Evaluation of Ophthacare Eye Drops in the Treatment of Acute Conjunctivitis

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ABSTRACT
A study was conducted for a period of 2 weeks to evaluate the efficacy of Ophthacare eye drops, an herbal formulation, in patients diagnosed with acute conjunctivitis. Fifty patients, aged between 18 and 70 years, who were attending the outpatient department and were not on any medication, were enrolled in the study. Most of the patients were of low socio-economic status where conjunctivitis is widely prevalent. Ninety-five per cent of the cases were diagnosed to have bilateral conjunctivitis while 5 per cent had unilateral conjunctivitis. With the exception of three cases who reported foreign-body sensation as a predisposing factor, the rest did not report any contributory elements, such as dry eyes, contact lens, diabetes, etc. The patients were advised to instill 1 to 2 drops of Ophthacare eye drops in each eye every hour. A follow-up examination was done at the end of the 1st and 2nd weeks to observe drug compliance and efficacy. On completion of the study, 40 patients reported that they were completely symptom-free (The Ind. Pract. (1998): (51), 12, 941-944).

Key words: Herbal formulation; Acute conjunctivitis; Side effect.

INTRODUCTION
Being the foremost part of the eye, the conjunctiva is frequently exposed to foreign bodies and exogenous organisms. An ophthalmologist's outpatient practice comprises largely conjunctival infection, which is secondary to refractive errors. Conjunctivitis is a contagious ailment, prevalent worldwide and is the most common form of ocular infection occurring in all age groups. The relative incidence of viral and bacterial conjunctivitis also shows a seasonal variation, with bacterial conjunctivitis predominating in the cold season and viral conjunctivitis occurring in the summer season. The conjunctival cul-de-sac harbours bacteria throughout life, beginning from the time of birth. In addition to exogenous bacteria, the normal flora contributes significantly to the pathogenesis of eye infection. Inflammation of the conjunctiva causes redness and watering of the eye. Patients with viral conjunctivitis are often predisposed to bacterial super infection. Purulent or mucopurulent discharge often follows and this condition may become chronic if not treated in time.

Ophthalmologists are now familiar not only with the clinical spectrum but also with microbial and antimicrobial agents. In recent years, there has been an emergence of antibiotic resistant strains and a new assay of micro-organisms. Though effective against micro-organisms in the management of bacterial conjunctivitis, antibiotics are not self-limited in their clinical cause.

Indian, Aramaic and Roman medical texts have recognised the value of topical treatment of acute conjunctivitis and over the centuries, a variety of remedies have been recommended for its treatment. Herbal therapy is a likely alternative in treating acute or chronic conjunctivitis, as there are several herbs with known anti-inflammatory, antibacterial and analgesic properties that have been found
effective in various eye disorders\textsuperscript{6,7,8,9}. With this in view, a clinical trial was conducted to evaluate the efficacy of Ophthacare eye drops an herbal formulation, in acute conjunctivitis.

Ophthacare eye drops contain the following herbs: \textit{Carum copticum} has been known to possess antibacterial activity against \textit{Salmonella typhi}, \textit{Micrococcus pyogenes} and \textit{Escherichia coli}\textsuperscript{10}. It is also recommended as a potential source of natural antioxidants\textsuperscript{11}. \textit{Terminalia bellirica} along with honey is used in various eye disorders. Extracts of the fruit possess antibacterial properties against \textit{Micrococcus pyogenes var. aureus} and \textit{Escherichia coli}\textsuperscript{12}. \textit{Emblica officinalis} fruit is used as an external application in ocular inflammation\textsuperscript{13}. The aqueous extract of \textit{E. officinalis} is found to be a potent inhibitor of lipid peroxide formation and a scavenger of hydroxyl and superoxide radicals \textit{in vitro}\textsuperscript{14}. Topical application of \textit{Curcuma longa} is helpful in relieving burning sensation that is a common complaint in catarrhal and purulent conjunctivitis\textsuperscript{15}. The extracts of \textit{C. longa} exhibit anti-inflammatory, antioxidant and antimicrobial properties\textsuperscript{16}. \textit{Ocimum sanctum} volatile and fixed oil extracts are known for their anti-inflammatory activity\textsuperscript{17}. \textit{Rosa damascena} petal water extract is known for its cooling effect and found to be beneficial in ophthalmopathy\textsuperscript{18}. \textit{Cinnamomum camphora} shows antibacterial activity against many gram positive and gram negative organisms\textsuperscript{19}. Honey is generally recommended in the treatment of conjunctivitis and is reported to prevent infection and promote the healing of damaged tissues. Its ingredients possess properties similar to that of antibiotics.

The following stability procedure (as provided by The Himalaya Drug Co., Bangalore), was followed while preparing the Ophthacare eye drops. The individual herbs mentioned above were standardised by gas chromatographic method using Netal chromatograph. A 10\% carbowax 20 M (3 metre, 1/8 inch IP) stainless steel column was used for the separation. Nitrogen was used as carrier gas at the flow rate of 30 ml/min. and the compound was detected using Flame Ionization Detector (FID). The filling of the eye drops was done in sterile condition, and in an aseptic area using 0.2 m sterile filtration units.

**PATIENTS AND METHODS**

Fifty patients attending the out patient department and presenting with watering, itching, redness, sticky discharge (mucopurulent), foreign body sensation in one or both the eyes, swelling of the lid, etc., were enrolled in the study, after obtaining their informed consent. A complete history and detailed examination were undertaken. In addition to intense conjunctival congestion. Two patients had papillae in upper tarsal conjunctiva and 6 patients had follicles and conjunctival foreign body in the upper fornix. Patients with corneal involvement were excluded from the study.

A conjunctival smear, one each from the upper and lower fornix, was taken from the above patients and inoculated into blood agar and MacConkey's agar. The gram positive and negative organisms were identified by gram staining. The presence of gram-positive cocci was further confirmed by catalase and coagulase tests and the presence of gram-negative cocci was established by motility, indol, methyl red Voges-Proskaur, urease, Simmons citrate and triple sugar iron agar tests.

The patients were advised to instill 1 to 2 drops of Ophthacare eye drops in each eye every hour and to report for a follow-up at the end of the 1\textsuperscript{st} and 2\textsuperscript{nd} weeks.

**RESULTS**

At the end of the 1\textsuperscript{st} week, 40 patients showed remarkable improvement after using Ophthacare eye drops as prescribed and were relieved from symptoms such as redness, watering, purulent, mucopurulent, serous discharge and swelling of lids. Six patients who did not respond to the treatment were prescribed Ciprofloxacin eye drops (1\%) as adjuvant therapy. Four patients did not report for
follow-up examination and were excluded from the study. At the end of the study period, 40 patients reported being totally symptom-free.

DISCUSSION
The balance between host defence mechanism and bacterial virulence factors govern the conjunctival health or disease state\textsuperscript{20}. Local immunosuppression from topical corticosteroid use can also predispose the development of bacterial, fungal and viral infection of the conjunctiva\textsuperscript{21}. Studies have shown that a heterogeneous population of microbial flora may be found on the conjunctival surface of approximately two-thirds of normal individuals\textsuperscript{22,23,24,25}. This clinico-bacteriological study showed that coagulase negative, gram positive staphylococcus aureus were the most common organisms isolated. One case showed gram positive bacilli and corny bacterium.

In future there is a possible scenario of "post antimicrobial era" in which a majority of antimicrobials will have been rendered ineffective due to widespread multidrug resistance. Many patients have a resistance to regular antibiotic therapy, perhaps due to their indiscriminate use of inappropriate antibiotics. It was observed that in a majority of patients, Ophthacare eye drops proved effective against both commensals and potential pathogens residing in the conjunctiva. No toxic or adverse reactions were reported in any of the patients. Thus, it can be concluded that Ophthacare Eye Drops are safe, cost effective and of proven efficacy in acute conjunctivitis, as is evident from the results of this study.

REFERENCES


