



Original Research Article

Prescribing Patterns of Drugs Used For Treatment of Conjunctivitis in Ophthalmology Outpatient Department of Tertiary Care Hospital

Rajesh Kumar Suman¹, Varshav S. Gore², Ipseeta Ray Mohanty¹, Neeraj Israni², Y A Deshmukh¹

Department of Pharmacology¹, Department of Ophthalmology²,
MGM Medical College, Kamothe, Navi Mumbai

Corresponding Author: Rajesh Kumar Suman

Received: 28/01/2015

Revised: 21/02/2015

Accepted: 26/02/2015

ABSTRACT

Background: Drug Utilization Provides Prescribing Behaviors of Prescriber. Conjunctivitis is common disease in Ophthalmology OPD. This is important to conduct such studies in Eye OPD.

Aim: The Study aim was to analyze the pattern of Drugs Prescribed for Conjunctivitis in Ophthalmology OPD patients.

Methods: The study was an observational study completed over a period of 8 months, from May 2014 to Dec 2014. The Study was conducted in Department of Ophthalmology & Pharmacology, MGM Medical College & Hospital Navi Mumbai. A questionnaire was specifically designed factoring patients' demographical profile, diagnosis of disease and Drug regimen.

Results: A total 121 prescriptions of patients were analyzed who visited Ophthalmology OPD. The total 292 drug were prescribed. Average drug per prescription was 2.41. Most commonly Drug prescribed was Olopatadine. Among total Patients, Allergic Conjunctivitis was diagnosed in 78% of the Patients and Bacterial and Viral Conjunctivitis were diagnosed in 17% and 5% respectively. In total 292 drugs were prescribed in 121 patients, 14.69% were Antibacterial, Antiviral (4.12%), Antihistamine (34.10%), Artificial tear (22.23%), Analgesics/Anti-inflammatory (6.04%), Steroids (11.98%) and Antiulcer was 6.84%. Most Common Prescribed antibiotic was Moxifloxacin. Most Common route of administration was in Eye drops form. The entire drugs prescribed were by brand name.

Conclusion: Olopatadine was common drug prescribed in present study. Commonest dosage form of prescribed drug was eye drop. Prescription of drugs by brand name was matter of concern.

Keywords: Prescribing Patterns, Ophthalmology, Out-Patients, Conjunctivitis

INTRODUCTION

Drug utilization research has been defined by the World Health Organization

(WHO) as the marketing distribution, prescription and use of drugs in a society, with special emphasis on the resulting

medical, social and economic consequences.⁽¹⁾ The principle aim of Conducting Prescribing Pattern Study is to enhance Rational Prescribing & Spread Awareness among Prescriber. The drug use pattern generates early signs of irrational drug use and suggests intervention to improve drug usage.⁽²⁾

Conjunctivitis is an inflammation of the lining of the white part of the eye and underlining of the eyelid (Conjunctiva) that can be caused by infection, allergic reaction or by physical or chemical agents.⁽³⁾

Signs:

- a) Papillae
- b) Follicle
- c) Discharge- Watery, mucoid purulent, yellow white

Symptoms:

- a) Itching, redness
- b) Burning sensation
- c) Blurred Vision
- d) Watering of eye
- e) Increased sensitivity of light

The most common cause of conjunctivitis are allergen, viruses and bacteria but it can also be caused by chemicals, fungi & certain diseases. Acute Bacterial Conjunctivitis is usually self limiting. Infection spreads by hand, aerolized contact or from adjacent structure like lacrimal sac or upper respiratory tract. Bilateral involvement occurs in upto eighty percent cases, thus bilateral treatment can be started even when presented unilaterally.⁽⁴⁾

Viral conjunctivitis can occur at any ages. It is characterized by acute follicular reaction associated with preauricular lymphadenopathy, frequent corneal involvement and systemic signs of viral infection.⁽⁵⁾

Allergic Conjunctivitis is caused by pollens from trees & grass household dust, mold, spores, animal danders or chemical

agents.⁽⁶⁾ It can be categorized under following five types:^(7,8)

- Seasonal Conjunctivitis
- Vernal Conjunctivitis
- Atopic Conjunctivitis
- Giant Papillary Conjunctivitis
- Contact Hypersensitivity

Giant Papillary Conjunctivitis is severe form of allergic reaction.

Periodical auditing of prescribing pattern is vital for promotion of rational use of drug, The Drug Usage Study in Conjunctivitis Patients Has not been explored so far in India; Hence Prescribing Patterns of Drugs used in Conjunctivitis Patients has been designed to give right feedback to Prescriber.

Objective

To analyze the patterns of drugs Prescribed for Conjunctivitis Patients in Eye OPD.

MATERIALS AND METHODS

I. Necessary approval from the Institutional Ethics Committee was obtained before initiating the study.

II. Study site

This drug utilization study was conducted at the departments of Ophthalmology and Pharmacology, MGM Medical College & Hospital, Kamothe, Navi Mumbai, India.

III. Study period

The study was an observational study completed over a period of 8 months, from

May 2014 to Dec 2014.

IV. Study design

Prospective-open labelled, observational study

V. **Sample size:** Total 125 patients were recruited for the study

VI. Patient selection

- **Inclusion criteria:** Patient attending Ophthalmology OPD and giving consent to participate in the study.

- **Exclusion criteria:** Patient who were seriously sick (emergency) and IPD patients.

VII. **Study material:** A specially designed data entry format was used to record patients' details like patient name, age, sex, Drug regimen.

RESULTS

In totals of 121 patients were analyzed for the Drugs used for Conjunctivitis Patients in Ophthalmology department. Maximum Patients belonged to the age group of 31-40 yrs (47.93%) followed by age group of 21-30 yrs (31.4%). The proportion of Male (55%) patients was more as compared to female patients (45%).(Table 1)

Table 1 shows: Pattern of Demographic Data of Eye OPD Patients

S.NO	PARAMETERS	RESULTS
1	Total no. of sample	121
2	OPD Sample	121
3	Age (year)	% of Patients
	10-20 yr	10 (8.26%)
	21-30 yr	38 (31.4%)
	31-40 yr	58 (47.93%)
	41-50 yr	9 (7.43%)
	51-60 yr	6 (4.95%)
4	Gender	
	Male	55%
	Female	45%
5	Total Drug Prescribed	292
6	Average Drugs/prescription	2.41
7	Most commonly prescribed Drugs	Olopatadine
8	Poly Pharmacy	33%
9	Encounters with brand names	100%

Total 121 prescription of Patients who were visited our Ophthalmology OPD were analyzed. Total 292 drugs were prescribed. Average drug per prescription was 2.41. Most commonly Drug prescribed was Olopatadine. Poly Pharmacy was seen in 33% of the Prescription. All the Drugs were prescribed by Brand name. (Table 1)

The Total 121 Prescription of Diagnosed Conjunctivitis was audited. We found different categories of conjunctivitis, Allergic Conjunctivitis was diagnosed in

78% of the Patients and Bacterial and Viral Conjunctivitis were diagnosed in 17% and 5% respectively.(Fig 1)

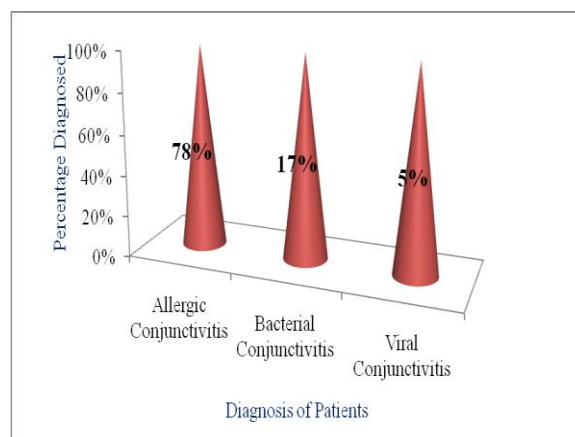


Fig 1 shows: Type of conjunctivitis Diagnosed in Eye OPD

The auditing of Prescription of Conjunctivitis Patients showed various Group of drug prescribed in their prescription. Total 292 drugs were prescribed in 121 patients, among total drug prescribed, 14.69% was Antibacterial, Antiviral was 4.12%, Antihistamine (34.10%), Artificial tear (22.23%), Analgesics/Anti-inflammatory (6.04%), Steroids (11.98%) and Antiulcer was 6.84%. Among Antibiotic, Moxifloxacin, Tobramycin and Ciprofloxacin were prescribed. Acyclovir & Ganciclovir were prescribed as antiviral. Wide range of antihistamine was prescribed in present study i.e. Fixed dose combination (FDC) of Phenylephrine hydrochloride+Chlorpheniramine Maleate was prescribed followed by Ketotifen, Olopatadine and Epinastine hydrochloride. Carboxymethyl Cellulose and Hydroxypropyl methyl cellulose were prescribed as artificial tear. Ibuprofen and Diclofenac as analgesic with anti-inflammatory prescribed. Loteprednol and Prednisolone were given to patients as Steroids. Antacid gel and Ranitidine were prescribed as antiulcerative. (Fig 2, Table 2)

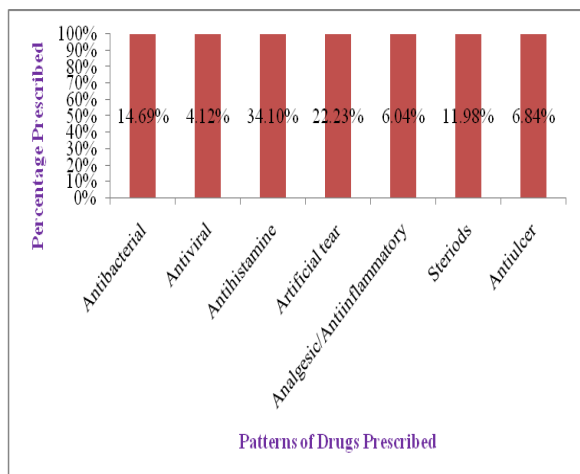


Fig 2 shows: Pattern of Medication prescribed in conjunctivitis Patients in Eye OPD

Table 2 shows: Patterns of Drug Prescribed for Conjunctivitis Patients in Eye OPD

SN	Name of Particular	Percentage (N=292)
1	Antibacterial drug therapy	
a	Moxifloxacin	7.12%
b	Tobramycin	4.01%
c	Ciprofloxacin	3.56%
2	AntiViral drug therapy	
	Acyclovir	2.12%
	Gancyclovir	1.3%
3	Antihistamine	
	Phenylpherine hydrochloride +Chlorphenaramine Maleate	7.9%
s	Ketotifen	5.28%
	Olopatadine	18.29%
	Epinastine Hydrochloride	2.63%
4	Artificial Tear	
	Carboxyl methyl Cellulose	15.8%
	Hydroxypropyl methyl cellulose	6.43%
5	Analgesic/ Anti-inflammatory	
	Ibuprofen	3.95%
	Diclofenac	2.09%
6	Steriods	
	Loteprednol	7.56%
	Prednisolone	4.42%
7	Antiulcer	
	Antacid	4.01%
	Ranitidine	2.83%

Among 292 Drugs prescribed, maximum 83.14% drugs were prescribed as Eye drop followed by 3.98% Drugs as Ointment, 8.87% as Tablet form and 4.01% as other dosage form like Gel or Syrup. (Fig 3)

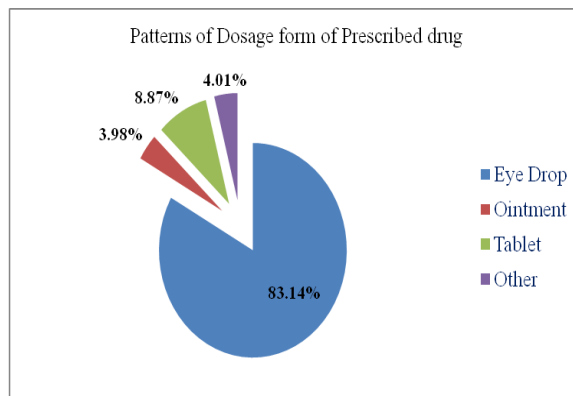


Fig 3 Shows: Patterns of Dosage form of prescribed drug for Conjunctivitis Patients

DISCUSSION

Conjunctivitis is common disease seen in day to day in Ophthalmology OPD. There are several type of drugs are prescribed to treat Conjunctivitis patients. The rational auditing of Drugs used in conjunctivitis patients has not been conducted till the date from India as best of knowledge and as per literature survey. So, the Present study analyzed 121 patients of Ophthalmology Out-Patients who were diagnosed with Conjunctivitis. The present study reveals, Maximum Patients belonged to the age group of 31-40 yrs (47.93%). The proportion of Male (55%) patients was more as compared to female patients (45%). The study by Banerjee et al⁽⁹⁾ in Ophthalmology OPD also showed incidence of males was more than female.

The Present study analyzed 121 Conjunctivitis Patients to which 292 drugs was prescribed. Average drug per prescription was 2.41. It's almost similar to other previous studies conducted in Ophthalmology OPD.^(2,9) Most commonly Drug prescribed was Olopatadine. Poly Pharmacy was seen in 33% of the Prescription. All the Drugs were prescribed by Brand name. The present study showed lower incidence of polypharmacy Practice. Prescription by brand name is may be due to over advertisement by Medical representative of pharma companies.

The Present study evaluates the type of conjunctivitis Patients, among total 121 Prescription of diagnosed Conjunctivitis. Allergic Conjunctivitis was diagnosed in 78% of the Patients and Bacterial and Viral Conjunctivitis were diagnosed in 17% and 5% respectively. The auditing of Prescription of Conjunctivitis Patients showed various Group of drug prescribed in their prescription. Total 292 drugs were prescribed 14.69% was Antibacterial, Antiviral was 4.12%, Antihistamine (34.10%), Artificial tear (22.23%), Analgesics/Anti-inflammatory (6.04%), Steroids (11.98%) and Antiulcer was 6.84%. The antihistaminic drugs was prescribed maximum because most of the patients diagnosed with allergic conjunctivitis. Olopatadine (18.29%) was common antihistaminic prescribed. Artificial tear helps to reduce surface tension in suffered patients and it reduces chemotoxicity of bacterial or viral load. Carboxymethyl Cellulose (15.8%) was prescribed commonly as artificial tear. The Antibiotic was prescribed to cure bacterial Conjunctivitis. Moxifloxacin (7.12%) was commonly prescribed antibiotic in our Hospital. Antiviral therapy were given to Viral conjunctivitis patients but all diagnosed bacterial & Viral conjunctivitis patients were not prescribed with antibiotic or antiviral, some patients were treated with only artificial tear and other supportive agents which is good for practice and reduce the cost of drug also.

The analgesics with anti-inflammatory reduced pain & Inflammation of conjunctivitis Patients, Ibuprofen was prescribed commonly followed by Diclofenac. Steroids help to cure faster & Loteprednol (7.56%) was common steroids prescribed in present study. Antacid gel and Ranitidine were prescribed to reduce gastric irritation produced by other drug and also helps in absorption of other drugs properly.

The present study reveals, among 292 drugs prescribed, most common route of drug administration was Eye drops (83.14%) followed by Ointment (3.98%), Tablet (8.87%) and Other route like in Gel or syrup form(4.01%).The present study showed common route for drug used for eye care is Eye drop.

The Drug usage of Conjunctivitis Patients will help to enhance rational prescribing of drug in particular disease type. The incidence of Poly-pharmacy and percentage of antibiotic were minimal. We have not calculated Cost of drug, Duration of therapy as study showed quantitative data of drug usage pattern of conjunctivitis patients so there is lot of scope to conduct similar study in future. The present study will give right feed back to the prescriber.

CONCLUSION

The Present study showed some lacune in our study that is lower incidence of Generic drug. Most common drug was Olopatadine and moxifloxacin was most common antibiotic prescribed in present study. It is essential to conduct similar study in future to elucidate rational prescribing for treatment of Conjunctivitis.

REFERENCES

1. Lee D and Bergman U, Studies of drug utilization in pharmacoepidemiology (4th edition). Storm LB (editor) John Wiley & Sons Ltd England, 2005;401-417.
2. Rajesh Kumar Suman, Deshmukh YA, Ray I, Gore V.S. Drug utilization studies in Glaucoma Patients at MGM medical college and Hospital, International journal of scientific Research. 2013; 7(2):433-435
3. Millodot: Dictionary of Optometry and Visual Science, 7th edition. © 2009 Butterworth-Heinemann.
4. Diamant JI, Hwang DG. Therapy of Bacterial Conjunctivitis. Ophthalmology

- Clinics of North America 1999;12(1): 15-20.
5. Honnouche D, Hoang Xuan T. Acute Conjunctivitis in Inflammatory disease of the Conjunctiva. New York : Georg Thieme verlag 2001;115-36.
 6. Stock EL. Pendleton RB, Pharmacological treatment of Ocular allergic disease. Intl.Ophthalmol Clinics.1993;33:47.
 7. Allansmith MB, Korm DR, Greiner JV et al. Giant Papillary Conjunctivitis in Contact lens wearer. Am J Ophthalmol. 1997;83:697.
 8. Greoner JV, Convington HL, Allansmith MR. Surface morphology of giant papillary Conjunctivitis in contrast to normal contact lens wearer. Am J Ophthalmol.1975;85:242.
 9. I Banerjee, T Bhadury, T Sengupta, D Roy. Drug Utilization Study in Ophthalmology Out-patient Department of a Medical College in India. Ann Med Health Sci Res. 2014 Jul-Aug; 4(4): 667-670.

How to cite this article: Suman RK, Gore VS, Mohanty IR et. al. prescribing patterns of drugs used for treatment of conjunctivitis in ophthalmology outpatient department of tertiary care hospital. Int J Health Sci Res. 2015; 5(3):194-199.

International Journal of Health Sciences & Research (IJHSR)

Publish your work in this journal

The International Journal of Health Sciences & Research is a multidisciplinary indexed open access double-blind peer-reviewed international journal that publishes original research articles from all areas of health sciences and allied branches. This monthly journal is characterised by rapid publication of reviews, original research and case reports across all the fields of health sciences. The details of journal are available on its official website (www.ijhsr.org).

Submit your manuscript by email: editor.ijhsr@gmail.com OR editor.ijhsr@yahoo.com