



DRUG UTILIZATION STUDY IN MEDICINE OUT PATIENT DEPARTMENT OF A TERTIARY CARE HOSPITAL IN NORTHERN INDIA: RECOMMENDATION FOR IMPLEMENTATION OF RATIONAL USE OF MEDICINE

Pharmacology

Varsha Sargwan*

Department of Pharmacology Government Doon Medical College, Dehradun.
*Corresponding Author

ABSTRACT

OBJECTIVE: To determine drug utilisation pattern in outpatient department in medicine OPD of King George's Medical University, Lucknow.
MATERIAL AND METHODS: Study was prospective, observational, and cross-sectional conducted in Outpatient Department (OPD) of medicine. Sample size was 400 according to the World Health Organization manual Study. Data was expressed as, frequency, mean \pm SD, range and percentage.
Result: After compiling the data, overall review shows average number of drugs as 5 and standard deviation with \pm 1.6. Drugs by generic name as 1%. Antibiotics prescribed are 40% and 19% drugs from essential drug list. Counters with injection prescribed are 2%. According to the data, maximum numbers of drugs were greater than four. Maximum percentage of drugs prescribed per prescription is greater than four i.e., 42% and minimum is 1% with zero number of drugs in a prescription in medicine OPD.

KEYWORDS

Rational drugs, generic name, cross sectional study, observational study.

INTRODUCTION-

Drug utilization research is defined as the distribution, prescription, marketing and use of drugs in a society, with reference to resulting medical, social and economic consequences. [1] It holds an important role in clinical practice as it forms the basis for making amendments in the drug dispensing policies. The goal of such research is to facilitate rational drug use. As it helps in developing strategies to utilize health resources in the most efficient manner, it is needed in a developing economy like India [2].

Now, a number of other terms have come into use and it is important to understand the interrelationships of the different domains [3]. These studies are important for receiving data about the patterns and quality of use, the determinants of drug use, and the outcomes of use. The WHO drug use indicators are standardized and are recommended for inclusion in effective drug utilization studies [4].

Nowadays, drug utilization is the main focus of numerous economical and medical debates in a large number of countries. [5]. Prescriptions for emergency department and indoor patient clinics were excluded [6] Antibiotic use irrationally is the main culprit to develop resistance to antibiotics [7]. Drug utilization studies are powerful tools to ascertain the role of drugs in society [8]. The indicators are standardised and used efficiently to focus problems in drug use and prioritise needs for those problems [9]. This study attempts mainly to describe the prescribing pattern and drug utilization with the WHO core prescribing indicators in Outpatient Department of medicine. [10].

MATERIALS AND METHOD-

Study was designed to be an observational cross-sectional study. Patients registered in the OPD of medicine King George's Medical University, Lucknow were randomly selected. Institutional Ethics Committee approval was obtained beforehand. Study was a cross-sectional, prospective, observational study conducted in Outpatient Department (OPD) of medicine. The sample size was kept 400 in accordance with the World Health Organization manual. Data were analysed for; WHO core indicators, total number of drugs prescribed per patient, common group of drugs used. [3]

Data was expressed as mean \pm SD, frequency, range and percentages (number in brackets are frequency). No statistical hypothesis was tested.

RESULTS-

Here, in this study four hundred prescriptions per ($n = 400$) were analysed. During this, number of drugs per prescription ranges from zero to \geq four and the average number of drugs per prescription was 5. Drugs were given in different dosage forms. Number in brackets are frequency and rest is percentage.

Table 1. Details of drug utilization based on WHO/INRUD indicators in medicine OPD n=400.

Indicators assessed	Data value
Average number of drugs per encounter	5 \pm 1.6
Percentage of drugs prescribed by generic name	1%

Percentage of encounters with an antibiotic prescribed	40%
Percentage of encounters with an injection prescribed	2%
Percentage of drugs prescribed from national essential drug list/formulary	19%

After compiling the OPD data in table 1, this is the overall review of OPD which shows average number of drugs as 5 and standard deviation with \pm 1.6. Drugs by generic name as 1%. 40% antibiotics prescribed and 19% drugs from essential drug list. Counters with injection prescribed are 1%.

Table 2 Number of drugs prescribed per prescription in medicine OPD n=400

Prescription containing number of drugs	Number of prescriptions (%)
Zero (none)	4(1%)
One	32(8%)
Two	76(19%)
Three	120(30%)
\geq Four	168(42%)
Range	0-6
Total	400 (100%)

According to the OPD data as shown in table 2, maximum numbers of drugs were greater than four. Maximum percentage of drugs prescribed per prescription is greater than four i.e., 42% and minimum is 1% with zero number of drugs in a prescription in medicine OPD. Only one drug is given with 8%. Two drugs are prescribed to the patient with 19%. Three drugs are given with 30%. Greater than four drugs are with 42%. As range is up to six drugs so maximum six drugs are prescribed. Total constitutes the sample size which is 400.

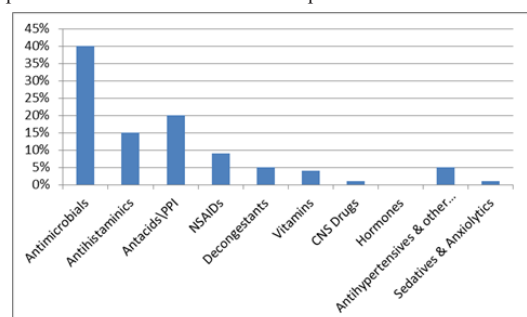


Fig.1 Different types of drug products prescribed in medicine OPD n=400

Fig.1 shows that antibiotics has maximum use with 42%. Next after antibiotics comes antihistaminics drugs with 18%. Next to that comes antacids and PPIs with 15%. NSAIDs then form the chunk with 7%. Decongestants and vitamins are next with 6% and 1% respectively. CNS Drugs constituting 1%.

DISCUSSION-

These studies are important for gaining data about the patterns and quality of use, the determinants of drug use, and the outcomes of use. This study attempts mainly to describe the present prescribing pattern and drug utilization with the WHO core prescribing indicators in medicine Outpatient Department [3].

Usual number of drugs per prescription is a significant index as it tends to measure the degree of polypharmacy. It gives possibility for review and educational intervention in prescribing practices. In this study the average number of drugs per prescription was 5, which shows over recommendation of drugs and polypharmacy to avoid risk of drug interactions [3].

The proportion of drugs prescribed by generic name was 1% which was very low unlike other studies. Maximum of the drugs were prescribed by brand name in this study, which suggests attractiveness of brands amongst the practitioners and the impact of pharmaceutical companies. They are disinclined to suggest drugs by generic name because it may result in the procurement of drugs of inconstant potency and under potent generic antibiotics which may upsurge drug resistance and inconsistency in clinical response. However, prescribing drugs by generic name makes the treatment low cost and rational as it escapes prescription writing errors and misperception of distributing of different brand names [3]. There is a need to bring variations in the prescribing practices with emphasis on generic drug prescribing and curbing polypharmacy. Some modifications need to be merged in the hospital antibiotic policy [1].

Antibiotics were recurrent and number of encounters with antibiotics was 42%. The high use of antibiotics may be due to the harshness of infections and poor hygiene in the region. Antibiotic use data are needed to identify heavy use areas and provide feedback to prescribers, to study the relationship between antibiotic use and resistance[2].

Patient's awareness of accurate dosage program confirms adherence to treatment compliance without indiscriminate use and encourages rational drug use [3].

Antibiotics constituted major part of the total drugs prescribed. Out of which 53% (212) were fluoroquinolones only and rest were prescribed as other antibiotics, nonsteroidal anti-inflammatory drugs (NSAID), and glucocorticoids.

Fluoroquinolones were the most public group of antibiotics prescribed which were similar to reports of previous studies [3]. The data have also exposed that there is a need for sentience programmes on rational prescribing of NSAIDs towards optimal therapeutics and improved patient care in India[11]. PPI since becoming available over the counter (OTC), no studies have assessed the requirement of its use[12].

Irrational use of medicines is an extremely serious global problem that is wasteful and harmful [13].

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CONFLICTS OF INTEREST-

There are no conflicts of interest.

RECOMMENDATIONS-

Use of rational and generic drugs.

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