

Prescribing Pattern and Drug Use in Ophthalmology Out Patient Department of Nepalgunj Medical College, Nepalgunj, Nepal

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ABSTRACT

Introduction: Monitoring, evaluation and modification of prescriptions of prescriber can be achieved by the study of prescribing pattern through prescription audit. WHO and INRUD have evolved standard drug use indicators to improve the overall drug use in developing nations like Nepal. **Aims and objective:** To describe the patterns of prescription and drug use at ophthalmology at out-patient department (OPD). **Materials and methods:** The study was conducted at Out Patient Department of ophthalmology at Nepalgunj Medical College, Nepalgunj. The data was collected from the patients who visited the OPD during the period from May to November 2017. Total 855 Prescriptions were audited and WHO drug prescribing and use indicators were analyzed. **Results:** The number of drugs per prescription varied from one to five with an average of 2.6. Majority of drug 97% was prescribed in brand name. The maximum (76%) drugs were prescribed as topical form. Eye drops 64% were the most commonly prescribed followed by ointments (12%), tablets (11%), capsules (9%), syrups (3%) and injections (1%). Sixty percent lubricants were prescribed followed by anti-allergic and Anti-inflammatory (20%) then antimicrobials 17%, Mydriatic and cycloplegic 7%. The dosage forms of the drugs were recorded for 92% and the frequency of administration was recorded for 96% of the prescriptions whereas duration of treatment was mentioned for 66% of the prescription. **Conclusion :** In the hospital setting drug utilization pattern must be monitored time to time to analyze their rational use, provide feedback and suggestion to the prescriber.

Key words: Generic name, prescribing pattern, WHO drug use indicators

INTRODUCTION

Drug utilization is defined as marketing, distribution, prescription and the use of drugs with special emphasis on the resultant medical, social and economic consequences¹. In the hospital setting drug utilization pattern must be monitored time to time to analyze their rational use, provide feedback and suggestion to the prescriber². WHO drug use indicator is used to evaluate the prescription pattern to promote rational use of drug³. WHO and INRUD have evolved standard drug use indicators to improve the overall drug use in developing nations like Nepal⁴. Monitoring, evaluation and modification of prescriptions of prescriber can be achieved by the study of prescribing pattern through prescription audit⁵. Till date there is no study has been done on prescribing pattern in ophthalmic care in Western Nepal. The periodic auditing of the prescription helps to measure the impact of the prescribing pattern. So, the present study was done with the aim to study the drug use pattern in ophthalmology outpatient department and to evaluate the drug use for rationality.

Aims and objective

To describe the patterns of prescription and drug use at ophthalmology at out-patient department (OPD)

MATERIALS AND METHOD

The study was conducted at Out Patient Department of Ophthalmology at Nepalgunj Medical College, Nepalgunj. Study was approved from Institutional Review Committee of Nepalgunj Medical College. The data was collected from the patients of all age groups of either sex, who visited the OPD during the period from May to November 2017. Patients on follow up and patients who were not prescribed any drug but undergo other interventional procedures were not included in the study. Patients who did not gave consent for study were also excluded. After taking the consent from patients or patient's relatives in case of minor, data were collected from the patient's OPD card in working proforma. Prescriptions of 855 patients who were treated during the course of the study were audited and WHO drug use indicators with parameter like drug route, dosage form, indications for which prescribed, average number of drugs per prescription, percentage of drugs prescribed by generic name and brand name and drugs prescribed from NLEM-2016^{6,7}.

RESULT

The total 855 prescriptions were analyzed. The number of drugs per prescription varied from one to five, three drug in 32.16% of prescription followed by two i.e.; 27.48% (Table -I) with an average of 2.6 (Table-II).

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Number of drug per prescription	Number of prescription	Percentages
One	170	19.8
Two	235	27.48
Three	275	32.16
Four	101	11.8
Five	74	8.6
Total	855	100

Table 1: Number of drug prescribed per prescription

Patients suffering from various ocular disorders attended the OPD during the study period (Figure 1). The most common disorders diagnosed were allergic eye diseases 28%, dry eye 25% and Presbyopia 20% followed by viral eye infection, cataract, refractive error, pterygium, trauma and uveitis.

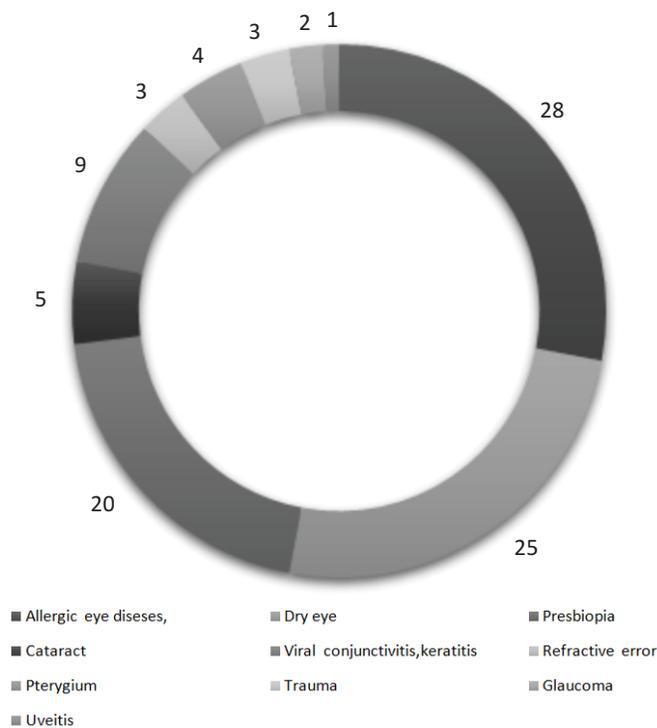


Figure 1: Ocular diseases pattern

Seven different dosage forms were prescribed (Figure 2). Eye drops 64% were the most commonly prescribed followed by ointments (12%), tablets (11%), capsules (9%), syrups (3%) and injections (1%). Five hundred and thirteen (60%) lubricants were prescribed followed by anti-allergic and Anti-inflammatory (20%) then antimicrobials 17%, Mydriatic and cycloplegic 7%, mitotic 0.5% and others 2% of the total drugs prescribed (Figure-3).

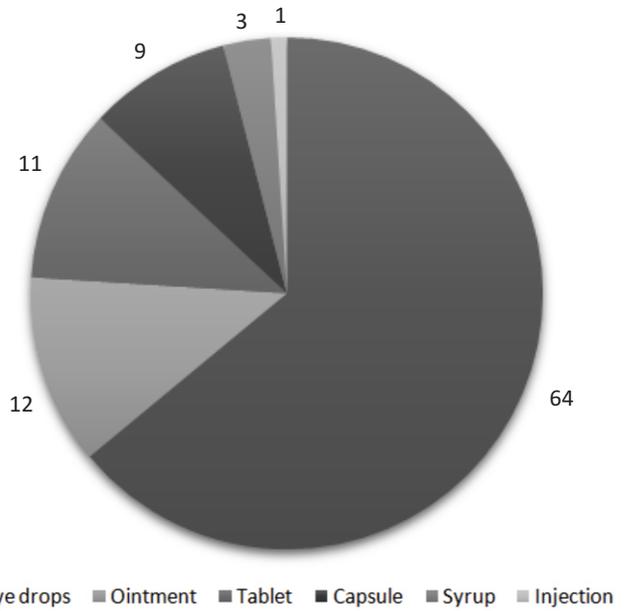


Figure 2: Formulation of prescription in percentage

Five hundred and thirteen (60%) lubricants were prescribed followed by anti-allergic and Anti-inflammatory (20%) then antimicrobials 17%, Mydriatic and cycloplegic 7%, mitotic 0.5% and others 2% of the total drugs prescribed (Figure-3)

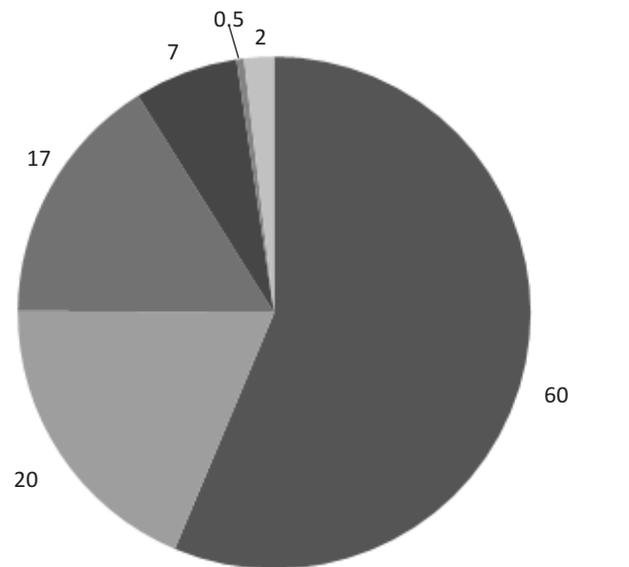


Figure 3: Type of Medication prescribed

The maximum number 650(76%) drugs were given for topical use in the form of eye drops 547(64%) and ointments 103 (12%) followed by oral 188 (22%) as tablets, capsules and syrup form (Table-II).

Type of medication
Drops 547(64%)
Carboxy methyl cellulose(Refresh tear, Relub)
Ofloxacin-dexamethasone combination(OXOO-D)
Moxifloxacin (milflo, mosi)
Ciprofloxacin(zoxan)
Tobramycin (toba, ocutob)
Acyclovir (occuvir)
Natamycin (natoptic)
Timolol (glucontim, iotim)
Olopatadine(winolap or OPD-1)
Cyclopentolate (cyclopent)
Prednisolone (predmet)
Fluromethalone (FML) or (floman)
Flurbiprofen (FBN, Eyefen)
Homotropine (homide, aurohom)
Pilocarpine (pilocar)
Sodium chromoglycate (allercrom)
Hypromellose NaCl
Ointment 103 (12%)
Ciprofloxacin (Zoxan)
Tetracycline (occucycline)
Chloramphenicol-dexamethasone (occupol-D)
Chloramphenicol (occupol)
Acyclovir(occuvir)
Oral 188 (22%)
Ciprofloxacin (Zoxan)
Ofloxacin (ZO)
Ranitidine (aciloc)
Prednisolone (cortilone)
Flucloxacillin (Flupen)
Codeine-paracetamol (codomol)

Table-II: Common therapeutic agents prescribed

The dosage forms of the drugs were recorded for 92% of the drugs and the frequency of administration was recorded for 96% of the prescriptions whereas duration of treatment was mentioned for 66%. The analysis of the prescriptions showed that 97% of the prescriptions were written in the form of various trade names and that the generic names of the drugs were mentioned in 3% only (Table-II),

Total number of prescription	855
Average number of drug per prescription	2.6
Percentage of dosage form recorded	92%
Percentage of frequency of therapy recorded	96%
Percentage of duration of therapy recorded	66%
Percentage of encounters with an antimicrobials prescribed	60%
Percentage of encounters with an injection prescribed	2%
Percentage of drug prescribed by generic name	3%
Percentage of drug prescribed by brand name	97%

Table-III Analysis of prescription (WHO core drug prescribing indicators)

DISCUSSION

Drugs play crucial role in improving human health. Drug prescription form a very important point to contact between the doctor and patients. The degree of polypharmacy is measure by the average number of drugs per prescription. According to WHO the average number of drugs should be 1.6 to 1.8 per prescription.⁵ In this study the average number of drug per prescription was 2.6 which is very similar with the study done in India by Prajavati V et al⁸ (2.23), Biswas et al⁴ (3.0), Maniyar Y et al⁹. (2.0), and Nehru M et al¹⁰ (1.8). Number of drugs per prescription should be kept to minimum otherwise prescribing more drugs would increases risk of drug interactions, adverse effects, increase treatment cost and increase prescribing error¹¹.

Higher percentages of drug were prescribed as lubricants 60% followed by anti-allergic and Anti-inflammatory 20%, this is due to prevalence of allergic eye disease and dry eye and environmental factors. So, lubricants, with anti-allergic and anti-inflammatory drugs prescribed are appropriate with prevalence of disease pattern.

Majority of drug were prescribed with topical routes 76% in the form of eye drops in 64% and ointments (12%), followed by oral routes 22% in the form of tablets (10%), capsules (9%), syrups (3%) and only 2% as injection. Similar pattern was shown in the study by Pooja Prajawal et al¹² 67.65% eye drops, 11.66% ointment and 15.03% oral, by Nehru M et al¹⁰, eye drops (66.18%), followed by ointments (16%), capsules (9.5%), tablet (6.57%), syrup (0.73%), injection (0.73%) and by Prajavati V et al⁸ 75,34% eye drops, which strongly supports that the topical routes with eye drops and ointment has minimal adverse effects than systemic administration of drug.

In this study drug prescribed by generic name was very low 3% that is due to the frequent visit of the medical representatives in hospital setting could be the reason for under prescribing of the drugs by generic name. The percentage of drugs prescribed

by brand name were 97%, which is similar with previous study done by Prajavati V et al⁸ 98.8%, Pradeep R et al¹³ 97.65%, by Pooja P et al¹² 67.56% of brand name, which suggest popularity of brand names among the ophthalmologist and influence of pharmaceutical companies over prescriber. However, prescribing by brand name could result prescribing error because of similarity of many drugs with their spelling.

The analysis of the prescriptions showed that the dosage forms of the drugs were recorded for 92%, frequency of administration was recorded 96% whereas duration of treatment was mentioned for 66%. Which was very similar with the study by Pooja P et al¹² 91%, 97%, and by Maniyar Y et al⁹ was 69% and 99.88%, 94% and 57% respectively.

CONCLUSION

Excessive polypharmacy and prescribing in brand name due to high influences of pharmaceutical company over prescriber was quite common in Nepal which is not in WHO standard. In the hospital setting drug utilization pattern must be monitored time to analyze their rational use, provide feedback and suggestion to the prescriber. Concept of generic prescribing and continuous supervision and imparting education to the ophthalmologists about prescribing pattern should be initiated. There is a need to conduct similar studies in other departments and need to audit a large number of prescription on rational drug therapy for the benefits and safety of the patients.

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