



KRIYAKALPA: A REVIEW ON OCULAR THERAPEUTICS

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ABSTRACT

Among the eight branches of Ayurveda, Shalaky Tantra is a branch which deals with the Urdhwajatruvikaras (vyadhi above the jatru). In Shalaky tantra prime importance is given to eyes. "Sarvendriyanam Nayam Pradhanam". It is of upmost importance to maintain the health of the eyes and alleviate any disorders in an effective manner. The Acharya have described detailed local therapeutic procedures to cure ophthalmic disorders in simple and effective methods. Acharya Susruta named them as "Kriyakalpa". Kriyakalpa is the treatment that refers to the procedures in which medications/drugs are applied in or around the eyeball. It is very important to keep the eyes healthy, as Acharya Vagabhatta stated, without sight the world becomes dark for the individual [1]. As such, in this article we will expound briefly the various Kriyakalpa mentioned in netra roga.

KEYWORDS : Urdhwajatru-vikaras, Kriyakalpa, Netrarogas, Ocular Treatments, Ayurveda.

INTRODUCTION

Shalaky Tantra, the branch of *Ayurveda* which deals with the *Urdhwa-jatrugata rogas* (i.e *karna, netra, mukha, nasa, sirogat rogadi*) has given prime importance to eye disorders as eye is the most important sense organ present in the human body because through the vision we are able to gain knowledge, interact socially and develop intellectually. *Acharya Vagbhata*, stated that Day and night become the same for those who are without vision. Even the other sense organs depend on eyesight for their accuracy. Hence it is importance to maintain the proper functioning of the eyes. *Kriyakalpas* are the specialized ocular treatment modalities explained in *Ayurveda*.

No other single-organ is described with such specific and exclusive modality of treatments, thus the importance of eye and eye disorders are highlighted in this science.

The word "*Kriyakalpa*" itself consists of two distinct and separate words that is „*Kriya* and „*Kalpa* . *Kriya* refers to the therapeutic procedures or medical treatment that are undertaken or carried out to cure the diseases and the word *Kalpa* refers to the specific medicine or formulation that is selected for use in that specific disease indication.

Kriyakalpa are basically the procedures that are described where medicated *Ghee* and *Churna* (powdered formulations) are administered either directly or indirectly (above or around) the eyes as an effective treatment modality. *Kriya kalpa* is a basic treatment of eye disease like *panchakarma* in *kayachikitsa*.

Acharya Susruta has clearly mentioned 5 types of *Kriyakalpa* which are.[2]

1. *Tarpana* (Therapeutic retention of medicated liquids over the eyes).

2. *Putapaka* (Installation of medicated juices in the eyes, which is extracted after heating a bolus of herbs, along with goat meat, to get the concentrate juice of the herbs).

3. *Seka* (Ocular therapy by streaming).

4. *Anjana* (Collyrium).

5. *Aschyotana* (Eye drops).

Acharya Sharangdhara named them as *Netra Prasadana Karma*. These are seven in number[3]. In addition to above five,

6. *Pindi* (Medicated paste wrapped in cloth piece or gauze into a bollus form is put over the eyeball till prescribed duration.)

7. *Bidalaka* (Application of medicated paste over closed eyelid except eye lashes.)

CLASSIFICATION AND INDICATION OF KRIYAKALPA-

These *kriyakalpa* in brief are described as:

1. *Tarpana* – This give nourishment therapy to the eye and cures *vata-pitta vikaras*. Medicine mainly lukewarm medicated *Ghrta* or *Taila* is filled over eye upto complete immersion of eye lashes for specific time by making circular boundary around orbital fossa using dough or divers goggle. Eye should be closed and opened regularly.

Before doing *Tarpana*, *Kaya Shodhana* by *Vamana*, *Virechana*, *Basti*, *Raktamokshana* or *Shiro Shodhana* with *Nasya* should be done.

Indications- Mainly in Vata predominant condition like, Visual disturbances: *Timir*, *Aviladarshan*, Dry eye condition, *Shushkakshipaka*, *Parishushka*, *Darun vartma*, *Abhishyanda*, *Adhimanth*, *Anyatovata*, *Siraharsha*, *Sirotpata*, *Stabdha* Atrophic and degenerative changes of *Drishtipatal* and *Drishtinadi*, Palsies[4].

Tarpana duration –

a) According to *Dosha-*

i. *Vata*- 1000 *Matra*

ii. *Pitta* - 800 *Matra*

iii. *Kapha* - 600 *Matra*

b) According to *Adhithana*

i. *Vartma*- 100 *Matra*

ii. *Sandhi* - 300 *Matra*

iii. *Shukla* - 500 *Matra*

iv. *Krisna* - 700 *Matra*

v. *Drishti*- 800 *Matra*.

vi. *Sarvagata*- 1000 *Matra*[5].

2. *Putapaka* - Procedure of *Putapaka* is same as *Tarpana*, but medicine prepared is *Swarasa* extracted by *Putapaka Vidhi*. Contact time is same as *Tarpana*. It can be done after *Tarpana* or independently.

Indications: Those who are suitable for *tarpana*, *nasya* and *snehpana* are also suitable for *putpaka*. [6]

Classification-

a) *Snehana* (200 *Matra*) - *Vata Roga*

b) *Ropana* (300 *Matra*) - *Pitta Roga*

c) *Lekhna* (100 *Matra*) - *Kapha Roga*

3. Seka- *Seka* is defined medicated solution (liquid) poured as *sookshma dhara* (stream) from 4 *angula* on closed eye continuously for specific time according to *Doshas*. It is more beneficial in those conditions which are strong and cannot cure with *Aschyotana*. [7]

Indications- In acute and inflammatory condition of eye diseases like *Vatabhishyanda*, *Raktabhishyand* etc [8].

Classification –

- i) *Lekhna* (200 *Matra*) - *Kapha Roga*
- ii) *Ropana* (600 *Matra*) - *Pitta and Rakta Roga*
- iii) *Snehana* (400 *Matra*) - *Vata Roga*

4. Aschyotana - *Aschyotana* is *Adya Upakrama* (first line of treatment in all eye disorders)[9] in which medicated drops are instilled into open eye from *dvay angula* (approximate 2") [10] height at *Kanineeka Sandhi* and it should be retained in the eyes for 100 *vakmatras*. The widely used medicated drop for *Aschyotana* is *Triphala Kwath*.

Indication- Initial stage of eye disease when *Doshas* are not severely vitiated specially *Pitta Dosh*. It is used in eye condition like mild pain, redness, watering, foreign body sensation, itching, burning sensation, congestion of vessels etc. It is contraindicated in night.

Classification-

- i) *Lekhna* (8 drops) - *Kapha Roga*
- ii) *Ropana* (12 drops) - *Pitta and Rakta Roga*
- iii) *Snehana* (10 drops) - *Vata Roga* [11].

5. Anjana - It is topical application of medicinal paste to inner surface of lid margin or in conjunctival fornix with the help of *Anjana Shalaka* or finger from *Kanineeka Sadhi* to *Apanga Sandhi*. [12]

Indications- When *Doshas* are located only in eyes and acute symptoms of ocular problem has subsided. Disease should be clearly manifested indicating its *Doshadushti* and *Adhithana*. [13]

Classification -

- a) *Lekhna* - *Kapha Roga*
- b) *Ropana* - *Pitta and Rakta Roga*
- c) *Prasadana* - *Swastha*

6. Pindi - It is medicated paste kept in thin cloth and applied on eye lid named *Pindi*. [14]

Indications- Acute stages of all eye diseases in general and *Abhishyanda*, *Adhimantha*, *Sotha*, *Netrakandu* [15]. It reduces inflammation produced due to trauma or wound.

7. Bidalaka - It is application of medicated paste to eyelids externally except at eye lashes. Indications Acute stages of eye disorder. It is used in condition like burning sensation, swelling, discharge, redness, pain, foreign body sensation etc.

Classification- (according to thickness of medicated paste) [16]

- i) 1 *angula* thick- *Uttammatra*
- ii) 1/3 *angula* thick- *Madhyama matra*
- iii) 1/4 *angula* thick- *Heena matra*

MODE OF ACTION –

Systemic route has limitation because of blood aqueous barrier larger size molecule cannot cross this barrier and do not enter in eye. Various medicines used in *Kriyakalpa* are absorbed through *Akshikosh*, eyelid (*vartma*) and orbit,

Sandhi (junctional area), *Sira* (blood vessels), *Shringataka Marma* (vital point), *Gharana* (nasal region), *Aasya* (oral cavity), *Strotas* (minute channels). This absorption of medicine will expel vitiated *Doshas*. [17]

In *Aschyotana* and *Seka* medicine absorbed by mucous membrane, vascular system and through skin of lids. Decoction of raw drugs used as medicine so its tissue contact is very less and gets diluted with tears and drain into nasolacrimal duct. In *Anjana* tissue contact time is high; drug concentration is also high hence absorption is maximum.

In *Tarpana* most medicine is absorbed through cornea and conjunctiva. Corneal epithelium and endothelium is lipophilic so only fat soluble drug readily penetrates. Stroma is hydrophilic hence only water soluble drug can penetrate the stromal layer. To penetrate all layers of cornea drug should be lipophilic as well as hydrophilic in nature [18]. Sclera allows free passage of big size molecules. Medicine used in *Pindi* is absorbed through skin of lids and due to heat of poultice local temperature is increased resulting in vasodilation, help to drain toxins from eye. In *Bidalaka* medicine is absorbed through skin as in *Pindi* and *Seka*.

CONCLUSIONS

As in *Ayurveda*, we are applying ophthalmic therapeutics either in the form of local therapy i.e. *Kriyakalpa* or in the form of systemic use i.e., oral *Chakshushya dravyas*. The main aim of any pharmacotherapeutics is the attainment of an effective concentration at the site of action for a sufficient period of time to elicit the response. In practice, therapeutic effect is found in all types of *Kriyakalpa*. Various drugs can be selected according to the stage and types of the disease and can be used in various *Kriyakalpa* procedures according to need. Today current methods of drug delivery exhibit specific problems that scientists are attempting to address.

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