

Drug Utilization Pattern and Safety Profile of Drugs Used in Ophthalmology Department at a Tertiary Care Hospital

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Abstract

Background: Recently conducted drug utilization studies in ophthalmology across India have reported issues of high prescribing of branded drugs, low adoption of essential drug and polypharmacy, thus creating concern regarding the rational use of drugs. There exist paucity of data in literature on the drug utilization trends from this region; therefore present study will be undertaken to analyze the prescribing pattern and drug utilization trends among the patients of ophthalmology department at a tertiary care hospital.

Objectives: To study the drug utilization pattern, safety profile of drugs in ophthalmology department.

Materials and Methods: Prospective cross-sectional observational study was conducted over a period of three months in newly diagnosed cases attending outpatient department of ophthalmology, HIMS, Hassan and the prescriptions was analyzed with WHO prescribing indicators.

Result: Out of 200 patients, Male 144 (72%) patient were more than Females 56(28%). Eye drops were the most commonly prescribed antibiotics 165 (80%), the other parameters are Average number of drugs/prescription (2.23), Percentage of drugs prescribed by generic name (76.23%), Frequency of administration mentioned was 93% and Drugs prescribed from essential drug list was 21.3% of prescription.

Conclusion: Audit evaluated the drug utilization trends in the Dept. of Ophthalmology. So physician must be more specific in their diagnosis and treatment. Overall poly-pharmacy among antimicrobial agents was noticed. Improvement in encouraging the ophthalmologists to select drugs from essential drugs list. ADRs not observed among the study population. This study will provide a database for further researches that will determine patterns of drug use in the Dept. of Ophthalmology.

Keywords: DUS, Antimicrobial agents, EDL, Generic name, Ophthalmology.

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Introduction

Drug utilization studies are major and important tools to discover the role of drugs in the society. They create a improve the socio medical and health economic and quality of life. [1] The World Health Organization (WHO) has defined drug utilization research as the marketing, distribution, prescription, and use of drugs in a society, with special emphasis on the resulting medical, social, and economic consequences.

Assessment of drug use patterns with WHO drug use indicators is becoming increasingly necessary in developing countries to promote drug rationality. Irrational and inappropriate use of drugs in health care system observed globally is a major concern. It is a major indicator for medication error and adverse drug reaction. [2-5] Doctors are the health professionals who are major responsible for

treatment and to know about their prescribing practices can contribute to the achievement of initiatives and regulations. The generated indicators in three main drug use areas viz prescribing, patient care and drug systems. [6] Under prescription of generic names due to frequent visit of the medical representatives in Hospital. And the number of drugs per prescriptions should be low. Since higher figures culminate in increased risk of drug interactions, increased hospital cost and errors of prescribing. [7] Recently in ophthalmology, there have been many drug developments and introduction of new ocular therapeutic agents. [8]

In order to improve drugs therapeutic efficacy, minimize side effects, delay development of resistance, and improve quality of life, drug utilization trends and patterns need to be evaluated

periodically. [9] The present study was conducted to investigate the drug utilization pattern in ophthalmology at a tertiary care teaching hospital.

Objectives: To study the drug utilization pattern, safety profile of drugs in Ophthalmology department

Materials & Methods:

A total of 200 Prescriptions were assessed and analysed following WHO indicators. After taking approval from Institutional Ethical committee, A Prospective, observational study was conducted in Department of Ophthalmology, Sri Chamarajendra hospital, HIMS, Hassan for the period of 3 months (June 2018 to August 2018)

Patients were explained about the study and informed consent was taken from them. In the present study, each patient was referred to as a prescription and only those drugs used for ocular disorders were included. Along with Socio-demographic data of patient. The following WHO

prescribing indicators were used in this study and were calculated using standard methods. [11]

Average number of drugs prescribed per encounter, Percentage of drugs prescribed by generic name, Percentage of patient encounters with an antibiotic prescribed. Percentage of drugs prescribed from the national EDL (Essential drug list) or the facility's formulary.

Inclusion criteria: All the patients, newly diagnosed, attending outpatient department of ophthalmology.

Exclusion criteria: Patients who denied consent, follow up cases

Statistics: Descriptive statistics was applied, data then analyzed using the statistical package for social sciences (SPSS) program version 10.

Results:

Out of 200 patients, Male 144 (72%) patient were more than Females 56(28%) in our study.

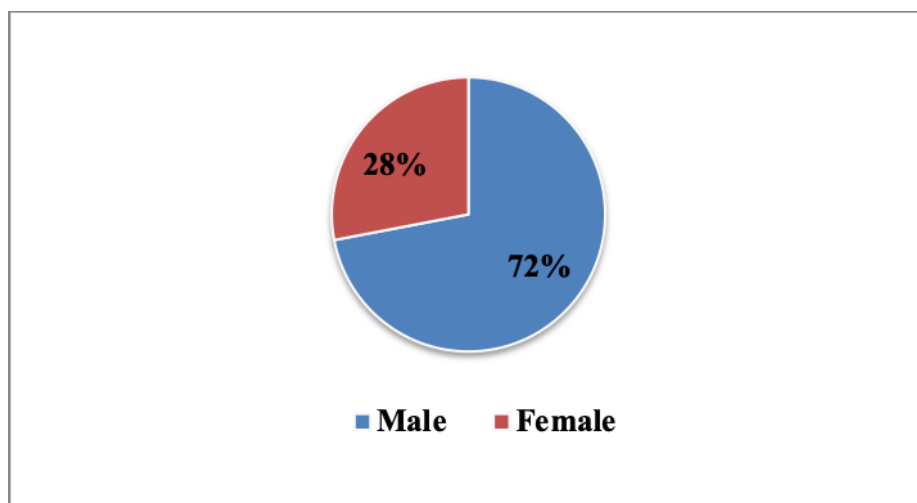


Figure 1: Gender distribution of the patients

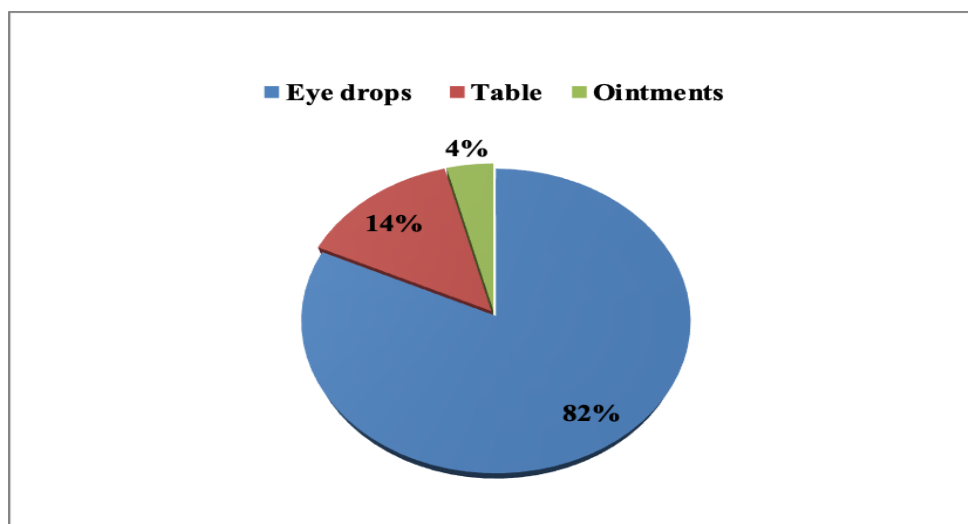


Figure 2: Dosage forms used in the dept. Of ophthalmology

The drugs were prescribed in three different dosage forms .Eye drops were the most commonly prescribed antibiotics 165 (80%), Oral tablets 28(14%), ointment 7(4%)

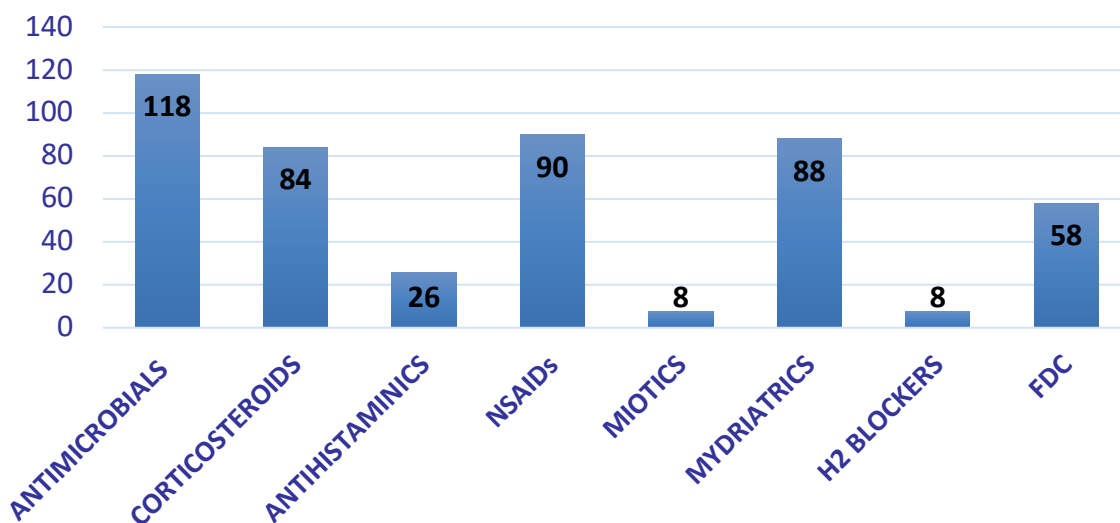


Figure 3: Classes of drugs prescribed in the dept. Of ophthalmology

Antimicrobial agents were predominantly used for ocular disorder. Followed by Non-Steroidal Anti-inflammatory agents (NSAIDs).

Tab 1: WHO Indicator

Drug utilization parameter (WHO Indicator)	Study value (%)
Average number of drugs/ prescription	2.23
Percentage of drugs prescribed by generic name	76.23%
Drugs prescribed from essential drug list	21.3%
Frequency of administration mentioned	93%
Average number of antimicrobials/encounter	1
Antimicrobials prescribed by generic name	86.44%
Antimicrobials prescribed from essential drug list	15.25%
Frequency of antimicrobial usage per patient:	1 Antimicrobial agent in 115 patients 2 Antimicrobial agent in 10 patients

Discussion

In medical world drug is a double edged weapons, because drugs are primarily used to relieve symptoms and signs. But drug themselves can prove fatal due to its adverse effects. So we have keen in prescribing, dispensing and administration of medications. Total 200 medication charts were evaluated. Male preponderance (72%) was observed. This result was similar to studies carried out by Rawah MA et al. [10] Average number of drugs/ prescription was 2.23 which fell within the range (1.49.) of reported previous studies by Jadhav PR et al (3.03). [11-12] Percentage of drugs prescribed by generic name was 76.64% which was very high compared to other studies 1-3 Drugs were predominantly prescribed in brand name 83%

(1258/1516) instead of generic name in study conducted by Banerjee I et al. [13-14]. 86.44% of antibiotics were prescribed by generic name. Percentage of prescriptions with antibiotics were 62.5% which was very high compared to other studies. [13]

In our study, 21.3% of the total drugs used were prescribed from the WHO's essential drug list which is lower than the study by Biswas NR et al (34.54%). [7] In our study 15.25% of antibiotics were prescribed from WHO's essential drug list. Frequency of drug administration recorded in 93% of the prescription which is in same range that of study by Banerjee I et al (96%). [15] One Antimicrobial agent in 115 patients, and two Antimicrobial agents in 10 patients in our study. A

study conducted by Shamsy K et al, A high percentage of patients 54.58% were prescribed at least one antibiotic, two antibiotics were prescribed in 28.57%, three antibiotics were prescribed in 15.02% and only 1.83% cases with four antibiotics were prescribed. [16]

Conclusion

Audit evaluated the drug utilization trends in the Dept. of Ophthalmology at HIMS. So physician must be more specific in their diagnosis and treatment. Knowledge-based and in accordance with the accepted patterns of treatment of ocular diseases was needed. Overall poly-pharmacy among antimicrobial agents was noticed. Improvement in encouraging the ophthalmologists to select drugs from essential drugs list. ADRs not observed among the study population. This study will provide a database for further researches that will determine patterns of drug use in the Dept. of Ophthalmology.

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