



## **MANAGEMENT PRINCIPLE OF DRY EYE DISEASE – A CRITICAL APPRAISAL**

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### **ABSTRACT:-**

Dry eye disease also can be represented as *keratoconjunctivitis sicca*. It is a multi-factorial disorder of tears and ocular surface. The prevalence of this disease rises dramatically with the increasing age, hinders performance and leads to poor quality of life. Various contributory factors of dry eye are advanced age, female sex, abnormal corneal innervations, vitamin deficiency, hormonal imbalance, contact lens use, infection, environmental stress, ophthalmic surgery and some medications. The conventional approach in the treatment of dry eye is lubricating eye drops and tear substitutes. Frequent uses of these eye drops again causes dry eye. By considering all these limitations of modern science it is need of the hour to discover and establish a harmless management of Dry eye disease. In Ayurveda available drug or procedures like netra Kriyakalpa are well established holistic approach. So it is necessary to understand the pathophysiology and possible mechanism of drug pharmacotherapy.

**Keywords-** Tear, Tarpana, Shushkaksipaka, Dry eye disease, keratoconjunctivitis sicca.

## INTRODUCTION-

Dry eye disease (DED) also known as *keratoconjunctivitis sicca*, is a multifactorial disorder of the tears and ocular surface<sup>1</sup>. Tear secretion provides continuous moisture and lubrication on the ocular surface to maintain corneal and conjunctival health, comfort and vision. Lacrymal gland, goblet cells and meibomian glands produce secretions, which compositely form a layer on eye known as tear film. Abnormalities of any components of the secretion (quantitatively or qualitatively) lead to the instability of tear film, resulting in drying of the ocular surface. Definition of dry eye disease is also based on the concept of the three layers of the tear film<sup>2</sup>. A number of contributory factors affect the severity of dry eye syndrome including autoimmune disease, environmental factor, use of contact lens, hormonal changes, anatomical abnormalities, chronic inflammation or infections and iatrogenic factors such as medications or surgery<sup>3</sup>. Neurotransmitters, hormones, and immunological processes play an important role in the regulation of the tear production by the lacrimal gland<sup>4,5</sup>. Secondary factors such as pathological changes to the eyelids, cornea or conjunctiva can themselves disturb the normal function of the tear film. Prevalence of DED rises dramatically with increasing age, and as older populations grow, so too will the burden of DED-associated morbidity.<sup>5</sup> It is estimated that almost 5 million Americans 50 years and older have DED, and a lot of others experience episodic symptoms of dry eye<sup>2</sup>; of these, approximately two-thirds are women.<sup>3-4</sup> Dry eye disease can hinder the performance of activities of daily living, and associated with an overall decrease in quality of life.<sup>6</sup> Due to this Patients with DED are significantly more prone to anxiety and depression.<sup>12</sup>

## AYURVEDIC PERSPECTIVE

There are so many diseases in Ayurvedic classics which may closely resemble with dry eye and can be treated on the basis of clinical signs and Symptoms. Some of them like- *Suskakashipaka*<sup>13</sup>, *Suktika*<sup>14</sup>, *Avranashukra*<sup>15</sup>, *Krischonamilan*<sup>16</sup> (Vagbhatta) have maximum similarity to Dry eye disease described in modern Ophthalmology.

### *Clinical presentation of Suskakashipaka*<sup>13</sup>:

In this condition eyes were affected mainly by deranged *vata* dosha. Characteristics of the diseases are dryness, unwettability loss of transparency thickening and wrinkling of the *vartmakala* or whole eye, blurred vision, inability of closing and opening eye due to thickening of the eyelids (Blepharospasm). Acharya Vagbhatta added pain, Burning sensation and pthisis of the eye ball in these symptom. (Su.u. 6/26 ,A.H.U.15/16)

### *Clinical presentation of Suiktika*<sup>14</sup>:

Dirty white, brownish colour as well as flesh coloured raised spots are situated on the white part of the eye. These spots have luster of an oyster shell or pearl shell alongwith dirty glass like appearance of the conjunctiva. Acharya Vagbhatta has mentioned that this disease is associated with diarrhoea, polydipsia and Pyrexia with pain and burning sensation in the eye. (Su.u. 4/7 ,A.H.U. 10/11)

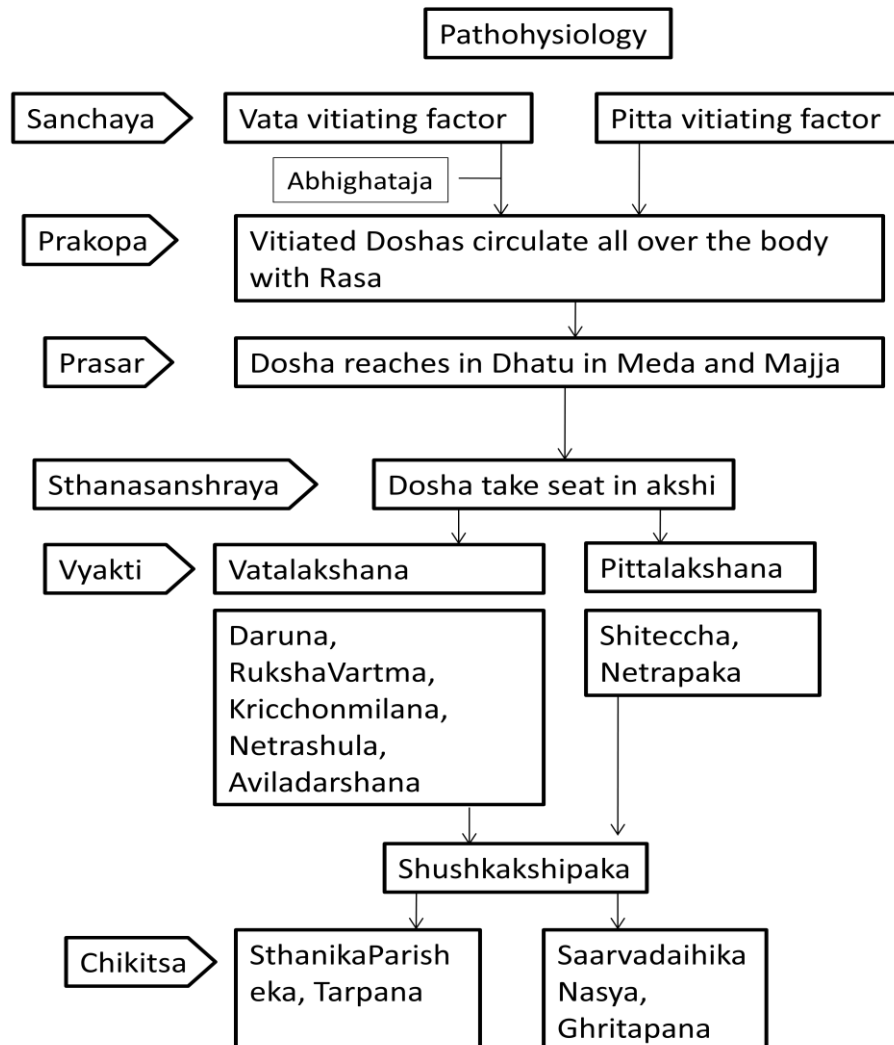
### *Clinical presentation of Avrana-sukra*<sup>15</sup>:

Sushruta said that *Avranasukra* is characterized by the appearance of haziness of cornea, followed by inhibition of lacrimation. Thus this condition seems to be the nearest to the clinical picture of Corneal xerosis. (Su.u. 5/8 ,A.H.U.10/25)

PATHOPHYSIOLOGY OF SUSHKAKSHIPAKA-

As per description above Dry eye condition could be more related with Shuskaksipaka in terms of etymological<sup>17</sup> derivation and clinical picture,<sup>13</sup> thus taken into consideration in this paper. Shuskaksipaka is mentioned in the classical literature of Ayurveda under sarvagata netraroga (diseases affecting all parts of eye). So Shuskaksipaka described in our ancient classics can be more closely compared with Dry eye conditions<sup>18</sup>.

According to Ayurveda, dry eye is not merely an ocular disorder; rather than it is one of the manifestations of the deranged metabolism/depreciation of body tissue. A case study done 33yr old female patient with dry eye syndrome from 8yrs was very well responded with vata-pitta shamaka treatment local as well as systemic. It advocates about deranged metabolism/depreciation of body tissues<sup>19</sup>. *Ashru* (tear film) is the byproduct of *Rasa*, *Meda*, and *Majja dhatus* and without normalizing these at systemic level, we cannot treat dry eye syndrome optimally.



MANAGEMENT PRINCIPLE-

Tear substitute are the only treatment modality with modern medical science. The duration of action of these tear substitutes is variable and are advised as per the need, only providing symptomatic relief. The preservative present in these formulations causes Dry eye, where as those available without preservatives are not cost effective.

A holistic approach is needed to treat this condition. It can be divided as local and systemic approach.

1) Local- vata-pitta shamaka local treatment can be given for lubrication and quick relief.

- Anjana(collyrium)- many Anjana has been given as treatment for shushkakshipaka
  - Saindhava, Daruharidra, Shunthi are triturated in Matulunga Rasa and Cow ghee (clarified butter) and breast milk are added and used as collyrium. Su. U.9/20.
  - Cow ghee(clarified butter) processed with Haridra and Daruharidra, Saindhava(salt) should be added later/ Sunthi with milk Su.U.9/23.
  - Anupa Vasa with Saindhava and Sunthi Su.U.9/23 A.H.U.16/29.
  - Sunthi with breast milk A.H.U.16/29.
  - Kesha Masi - scalp hair ash prepared by burning it by a special pharmaceutical method mixed with clarified Goghrita. A.H.U.16/30.
- Netra tarpana-
  - withcow ghee Su.U.9/23.
  - with Jivaniya ghrita A.H.U.16/28
- Netra parisheka-
  - cold water with saindhava lavana Su.U.9/22
  - lukewarm milk with saindhava lavana A.H.U.16/28

2) Systemic-

- Snehapana- cow ghee Su.U.9/22Ghritapana- A.H.U.16/28
- Nasya-nasya is a therapeutic procedure in which medicine in form of drops are instilled in nostrils. The instilled medicine by virtue of its active principle acts on the local mucosa and thereafter gets absorbed to systemic circulation and exerts desired pharmacological actions. Many formulation have been given by various Acharya-
  - Jivaniya ghrita Su.U.9/22 A.H.U.16/28
  - Anutaila Su.U.9/22

#### CONCLUION-

According to Ayurveda, Dry eye is not merely an ocular surface disorder, rather this is one of manifestation of the deranged metabolism of body tissues. Ashru (tear film) is the derivative of Rasa, Meda and Majja dhatu.<sup>20</sup> As this disease involves Vata, pitta Dosh and Rasa, Meda and Majjadhatu, mere local treatment are not helpful rather a multidimensional systemic approach is the mainstay for rational management of Shushkakshipaka.

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