Academic Sciences International Journal of Pharmacy and Pharmaceutical Sciences

ISSN- 0975-1491 Vol 3, Suppl 5, 2011

Research Article

PRESCRIPTION TRENDS IN OPHTHALMOLOGY DEPARTMENT AT A TERTIARY CARE TEACHING HOSPITAL WITH SPECIAL EMPHASIS ON ANTIMICROBIAL USAGE

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Received: 22 July 2011, Revised and Accepted: 6 Nov 2011

ABSTRACT

Aims & Objectives: To find out the prescription trends in Mamata Medial College, Khammam in Department of ophthalmology with special emphasis on utilization pattern of antimicrobials.

Methods: Prescriptions from both OPD as well as IPD were collected and analyzed with the following parameters: Average number of drugs per prescription, Percentage of drugs prescribed by generic name, Dosage frequency and Duration of treatment, Disease distribution, Percentage of encounters with an antibiotic prescribed, percentage of drugs prescribed from essential drugs list or formulary.

Results & Conclusion: Number of drugs per prescription varied from 1 to 6 with average of 2.133. Dosage forms were recorded in 95% of prescriptions. The frequency of drug administration was recorded in 100% prescriptions whereas only 82% of prescriptions mentioned regarding duration of the treatment. Antimicrobials constituted (45.11%) the most routinely prescribed drugs among all the classes. Also most of the antimicrobials have been prescribed topically (80.55%). Thus, the systemic adverse effects can be minimized by giving the drugs topically. Ciprofloxacin was used frequently since it is cheap, safe and effective against most of the organism infecting eye. Suggestions were given to the doctors to prescribe drugs among the hospital formulary to reduce the economic burden to the patients since percentage of drugs prescribed among hospital formulary was only 62.65%.

Keywords: Prescription Trends, Emphasis on Antimicrobial usage, Drug Prescription trends.

INTRODUCTION

A prescription by a doctor may be taken as a reflection of physicians' attitude to the disease and the role of drug in its treatment. It also provides an insight into the nature of health care delivery system[1]. There has been development of many new therapeutic agents which have made it possible to cure or provide the symptomatic control of many clinical disorders. However in many circumstances drugs are not used rationally for optimal benefits and safety[2]. To improve the overall drug use, especially in developing countries, international agencies like World Health Organization (WHO) and International Network for Rational Use of Drugs (INRUD) have applied themselves to evolve standard drug use indicators[3]. Analyzing the pharmaceutical prescribing practices by health providers is one of the three drug use indicators developed to measure the rational use of drugs[4]. Eye problems are common in general practice & some of them if neglected, can lead to permanent blindness. So, an attempt was made to know the disease pattern and also prescribing practices in ophthalmology department with due consideration on antimicrobials.

MATERIALS AND METHODS

The study was carried out **at** the outpatient department of ophthalmology from January 2011–April 2011. Daily 2 hours was spent collecting the prescriptions from the patient after he underwent ophthalmology check-up & even from the IPD record. A total of 374 prescriptions were collected. These prescriptions were then analyzed by using specially designed forms to record the required information. The following parameters were given consideration.

1. Average number of drugs per prescription.
2. Percentage of drugs prescribed by generic name.
3. Frequency of administration, Duration of treatment: recorder or not?
4. Disease distribution.
5. Various classes of drug are prescribed.
6. Percentage of encounters with an antibiotic prescribed.
7. Percentage of drugs prescribed from essential drugs list or formulary.

RESULTS

Total number of prescriptions analyzed for study (Both OPD & IPD) was 374 and the total number of drugs in those prescriptions was 798. Number of drugs per prescription varied from 1 to 6 with average of 2.133. Among 798 drugs, only 32 (4.01 %) of them were prescribed by generic names. The frequency of drug administration was recorded in 100% prescriptions whereas only 82% of prescriptions mentioned regarding duration of the treatment. Disease distribution is shown in figure-1. The overall drugs prescribed were Antimicrobials-360(45.11%), NSAIDs-124(15.53%), Steroids-88(11.02%), Mydriatic / Cycloplegics-76(09.52%), Anti-Glaucoma-78(09.77%), Antihistaminics- 24(03.01%) & others-48(06.01%) and is shown in figure-2. The antimicrobials prescribed along with their dosage forms are shown in Table.1. Number of drugs prescribed from hospital formulary is 500 (62.65%)

DISCUSSIONS AND CONCLUSION

Average number of drugs per prescription is an important consideration. In our study the average number of drugs per prescription was 2.133%. Other hospital based studies in India reported 3-5 drugs per prescription[5, 6] which was higher than our study. It is preferable to keep the number of drugs per prescription as low as possible since higher figures lead to increased risk of drug interactions, adverse effects and increased cost to the patient. Hence, this study showed a remarkable restraint on prescribing and an awareness to avoid polypharmacy and irrational drug combinations. Antimicrobials were the most routinely prescribed drugs among all the classes 360 (45.11%). Also most of the antimicrobials have been prescribed topically (80.55%). Thus, the systemic adverse effects can be minimized by giving the drugs topically. Antimicrobials which were prescribed were used either post operatively or to treat various eye infections. The high use of antimicrobials reflects prevalence of various infections in our region. Appropriate selection of antibiotic and route of administration is dependent on the patient's symptoms, the clinical examination and the culture/sensitivity results. In our hospital antimicrobials were prescribed empirically (97%) based on the likely pathogen, the available drugs & the severity of the condition.

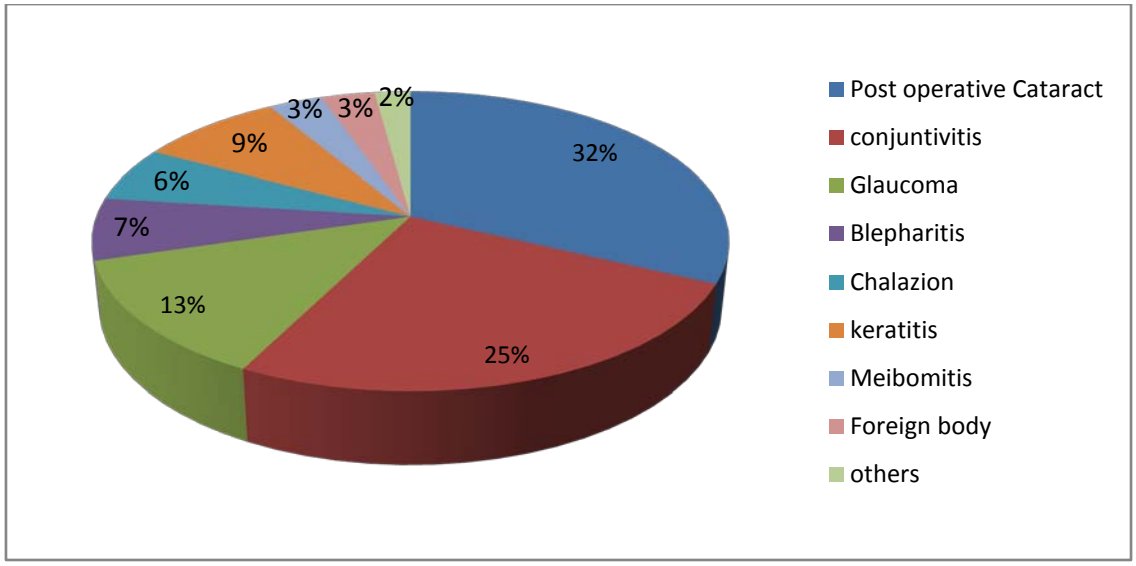

Fig. 1: Disease distribution in ophthalmology department

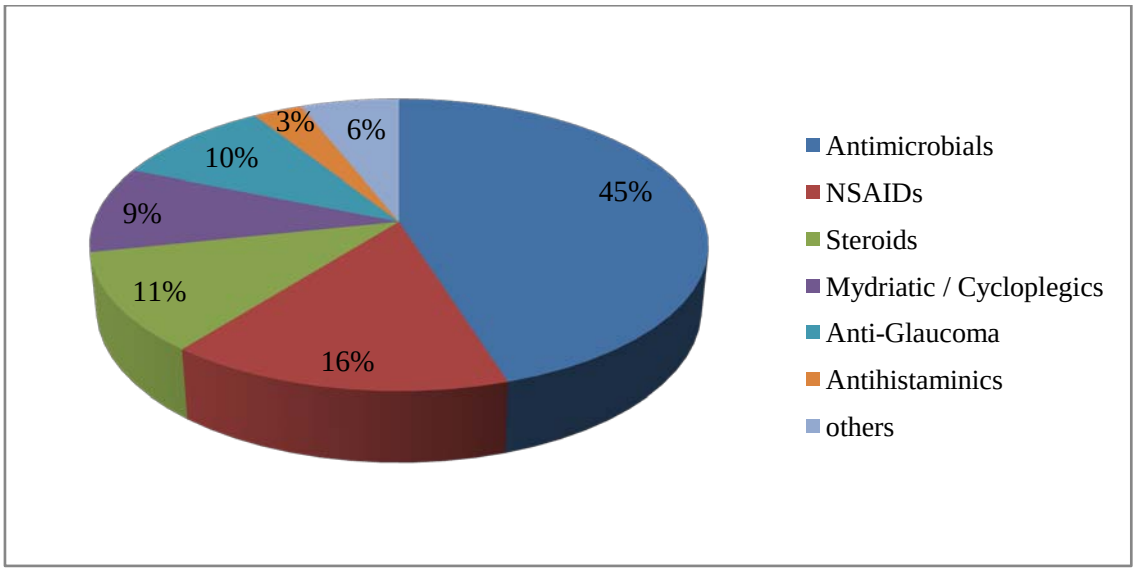

Fig. 2: Various classes of drugs used in ophthalmology department

Table 1: Major drugs with dosage forms of antimicrobials

Sl. No.	Dosage form	Antimicrobial agent	No.	Percentage (%)
1.	Drops	Ciprofloxacin	69	23.46
	290 (80.55%)	Gatifloxacin	44	14.96
		Ofloxacin	64	21.76
		Gentamicin	28	09.52
		Tobramycin	26	08.84
		Chloramphenicol	17	05.78
		Natamycin	14	04.76
		Fluconazole	18	06.12
		Cephazoline (fortified)	10	03.40
2.	Ointment	Ciprofloxacin	13	72.22
	18 (05%)	Chloramphenicol	04	22.22
		Acyclovir	01	05.55
3.	Oral	Ciprofloxacin	19	63.33
	30 (08.33%)	Amoxicillin + clavulanic acid	07	23.33
		Ampicillin	03	09.99
		Acyclovir	01	3.33
4.	Parenteral	Ceftriaxone	12	54.54
	22 (06.11%)	Ciprofloxacin	08	36.36
		Vancomycin	02	09.09

Among the topical antimicrobials ciprofloxacin (23.46%) followed by ofloxacin (21.76) were prescribed too often. Ciprofloxacin is cheap, safe and effective against most of the organism infecting eye; hence its use is widespread in the treatment of various eye infections[7].

It is always preferred to have complete prescription which includes name, age, sex, and diagnosis with rational drug treatment using less number of drugs, proper dosage form, and frequency of administration with duration of therapy. Thus, it will give relief to patient from disease in a short span and with less cost. Our hospital-based prescriptions were almost complete in 79% cases. Since percentage of drugs prescribed from hospital formulary was only 62.65%, suggestions were given to the doctors to prescribe drugs among the hospital formulary to reduce the economic burden to the patients.

There is a need to conduct many such studies in other departments as well, to audit large number of prescriptions and educate the prescribers on rational drug therapy for benefits and safety to the patient.

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