

A clinical study on Ayurvedic management of Keratoconus

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Abstract

Keratoconus is corneal disorder in which there is a progressive thinning of the central part leading to conical protrusion and thereby uncorrected visual error, usually found in second and third decade. In a population based on cohort analysis, the Central India Eye and Medical Study reported the prevalence of Keratoconus in central India to be 1.4%. The contemporary science advocates power glasses, contact lenses, corneal implants, corneal collagen crosslinking with riboflavin (C3R), Laser assisted surgeries and Keratoplasty in Keratoconus. It is difficult to find out an exact reference about Keratoconus condition from classical texts of Ayurveda. In Ayurveda, the clinical features related to visual disturbances are seen only in *Drushtigata Rogas*. Hence, all cases of visual disturbances can be correlated under the broad heading of the *Timira – Kacha – Linganasha* complex. Open labeled, observational, 28-week study using selected Ayurvedic medicines and therapies was conducted on 30 subjects with the diagnosis of early or advanced Keratoconus, who were between ages of 18 to 45 years, : 28 weeks IPD/OPD trial with 3 In-patient visits and 3 telephonic visits. The in-patient treatment duration for each patient was 14 days (± 3 days), which included treatments like Nasyam, Sekam, Anjanam, Aschyotanam, Tharpanam, Sirodhara / Sirovasthy, Pichu and Nethra Bandhana. The study was conducted using black box design,: the study did not focus on assessment of any therapeutic protocol in specific, but the treatment principles of the entire Ayurvedic system in treatment of Keratoconus. The subjects who satisfied the selection criteria entered into the study and received treatment for 24 weeks followed by End of Study visit and a 4-week follow up visit. The duration of the study for each subject was approximately 7 months (28 weeks). All statistical tests were two-sided with a significance level of = 0.05. Data were summarized using descriptive statistics (number of subjects [n], mean, standard deviation [SD]) for continuous variables, and using frequency and percentage (i.e., number and proportion of subjects – n, %) for discrete/categorical variables, unless specified otherwise. Paired sample t-test was used to assess the outcome of the trial. LogMAR was used to convert visual acuity observed using Snellen's Chart to reach decimal values. KISA% was used to assess the changes in topography from baseline to end of treatment. The study showed clinically and statistically significant changes in Corneal Topography, Visual Acuity and Refraction. Visual acuity showed a 7.3% improvement ($p < 0.05$) and refraction showed a reduction of 10% ($p < 0.05$) KISA% showed a reduction of 14.6% ($p < 0.05$).

Keywords: Keratoconus, Ayurvedic treatment, corneal topography changes

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