

## PRESCRIPTION ANALYSIS OF POST-OPERATIVE CATARACT PATIENTS IN OPHTHALMIC OPD

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**Abstract-** Increase expenditures on drugs consumptions irrational production, prescription & use of drugs, and potential hazards to patients has been a concern of health professionals and health administrators. The present study was conducted to evaluate the pattern of prescription and use of drugs in the outpatients so as to structure a drug prescription protocol by the department of ophthalmology so as to adopt the system of rational use of drugs. The 766 prescriptions of (952 total drugs) post-operative patients were analyzed for average number of drugs per prescription, the duration of treatment, the dosage form, the frequency of administration and the percentage of drugs prescribed by their generic names. Prescription analysis showed that the average number of drugs per prescription was 1.22%. The maximum numbers of drugs prescribed were eye drops (48.10%), followed by ointments (25.31%), tablets (12.81%), capsules (7.98%), and injections (5.76%). Most of the prescription for one drug demonstrated mention of frequency of drug administration & the duration of treatment. Poor prescribing practice were seen with prescription containing more than two or three drugs. The study reveals minimum common prescription writing errors. However, more than 90% prescriptions were prescribed in by the generic names, suggest a little more improvement in prescription practice and a periodic audit of drug prescription is warranted.

### INTRODUCTION

Expenditures due to irrational use of drugs have been a strain on the meagre health budgets of several developing countries including India. Third world countries spend 30±40% of their total health budget on drugs some of which are useless and expensive and doubles their expenditure on drugs every 4 years while GNP (Gross National Product) doubles every 16 years<sup>1</sup>. Despite the Essential drug program in developing countries, there are some evidences of poor prescribing habits by physicians, including irrational use of drugs, high numbers of drugs per prescription and high use of injectable formulations and antibiotics<sup>2</sup>. It has been reported that inappropriate use of drugs represent a potential hazard to the patients and an unnecessary expense<sup>3</sup> but also necessitates a periodic review of pattern of drug utilization to ensure safe and effective treatment. There are reports on drug prescription pattern as well as on rationale use of drug in health institutions but studies on prescription vis-à-vis post-operative cataract patients follow up in OPD are very scanty. This study has been undertaken to examine the analysis of drug prescription pattern in post-operative cataract patients follow up in OPD at medical college hospital as an attempt to audit the prescription practice of the medical professional in ophthalmology and to structure a

drug prescription protocol to provide safe and economic medical care in rationale manner.

### MATERIAL & METHODS

The present study was conducted at the Outpatient Clinic of Ophthalmology of MGM Medical College Kamothe. Data was collected from the post-operative cataract patient attending OPD for follow up during the period from May 2010 to September 2010. Drugs prescriptions of 776 patients, treated during the course of the study were analyzed using a specially structured form to obtain the required information about the drug prescribed to patient included in the study. All the drugs prescribed were recorded including its dosage form, route of administration, frequency of administration, indications for which prescribed and duration of therapy. These forms were then used to analyze the average number of drugs per prescription, dosage form of drugs, the frequency of drug administration and the duration of therapy (recorded or not) and whether the drugs were prescribed in generic or proprietary names. Data generated from the questionnaires were analyzed using EPI-INFO 2000 software<sup>4</sup> after manual data verification and analysis was done.

## Result

In the present study, we analyzed 952 drugs prescribed in all the 766 prescriptions having one to five drugs per prescription in five different dosage forms. The details of data analysis are depicted in table -I. It is observed from the above table that number of drugs per prescription varied from one to five and prescribing two drugs to majority of patients (33.28%) with the average of 1.24 drugs per prescription. 22.45% prescriptions for one drug while for three drugs were 23.36%. The number of prescribing four or five drugs were 7.04% and 4.69% respectively indicate rationale use of drugs and concern of the clinician to cost effective treatment. The most common prescription to patients of ophthalmic diseases was found to be Eye Drop (47.05%) followed by eye Ointment (25.31%). Oral therapy in form of tablets or capsule was prescribed only in 12.81% or 7.81% prescriptions respectively.

All the prescriptions were also analyzed with respect to record of frequency of drug administration and the duration of treatment. It is observed that out of 766 only 424 prescriptions had mention of frequency of drug administration. Further, the analysis of the present study reveals out of 172 prescriptions for one drug, frequency of drug administration was mentioned in 167 prescriptions, while in prescriptions for two drugs, the record of frequency of drug administration was found only in 112 prescriptions. It is seen that pattern of writing frequency of drug administration except one drug prescription, was significantly decreasing with increase in number of drugs prescribed. It is also observed that except for eye ointment and eye drops, very few prescriptions were found to be without mention of duration of treatment ranging from 8.92% to 1.15 % of the total prescriptions. Analysis of the prescriptions showed that 27% of drugs were written in the form of various trade names and the generic name of the drugs was mentioned in 73%.

## DISCUSSION

It has been common belief that prescriptions of drugs are aimed to provide immediate relief from the symptoms of the disease with optimum efficacy and minimum adverse drug reactions. Hence the drugs have to be used rationally<sup>5</sup>. The average number of drugs per prescription is an important criterion of the prescription audit. We observed that the average number of drugs per prescription was 1.24 per prescription. The studies from other hospitals from India or abroad reported 3-5 drugs per prescription, which are higher than findings of the present study<sup>5,6,7</sup>. However, studies from Bangladesh<sup>8</sup> and Lebanon<sup>9</sup> have reported rational figures of 1.4 and 1.6, respectively. Decreased number of drugs per prescription, as observed in the present study, is known to reduce risk of drug interactions and is in conformity of the guidelines of drug regulatory authority. It has been suggested that the number of drugs per prescription as low as possible since higher figures lead to increased risk of drug interactions<sup>10</sup> increased hospital cost<sup>11</sup> and errors of prescribing<sup>12</sup>.

Our analysis reveals that almost all the prescription had mention of frequency of drug administration for one or two prescription but aptitude for writing frequency of drug administration was missing when more number of drugs was prescribed. It is also seen in our study that the duration of therapy was recorded for more than 90% of the drugs prescribed. In a similar study, it is reported that the frequency of application was recorded in 93% and the duration of treatment was mentioned in 75% of all the prescriptions audited<sup>13</sup>. Lack of information on frequency of drug administration and duration of drug therapy on less than 10 % prescription in present study may be attributed to time constraints or increase patient load but it rejects the ignorance of the physician attending follow up patients. The study showed a need for still more improvement in prescription writing. In our study demonstrated that 28.31% of drugs were written in the form of various trade names and the generic name of the drugs was mentioned in 71.63%. The analysis of the prescriptions conducted by Maniyar et al<sup>14</sup> reported that 99% of the prescriptions were written in the form of various trade names and that the generic names of the drugs were mentioned in 1% of the cases while other studies reported that 35% prescriptions with generic name and suggests that the brand names are more popular amongst the medical practitioners of such hospitals<sup>5</sup> and exert the influence of pharmaceutical companies. Prescriptions of generic drugs could facilitate cheaper treatment for the patient

## CONCLUSION

We conclude that drug prescription without dose form, duration and frequency of treatment may not be safe and could result increase cost of treatment. The department, while giving training to medical professionals especially the postgraduates, must ensure that prescription written in its OPD should include name, age, sex, diagnosis and rational drug treatment with less number of drugs (generic names), the proper dosage form, the frequency of administration and the duration of therapy. The study also advocates the periodic review and audit of the prescriptions by each heads of the department to inculcate good medical practices for treatment.

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Table 1- Analysis of drugs prescription Pattern of Ophthalmic OPD Patients.

Number of drugs per prescription	Nos. of Prescription	Record of frequency administration Observed in%	Number of doses form per prescription	Nos. of Prescription %	Record of Duration treatment Observed in %
One	172 (22.45%)	167 (21.80%)	Eye Drops	458(48.10%)	448 (47.05%)
Two	255(33.28%)	112 (14.62%)	Eye Ointment	241(25.31%)	224 (23.52%)
Three	179(23.36%)	91 (11.87)	Tablets	122(12.81%)	85 (8.92%)
Four	54 (7.04%)	32 (4.17%)	Capsules	76(7.98%)	22 (2.31%)
Five	36(4.69%)	22 (2.87)	Injections	55(5.77%)	11(1.15%)