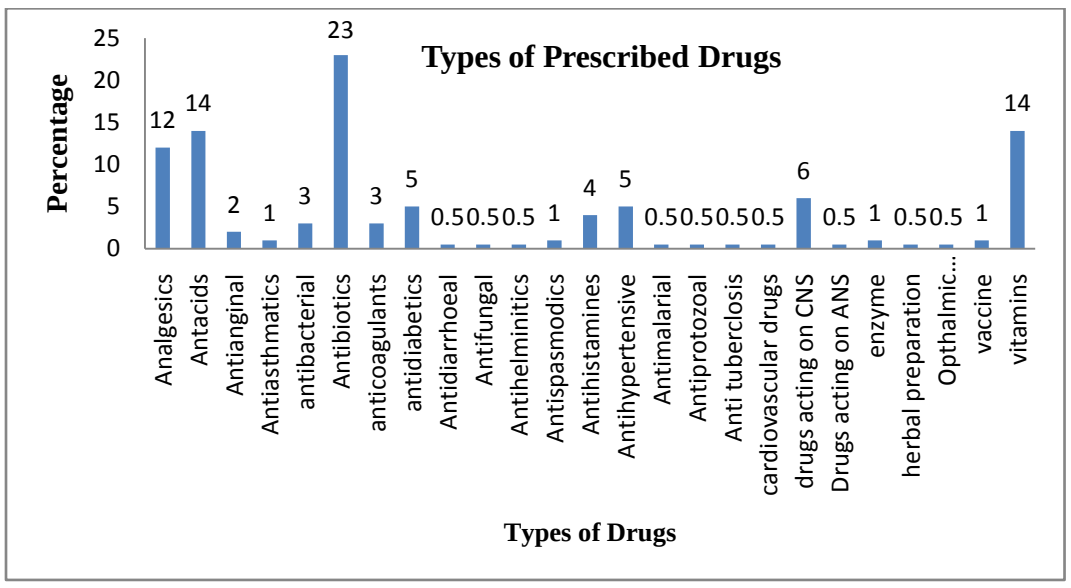

Fig. 1: Types of prescribed drugs and percentage used by the patients

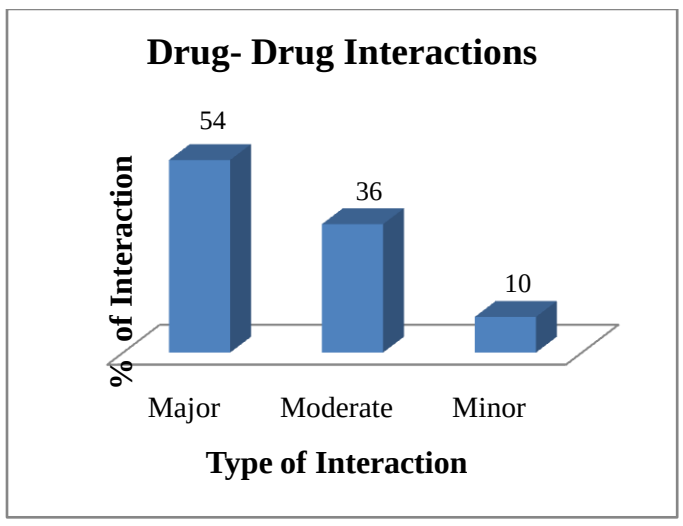

Fig.2 : Types of possible drug-drug intraction and the percentage in the prescription

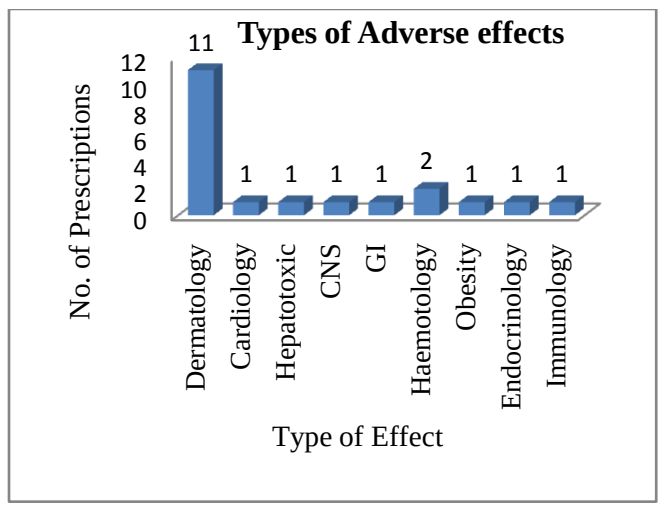

Fig.3: Types of adverse effects and the number of prescriptions

Fig.4: Adverse drug reaction in lips

Fig.5: Adverse drug reaction in neck

S.NO	DRUGS	INTRACTIONS
1.	Theophyllin & SalButamol	Increased risk of hypokalemia, If the theophylline given with high doses of ethambutol, formoterol, salbutamol and terbutalin. Ref: Bnf
2.	Ciproflaxacin & Paracetamol	Increased risk of nephrotoxicity with colistin sulphate
3.	Quinoline & Analgesic	Possible increased risk of convulsion by NASIDS
4.	β- Blockers & antidiabetics	Enhance hyhpoglycemic effect and masking the sence of hypoglycemic such as tremor
5.	Clopidogral & other anti platelet drugs	Increased risk of bleeding
6.	Nifedipine & Metformin HCl	Nifedipine may occasionally impair glucose tolerance

Table 1: Some of the Possible Drug- Drug Interactions.

Conclusion

A serious concern is needed for possible drug-drug interaction, medication errors and irrational prescriptions. Adverse drug reactions so, a proper monitoring mechanism like pharmacovigilence is an urgent need. This involves a better patient care and welfare of the community. Clinical Pharmacist can play a major role in eliminating this problem. But this needs a coordinated approach between all health care professionals.

References

1. Ramesh M and Parthasarathy G; A text book of clinical pharmacy practice; Orientlongmen; 2003, 218-35.
2. Satoskar R S,.Bhandar kar S D and Ainapure S S; Pharmacology and Pharmacotherapeutics; Popular Prakashan; 18th ed.; 2003; 36-39.
3. Brahmankar D M and Sunil.B.Jaiswal; Biopharmaceutics and Pharmacokinetics; A treatise, Vallabh Prakashan; Delhi-110088. First edition reprint 2004; 204-11
4. U.S.F.D.A; Medication errors, Aug-3; 2001. Updated june 14, 2006
5. Gilliam.M.Shenfield; Drug interaction with oral hypoglycemic drugs, *Australian prescriber* 200; 24; 8B-6.
6. British National Formulary (BNF), 4th edition, march 2002.

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