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Prescribing pattern of topical antibiotics for conjunctivitis in ophthalmology unit of a tertiary care hospital of Deccan plateau

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Abstract
Objective: To investigate antibiotic prescribing pattern in bacterial, viral and allergic conjunctivitis in a tertiary care hospital.
Materials and Methods: Prospective-open labelled, non-interventional observational study, total 100 patients were recruited for the study, all antibiotics prescribed were recorded including dosage form, frequency and duration, disease condition whether bacterial, viral and allergic conjunctivitis was taken into account. These forms were used to analyse average utilization of antibiotics in various forms of conjunctivitis, descriptive statistics performed. Data was entered and analysed with Microsoft Excel 2013. Values were expressed as actual numbers and percentage
Results: Total numbers of drugs prescribed are 200 out of 100 prescriptions. Most commonly prescribed drugs are topical antibiotics followed by antihistamines and analgesics and then steroids, antivirals are prescribed less, among antibiotics, and fluoroquinolones were prescribed most common followed by aminoglycosides and broad spectrum antibiotics such as chloramphenicol and tetracyclines
Conclusion: Besides rational antibiotic use, the prevention of bacterial infections and their spread are essential in the containment of antibiotic resistance. Ophthalmic antibiotics should be prescribed judiciously in acute infective conjunctivitis even for suspected bacterial cases; since it is found to resolve spontaneously without any serious complications.

Keywords: fluoroquinolones, conjunctivitis, aminoglycosides, antihistamines and rational drug use

Introduction

World Health Organization (WHO) has defined drug utilization research as marketing, distribution, prescription and use of drugs in a society, with special emphasis on resulting medical, social, and economic consequences [1].

Antibiotics are widely prescribed for various ophthalmic diseases. Evidences have shown trends of resistance to a different class of antibiotics often used in ocular therapeutics [2].

Periodical auditing of prescribing pattern is vital for promotion of rational use of drugs; Drug Usage Study in Conjunctivitis Patients has not been explored so far in India

Conjunctiva is a thin, translucent membrane lining the anterior part of the sclera and inside of the eyelids. Inflammation or infection of the conjunctiva is known as conjunctivitis and is Characterized by dilatation of the conjunctiva vessels, resulting in hyperaemia and oedema of the conjunctiva, typically with associated discharge [3].

Conjunctivitis can be divided into infectious and non-infectious causes. Viruses and bacteria are the most common infectious causes. Non-infectious conjunctivitis includes allergic, toxic, and cicatricial conjunctivitis [4].

The disease can also be classified into acute, hyper acute, and chronic according to mode of onset and the severity of the clinical response [5].

The prevalence of conjunctivitis varies according to the underlying cause, which may be influenced by patient's age, as well as season of the year [6-12].

Viral conjunctivitis is most common cause of infectious conjunctivitis both overall and in adult population and is more prevalent in summer.

Bacterial conjunctivitis is second most common cause and is responsible for majority of cases in children; it is observed more frequently from December through April.

Allergic conjunctivitis is observed more frequently in spring and summer [6-12].

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.

Objective

To investigate antibiotic prescribing pattern in bacterial, viral and allergic conjunctivitis in a tertiary care hospital.

Materials and Methods

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

Study site: Conducted at the departments of Ophthalmology and Pharmacology, Rangaraya medical College, East Godavari, Andhra Pradesh, India

Study period: Study was an observational study completed over a period of 3 months, May 2014 to July 2014
Study design: Prospective-open labelled, non-interventional observational study
Sample size: Total 100 patients were recruited for the study
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.
Study Procedure: All antibiotics prescribed were recorded including dosage form, frequency and duration. Disease condition whether bacterial, viral and allergic conjunctivitis was taken into account. These forms were used to analyse average utilization of antibiotics in various forms of conjunctivitis.

Statistical analysis
Descriptive statistics were performed. Data was entered and analysed with Microsoft Excel 2013. Values were expressed as actual numbers, percentage and mean.

Results
Distribution of age
0-5 years of age group -3 female patients, 6-15 years -12 male and 5 female patients, in 16-45 years-30 male and 20 female patients and >46 years 20 male and 10 female patients were included

Distribution of sex
Male patients were 53%, and female patients were 47 %
Out of 100 conjunctivitis patients receiving antibacterial therapy 55 were of bacterial conjunctivitis, 28 were of viral conjunctivitis and 17 were of allergic conjunctivitis.
Total numbers of drugs prescribed were 200 out of 100 prescriptions. Most commonly prescribed drugs are topical antibiotics followed by antihistamines and analgesics and then steroids, antivirals are prescribed less.
Among antibiotics, fluoroquinolones were prescribed most common followed by aminoglycosides and broad spectrum antibiotics such as chloramphenicol and tetracyclines

Table 1

Drugs prescribed	Number/Percentage
Antibiotics	110(55%)
Antivirals	10(5%)
Antihistamines	50(25%)
Analgesics	20(10%)
Steroids	10(5%)

Table 2

Antibiotics prescribed	Number/percentage
Flouroquinolones	80(40%)
Aminoglycosides	20(10%)
Broad spectrum antibiotics	10(5%)

Most commonly Drug prescribed was Ciprofloxacin. Aminoglycosides are considered to be more effective against Gram negative organisms. In our study, two aminoglycosides, amikacin and gentamicin are prescribed. Poly Pharmacy was seen in 33% of the Prescription. All the Drugs were prescribed by Brand name.

Discussion
Drug utilization studies are important for obtaining data about patterns and quality of drug use outcomes of use. WHO drug use indicators are highly standardized and are recommended for inclusion in drug utilization studies [1, 13].
Most common infective eye disease is conjunctivitis and it is common due to poor sanitation[14], present study attempts to describe the current prescribing pattern of drugs in conjunctivitis.
In this study, the most commonly prescribed topical drugs were antibiotics 55%, the result was consistent with a previous study where 59.5% of prescribed drugs were antibiotics [15].
Fluoroquinolones (ofloxacin, ciprofloxacin, moxifloxacin) were the most commonly prescribed antibiotics 40%% in this study which was comparable with other studies [16, 17].
There is no role for the use of topical antibiotics in viral conjunctivitis, and they should be avoided because of adverse treatment effects [18].
Majority of cases of allergic conjunctivitis are seasonal allergies. Antihistamines, mast cell inhibitors, and topical steroids (in selected cases) are indicated for treating allergic conjunctivitis [19].
At least 60% of bacterial conjunctivitis is self-limited without treatment within 1 to 2 weeks of presentation. Although topical antibiotics reduce the duration of the disease, no differences have been observed in outcomes between treatment and placebo groups [12].
Antibiotic therapy should be considered in cases of purulent or mucopurulent conjunctivitis and for patients who have distinct discomfort, who wear contact lenses, who are immunocompromised, and who have suspected chlamydial and gonococcal conjunctivitis [12, 20].
Limitations: Short period of 3 months might be a limitation to this study, another major limitation of this study is its inability to consider the associated comorbidities of patients.

Conclusion
Use of topical antibiotics in all cases of red eye may result in delayed diagnosis of other non-infective conditions resembling conjunctivitis, such as iritis and acute angle closure glaucoma, besides rational antibiotic use, prevention of bacterial infections and their spread are essential in the containment of antibiotic résistance. Ophthalmic antibiotics
Should be prescribed judiciously in acute infective
Conjunctivitis even for suspected bacterial cases; since it is found to resolve spontaneously without any serious complications.

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