

A REVIEW ON AYURVEDIC MANAGEMENT OF KERATOCONUS

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ABSTRACT

Keratoconus is a disorder of the eye which results in progressive thinning and bulging of the cornea. This may result in blurred vision, double vision, nearsightedness or myopia, astigmatism and light sensitivity. In Ayurveda there is no direct reference for keratoconus, based on symptoms it can be considered as *timira*. *Timira* included under *drustigata roga* which further leads to *Linganasha* as its complication, this can correlate to advanced condition of keratoconus. Considering the symptoms and *dosha dushya* involment *Vatahara* and *Brumhana* line of treatment in the form of *tarpana* and *pindi* is more beneficial in keratoconus.

KEYWORDS: *timira, linganasha, keratoconus, astigmatism, brumhana, vatahara.*

INTRODUCTION

Keratoconus is a non-inflammatory bilateral ectatic condition of the cornea leading to defective vision.

Etiopathogenesis: it is not clear. Various theories proposed so far label it as developmental condition, degenerative condition, hereditary dystrophy and endocrine anomaly¹.

Symptoms:

- Blurred vision,
- Frequent changes of glasses prescription or vision that cannot be corrected with glasses.
- Symptoms of keratoconus generally begin in late teenage years or early twenties, but can start at any time.

Other symptoms include:

- Increased light sensitivity
- Difficulty driving at night
- A halo around light and ghosting (especially at night)
- Eye strain
- Headache and general eye pain

-Eye irritation

-Excessive eye rubbing².

On the basis of previous research work, keratoconus can be considered as *Timira*³ and also supporting to this above statement, *Vataja Timira Lakshana* like *vyavidha darshana* (the straight line of the object appears to be curved), *avila darshana* (blurred vision or hazy vision), *Chandra, deepadya anekatvam* (the luminous objects like moon, lamp are appears to be multiple)⁴ are present, the same symptoms are observed in keratoconus disease. Considering these symptoms *Vataja Timira* can be correlated with the keratoconus.

Signs:

- Window reflex is distorted.
- Placid disc shows irregularity of the circle.
- Keratometry depicts extreme malalignment of mires
- Photokeratotomy reveals distortion of circles.

-Slit lamp Examination: may shows thinning and ectasia of central cornea, opacity at the apex and Flescher's ring at the base of cone, folds in descemet's and bowman's membranes.

-Nipple cone (<5mm) steep curvature

-Oval shape (5-6mm) ellipsoid shape

-Oval cone (>6mm) globe like⁵

TREATMENT

Spectacle correction may improve vision in very early cases. However, later in the course of the disease falling vision may not be corrected by glasses due to irregular astigmatism.

Contact lenses: Rigid gas permeable usually improves the vision in early cases. Intrastromal corneal ring are reported to be useful in early cases. Corneal collagen cross linking with Riboflavin (C3R) may slow the progression of diseases. Keratoplasty may be required in later stages. Deep anterior lamellar keratoplasty (DALK) or penetrating keratoplasty (PK) may be performed⁶

General treatment for timira is gratapana, Nasya and other Shodhana karma, Siravydha, Anjana, tarpana, Pindi and other kriya kalpas⁷

Vataja Timira treatment: Ghritapana-Dashamula ghrita used for pana. Nasya karma with sthiradi ganasiddha taila, madhuradi ganasiddha taila etc. For Anjana- vasadyanjana, saindhavadi putapaka anjana etc⁸.

If timira is not treated in time it leads to linganasha, it is better to intervene at the earliest to arrest the further progression of disease. Here considering the concept of *vata vruddhi* in timira the treatment should be *vatahara*⁹ and *Bruhmana*³ in the form of Tarpana and Pindi are more appropriate.

DISCUSSION

In *Ayurveda*, *vata* is responsible for formation of normal body parts. Here in this concept vitiation of *vata* can be understand in different view, if *Vayu* in *garbhavasta* gets vitiated due to *dauhrud avamana* leads to *vikrutakshi*¹⁰ and *Krishna mandala* is originated from *vayu Mahabhuta*¹¹, any defect in function of *vata* leads to *Krishna gata roga*. While describing *sadyaasadyata* of *kshata shukra*, outer part of cornea is mentioned as *twaka*¹². So, keratoconus is considered as *twakagata vata*, described by *charaka* which may be *Beeja Janya*. Based on signs and symptoms it holds good with *Vataja timira lakshana*. Same etio-pathology get in contemporary science here also there is no exact cause for keratoconus. Here thinning of cornea is mainly due to the vitiation of *vata* which leads to progressive myopia and astigmatism. Based on the symptoms of keratoconus, this can correlated to *vataja timira*.

Considering the dosha involvement the treatment should be *vatahara*. In this disease sthanika treatment like tarpana and pindi works good.

Action of tarpana

*Tarpana*¹³ exerting direct pressure up on the cornea, there may be changes in the refractive index of the cornea and *ghrita* has the quality of transpassing into the minute channels of the body, it enters deeper layer of the *dhatu*s and cleans the every minute part. The lipophilic action of the *ghrita* facilitates the transformation of the drug to the target organ finally reaches the cell because the cell membrane also contains lipids. The corneal epithelium is permeable to lipid soluble substances; moreover the

medicine used for *Tarpana* is mainly *Ghrita*. *Grita* has high levels of antioxidants which can reduce the damage of thinned cornea by allowing more tissue contact time and bioavailability of the drug from the corneal surface¹⁴.

Tarpana is indicated in *Timira*¹³ the commonly used *Ghrita* yogas are *jeevantyadi Grita*, *Triphala Grita*, *Mahatriphala Grita*, *Shatavaryadi Grita*.

Jeevantyadi grita has high levels of antioxidants, which reduce the oxidative stress and damages of thinned out cornea. It helps in bringing down the corneal protrusion by *dosha shamana* and mechanical pressure²

In contemporary science C3R and INTACS is advice to strength the stroma tensile and flatten the central cornea, but there is no assurance of cure as their methods are not without complication.

Action of *pindi*

In *Pindi*¹⁵ medicine is absorbed through the skin of lids and due to heat of *pindi* local temperature is increased resulting in vasodilatation¹⁶ By practice the *Pindi* can advice to overnight, that will help to flatten the corneal curvature by its mechanical pressure and strengthen the cornea by medicine effect. *Pindi* is incated in *Shota* and *Kandu* the specific drugs like *Sunti* (*Zingiber officinale*) and *Nimbadala* (*Azadirachta indica*) should be pasted in hot water with little of *Saindhava* will help in all the inflammatory conditions of eye¹⁷.

In contemporary science contact lenses are advised to correct the myopia and astigmatism, aspheric lenses with high eccentric value helps to flatten the cornea quicker compare to other lenses the main

effect of the contact lenses is to provide a best vision to keratoconus patient, the same effect get by *Pindi* procedure.

CONCLUSION

In contemporary science there is no way to predict how it will progress. Regular usage of contact lens may cause infection and corneal ulcer. Laser is also not proper treatment for keratoconus. The aim of therapeutic approach is slowdown the progression of diseases and strength the collagen fibers to avoid the further bulging by *Vatahara* and *Brumhana chikista*.

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