OphthaCare Eye Drops in Acute and Chronic Conjunctivitis

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SUMMARY
Inflammation of conjunctiva is a common condition, which presents with varying degrees of severity. A clinical trial was conducted in 20 patients who presented with the signs and symptoms of acute and chronic conjunctivitis. After the examination and conjunctival smear tests, patients were advised to instil OphthaCare eye drops. Majority of patients responded right from the first week and major signs including conjunctival discharge and hyperaemia, were resolved within the first week of treatment. At the end of the study, there was symptomatic as well as microbiological alleviation of the symptoms of conjunctivitis.

At this juncture of increasing incidences of epidemic, multiple antibiotic resistance and drug reactions, alternative therapy with OphthaCare containing safe and effective herbs which are known for their anti-inflammatory, antimicrobial and analgesic properties has been found to be effective in conjunctivitis.

INTRODUCTION
Conjunctiva, due to its exposure, is the common site of infection of both acute and chronic types. Inflammation of the conjunctiva manifests in many grades and types but is usually of infective and allergic origin. Conjunctivitis is a contagious ailment, prevalent worldwide and is the most common form of ocular infection occurring in all age groups. Hyperaemia and increased secretion always accompany conjunctivitis. Hyperaemia varies in degree and distribution and secretion varies in nature and quantity.

Sushruta, the father of Indian surgery, was the first to discuss elaborately about different ophthalmic conditions and their management. Netrabhishyanda has been dealt in detail and there are different effective ophthalmic formulations, which are much evident in the context of emergence of antibiotic resistant strains and a new assay of micro-organisms.

There are several herbs with anti-inflammatory, antimicrobial and analgesic properties which are found to be effective in various inflammatory eye disorders. OphthaCare is an herbal formulation with proven herbs with below mentioned properties and the clinical trial was conducted to evaluate its safety and efficacy.
Carum copticum has been shown to possess antibacterial activity against Salmonella typhi, Micrococcus pyogenes and Escherichia coli. Terminalia bellirica has been used in various eye disorders and when combined with honey, it has shown antibacterial properties against Micrococcus pyogenes and E. coli. Emblica officinalis is effective in treating inflammation of the eyes; flowers are known to have a cooling effect on the eyes. Curcuma longa has anti-inflammatory activity, which is comparable to hydrocortisone acetate and phenylbutazone and the antibacterial activity was comparable to penicillin and streptomycin on Gram +ve and Gram –ve organisms. Ocimum sanctum possesses antimicrobial and anti-inflammatory activity, which help in healing inflammation. The fruits of Cinnamomum camphora showed antibacterial activity against several Gram +ve and Gram -ve bacteria. Mel despumatum has been recommended as an effective remedy in conjunctivitis. Honey is reported to prevent infection and promote healing; the effects of its ingredients can be compared with antibiotics. Honey is easily absorbed into the tissues and was found helpful in preserving healthy cornea. It has bactericidal as well as bacteriostatic properties. It inhibits the growth of E. coli, Haemophilus influenzae, Proteus, Pseudomonas aeruginosa, S. aureus, Streptococcus pyogenes, Salmonella species and Vibrio cholerae.

The individual herbs mentioned above were standardised by gas chromatographical method using Netel chromatograph. The eye drops were manufactured under sterile conditions in aseptic area using 0.2 µ sterile filtration units.

MATERIALS AND METHODS
Twenty patients of either sex aged between 20 and 50 years with the signs and symptoms of acute and chronic conjunctivitis were enrolled in the trial from the out-patient department of the Government Ayurvedic Medical College, Bangalore. Patients with predominant keratitis, corneal ulcer, kerato conjunctivitis sicca, genetic disorders, uncontrolled diabetes and hypertension were excluded from the study. Written informed consent was obtained from all the patients involved in the study. After a careful examination of the signs and symptoms, they were classified according to the predominant dosha involved. A conjunctival smear was sent for culture. After incubation at 37°C for 18-24 hours, growth was identified and was subjected to gram staining for Gram +ve and Gram -ve organisms.

The patients were advised to instil OphthaCare eye drops at a dose of 2 drops in both the eyes every two hours in acute cases till the inflammation subsides and 2 drops, 3-4 times a day, in chronic conditions for 7-15 days.

RESULTS
Majority of patients responded to the treatment showing the significant symptomatic improvement within one-week period. The major signs of conjunctivitis including conjunctival discharge and hyperaemia were resolved within one-week period.
Table 1 shows the mean score for conjunctival discharge dropped from 2.18 to 1.28 on 7th day and 0.63 on 14th day. So the hyperaemia was resolved from an average of 1.96 to 0.9 on 7th day and to 0.2 on 14th day. The conjunctival hyperplasia showed gradual resolution as much significant effect was not seen in the 1st week, however the score dropped from 1.75 to 0.5 on 14th day. The conjunctival follicular formation also considerably suppressed on the 14th day as the score dropped from 1.90 to 0.72. There was significant influence on chemosis score, which was also dropped from 1.84 to 1.07 on 7th day and to 0.5 on 14th day.

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Score (Mean ± SE)</th>
<th>Day 0</th>
<th>Day 7</th>
<th>Day 14</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Right</td>
<td>Left</td>
<td>Right</td>
<td>Left</td>
</tr>
<tr>
<td>Hyperaemia</td>
<td>1.15 ± 0.18</td>
<td>1 ± 0.02</td>
<td>0.4 ± 0.11*</td>
<td>0.35 ± 0.1*</td>
</tr>
<tr>
<td>Irritation</td>
<td>0.95 ± 0.05*</td>
<td>0.95 ± 0.05*</td>
<td>0.75 ± 0.09</td>
<td>0.65 ± 0.09</td>
</tr>
<tr>
<td>Discharge</td>
<td>1.7 ± 0.12*</td>
<td>1.7 ± 0.12*</td>
<td>0.85 ± 0.08*</td>
<td>0.7 ± 0.10*</td>
</tr>
</tbody>
</table>

n=20; 
*<0.01, *<0.05 and *<0.001

There appears that the constituents of the product have anti-inflammatory and anti-infective properties, which is seen in the relief of symptoms particularly conjunctival discharge, hyperaemia and chemosis.

Majority of the patients have shown presence of *S. aureus* and coagulase -ve Staphylococci as the causative organism. The treatment with OphthaCare eye drops has shown significant eradication of *S. aureus*.

Open clinical trial with OphthaCare eye drops showed that there was a symptomatic as well as microbiological alleviation of the symptoms of conjunctivitis. However, the potential benefit of this can be further confirmed by continuing the trial in a randomised fashion using placebo control.

**DISCUSSION**

Causative factors of conjunctivitis, particularly coagulase -ve *S. aureus* infection, appeared to be very frequent in this study. The disappearance of organism after the treatment reveals that the constituents of the OphthaCare eye drops has antimicrobial activity against *S. aureus*. The symptomatic relief in conjunctivitis, which was found to be significant in terms of inhibition of hyperaemia, reduction in conjunctival discharge, alleviation of conjunctival follicular hyperplasia and chemosis suggests the additional role of anti-inflammatory properties of various constituents.

The herbs used in OphthaCare eye drops are reported to have various pharmacological activities, which in combination has produced a synergistic effect in terms of antimicrobial
and anti-inflammatory activities. Hence, OphthaCare eye drops are beneficial in patients with acute and chronic conjunctivitis which appears as epidemic in certain seasons of the year.

REFERENCES