ROLE OF KRIYAKALPA IN THE MANAGEMENT OF NETRAROGAS

Dr. Pravin Chavan, Dr. Gitanjali Kundlik Mane
1Prof. and Guide, 2PG Scholar
Irpr ayurved medical college Islampur
Dr.pravin999@gmail.com, Dr.gitanjalimane0318@gmail.com Mob:982233861, 9767040163

ABSTRACT- The Promotion of the visual acuity was considered as one of the priorities in the branch of shalakyatantra of Ayurveda. Many procedures and formulations have described to cure the ophthalmic disorders. Present conventional system of medicine has topical and systemic administration of drugs to the eye which are highly inefficient and there is a need for controlled, sustained release particularly for conditions that affect all parts of the eye. Sushruta the father of ancient Indian surgery, advocated 'kriyakalpa' is the main therapeutic procedure for NetraRogas, along with other forms of treatment. He has described this in a separate chapter in uttartantra of sushrutasaṃhitā. Some of the proven principles of management procedures and medicaments include intake of purified medicated ghee (Ghritarpana), nourishing eye both therapy (Tarpana), and processed liquid instillation through nostrils by drops or powders (Nasya), eye both therapy (pariseka), application of medicated paste on eye lids (Bidalaka) and collyrium (Anjana). These procedures improve the vision by strengthening of the ciliary muscles, maintaining unctuousness of the eye ball, proper accommodation of the lens, delays the senile muscles, maintaining unctuousness hand these procedures also helpful in dealing with inflammatory conditions like conjunctivitis, hordeolum, Corneal ulcer, staphyloma, panophthalmitis etc. Thus kriyakalpa can be done in healthy as well as diseased eye conditions to improve the ophthalmic health.

KEYWORDS– kriyakalpa, eye diseases, uttarTantra, shalakyaTantra.

INTRODUCTION– Kriyakalpa is the basis of the ophthalmic disorders, aspanchkarma is the basis of kayachikitsa when we refer to our classics for the therapeutic measures adopted in the management of eye diseases, we find that the management includes many of the topical treatments along with systemic ones. The reason might be that the drugs administered systematically may not cross the blood aqueous, blood-vitreous and blood-retinal barriers. Ancient seers have designed many unique routes of drug administration and also varied formulations to suit the anatomy, physiology and pathological status of all parts of the body and more importance is given to design eye medicaments. The eye being a very vital and sensitive part was of main focus while designing kriyakalpas. Charaka-samhita deals with the diseases of the entire body on the medical lines without paying any special reference to the disorders of the eye, ear, nose and throat (1).

However, some references are available regarding the eye ailments saying that eye disorders should be treated with the help of mentioned three kriyakalpa in chikitsasthana i.e. Bidalaka, Aaschyotana and Anjana (2). Acharyasushruta mentioned five kalpa i.e. Seka, Aaschyotana, Anjana, Tarpana and Putpaka (3). Acharyasharangadharasamhita has described complete chapter for netraroga with many formulations and bahirgunthanavidhi for acute eye condition (4). AcharyaBhavamishra has meant the same seven types of kriyakalpa as that of sharangadharasamhita while chakradatta has described complete chapter for netraroga with many formulations and bahirgunthanavidhi for acute eye condition (5). Which include seka and Aaschyotana.
(continuous pouring or instilling drops). Now all these are Topical measures came into play and these are called as ‘kriyakalpas’

Kriyakalpa(6)- kriyakalpa is the main therapeutic process for ophthalmology in shalakyatanta as thepanchakarma the word kriyakalpa built from two words kriya and kalpa. Kriya means therapeutic procedures for chikitsa used to cure the disease and kalpa means practicable, possible, manner of acting, a prescribed rule so kriyakalpa means specific formulation used for therapy in Ayurveicophthalmology. It includes selection of specific procedure, preparation of special drug form and finally its proper application to the eyes. When we refer to our classics for the therapeutic measures adopted in the management of eye diseases, we find that the management includes many of the topical treatment along with systemic ones. The reason might be that the drug administered systematically may not cross the blood aqueous, blood-vitreous and blood-retinal barriers. Now the topical measures came into play and these are called as ‘kriyakalpas’

Etymology- kriyakalpa is formed by two words as kriya and kalpa word kriya refers here to therapeutic procedures which cures the disease without causing any adverse effects while the word kalpa indicates the specific formulations adopted for the therapeutic procedures. Hence, the word kriyakalpa literally means to perform proper treatment who opines that kriyakalpa includes various preparations like Tarpana, putapaka etc. for the treatment of eye diseases.

Definition of kriyakalpa – No specific definition of kriyakalpa

Classification and Indication of kriyakalpa- Acharya Astanga Hridaya indicated for Tarpanain following symptoms and diseases.

<table>
<thead>
<tr>
<th>Sr no.</th>
<th>Eye Symptoms(8)</th>
<th>Sr.no</th>
<th>Eye diseases(9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>When a pt. seen darkness/blackouts in front of eyes</td>
<td>1.</td>
<td>Kricchronmeelana</td>
</tr>
<tr>
<td>2.</td>
<td>In severe dryness of the eye</td>
<td>2.</td>
<td>Siraharsha</td>
</tr>
<tr>
<td>3.</td>
<td>Roughness of the eyes</td>
<td>3.</td>
<td>Sirotapatha</td>
</tr>
<tr>
<td>4.</td>
<td>Stiffness of the eyelids</td>
<td>4.</td>
<td>Arjuna</td>
</tr>
<tr>
<td>5.</td>
<td>Falling of eye lashes/Modrosis</td>
<td>5.</td>
<td>Shukra</td>
</tr>
<tr>
<td>6.</td>
<td>Deviated eye ball/squint</td>
<td>6.</td>
<td>Abhishyanda</td>
</tr>
<tr>
<td>7.</td>
<td>Dirtiness of the eyes</td>
<td>7.</td>
<td>Timir</td>
</tr>
</tbody>
</table>

Tarpana Dravyas- 
Ghrita prepared from kwath of kashmary,
Madhuk, Kumuda, Utpala, Urupaga, Kushtha, Brihati, Tamalamamsi, Sariva, Prapaundarika, Darbhamula and Kashera in milk. This Ghrita can be used
*By using Ajayakrita, Agaru, Priyangu, Nalada, and Devadaru prepare ksheerapaka Navaneeta from the curd obtained from this ksheerapaka is used for Tarpana.

Tarpana duration-
(a) According to Dosha
1. Vata-1000 matra
2. Pitta-800 matra
3. Kapha-600 matra

(b) According to Adhisthana-
1. Vartma - 100 matra
2. Sandhi - 300 mantra
3. Shukla - 500 matra
4. Krishna - 700 mantra
5. Drishti - 800 mantra
6. Sarvagata - 1000 mantra

How Netra Tarpana work- By virtue of its sanskararuvartana property Ghrita attains the properties in ingredients without losing its own. Ghrita is supreme in jangamasneha and is Balavardhaka, Ojovardhaka, Vayasthapana, agni Deepana and Dhatuposhaka. Acharyacharaka in sutrasthansnehadhyaya explained that “SnehoanilamHanti” which means that snehana is the supreme treatment for vata Dosa. He mentioned AskshiTarpana as one of the 24 snehpravicharanas in sutrasthana 13th chapter. According to charaka ,Ghrita is effective in subsiding pittaja and vatajisdisordes; It improves Dhatus and is overall booster for improving ojas.

2) Putapaka- In this process the oily(ghee) substance is kept in eye for a specific time by special arrangement simple ghee or oil is used as medicine which is the form of suspension so its particles do not leave the eye and contact time is more and more drugs are absorbed. It will cross corneal epithelium barrier easily due to its lipophilic property putapaka can be done in all those conditions in which Tarpana is done. Those in whom nasya(nasal instillation of medications), Tarpana and snehapanas(Treatment in which medicated oils or ghee is given for intake in metered doses either everyday or as a part of pre-treatment procedure for shodhana vis-à-vis cleansing procedures) are contra-indicated are not eligible to take the treatment after the aggravation of Doshas has been subsided.

Indications- It is indicated when eye get fatigued after the Tarpana i.e. for rejuvenation of eyes putapaka is used to give energy to the eyes to over come from fatigued stage

*putapakayogas are-
*putapaka prepared from nimbatra and lodhra with jala.
*Juice of cooked Ajayakrita, camel, pig with pippali, saindhava, madhu and ghrita prepared as putapaka method. This Ghrita can be used for Tarpana.
*Types of putapaka- There are 3 types

1) Snehanaputapaka(putapaka having or admixed with fats or prepared with unctuous or fat-rich drugs) the below mentioned are used for snehanaputapaka-sneha(ghee or oil), mamsa(meat), vasa(meat soup), majja(bone marrow), meda(fat) and madhuraauhshadha (medicines or drugs having sweet taste).

Indications- It is preferred to be done in a person having Rukshata(excessive dryness in the body) or Rukshanetra(dryness in the eye), vata disorders of the eye.

Duration- It is done for 200 matrakala.

2. Lekhaneeya putapaka(putapaka prepared using drugs having a scraping nature i.e. capacity to scrap off thekapha and fat) the below mentioned drug are mixed together and used for lekhaneeyaputapaka-jangalayakritmamsa(flesh or meat of the liver of animals and birds living in dry and desert regions), shunti(ginger), maricha(pepper), pippali(long peppper), krishna or kantalohabhasma(Ash or calyx of magnetic iron), Tamrabhasma (calyx or Ash of coppper), shankhabhasma(Ash or calyx of magnetic iron).
conch),(Ash or calyx of conch), **pravalabhasma** (calyx or ash of coval), **saindharalavana** (Rock salt), **Dadhi** (curds etc)(15).

**Indications**- It is preferred to be done in a person having **snigdhata** (oily body or excessive unctuousness of the body) or **snigdhanetra** (very unctuous eye). It is preferred to be in **kapha-vata** conditions or **kapha-vata** disorders of the eye.

**Duration**- It is done for time duration of 100 matrakala.

3) **Ropaneeyaputapaka**- prepared by the milk, madhu, ghritajalamansa and tikta rasa dravyas. It is preferred for bringing strength and luster in the eye or in eyes afflicted by merbif(16)

**Indication**- **Pitta**, **Raktaorvata** or eyes afflicted with **vrana** (ulcers) Acharyavagbhata names it as **prasadanaputapaka** (putapaka prepared with nourishing drugs) and indicates its usage in **Drishti Rogas** (vision related disorders).

**Duration**- 300 matrakala

3) **Seka** – Seka is defined medicated solution poured as 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**. In this process “medicine is poured on closed eye (on eye lids) continuously from 4 inches height for a specific time according to Dosha”. So the medicine is absorbed through skin of lids.

Classification and doses(17)-

(a) **Lekha** (200 matra)-kapharoga
(b) **Ropana** (600 matra)-pitta and raktaroga
(c) **snehana** (400 matra)-vataRoga

**Indications**-

*Itching in the eyes *
*watery eyes *
*conjunctivitis *
*Burnings eyes *
*Dry *
*Photophobia *

(4) **Aschyotana**- It is indicated as first procedure in all eye diseases. Instilling medicated Ghee/Drops to eyes for specific frequency. This is usefull in dry eyes, myopia, and allegic and inflammatority eye disorders. **Aschyotana** is adyaupakrama in which medicated drops are instilled into open eye from do angula height at kanineekasandhi most commonly used medicated drop for **Aschyotana** istriphalakwath containing **amalaki** (Emblica officinalis), **Bibhitaki** (Terminati bellirica) and **Haritaki** (Terminaliachebula)

**Indications**- Initial stage of eye disease when **Doshas** are not severely vitiated specially pitta **Dosha**. 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 and Doses(18)-

(a) **Lekhana** (8 drops)-KaphaRoga
(b) **Ropana** (12 drops)-pitta and raktaroga
(c) **snehana** (10 drops)-vataroga
(5) **Aanjana** - The medication applied in the form of ointment to the eyes is termed as *anjana* when the patient has undergone the shodhana therapies of *vamana* and *virechana* and the niraamadosha are causing eye diseases, then *anjana* should be done.

Types - these are 3 types
1) *Lekhanaanjanas* mentioned for kapha predominant conditions.
2) *Ropanaanjanas* for pitta related diseases
3) for *vatajadravyas*

Time of applications of anjana

Prasadanaanjana - There is different opinion regarding the timing of anjana during night due to sleep and in the day time because of the hot rays of sun the becomes weak so it is advised to do *anjana* both morning and evening. While applying in the morning time it should be *kalpasamana* in nature as there is chance of vitiation of the same in the morning while in the evening it is better if it is pitta *samana* as it may make the eye fresh and cool which become weak due to the expossur to hot sun in way the application of in morning and evening surely correct the daily vitiation of *doshas* in a healthy eye. It is not applicable in pathological eye. The other anjanaopinion is regarding the *teekshananjanas*application of, as it contains *katu*, *lavana*, *Amaladrevyas* which of boutique combination of *agnivayu* applying it in day time will again harm the eye as there is hot outside but during night the coolness of the moon helps the eye to recover easily from the ill effect of *teekshnajana* but according to some application of anjana in night should strictly avoided to them the sheet in night it will cause *stambhana* so the drug cant act properly. Acharyasusruta advises to do *anjana* in morning for kapha predominant eye diseases, during diseases it is advised to do in night.

**Mode of action:**

After deciding the type and dose of *anjana* the desired amount of it can be applied in the eye using the different *salakas* mentioned for particular purpose i.e. if *lekhana* is the aim of treatment the *salaka* made of *tamra* (copper) is the best option and for ropana *karma* a *kalalohoya* (iron) *salaka* is better and if *prasadana* is the ultimate aim of treatment one can prefer a *salaka* made of *roopya* (silver), suverna (gold) and anguli (finger) is also mentioned for the application of in eye. After applying spontaneously. Rubbing of the lid forcefully and washing of eye should be avoided just after the application of *anjana* in eye. When the eye becomes free from the gritty feeling developed after the application of *anjana*. *Netraprakshlana* should be performed with suitable decoction while preparing the decoction the factors like disease, *Dosha* and season should be considered. After washing the eye it should be cleaned with a piece of clean cloth. In conditions like severe vitiation of *kapha*. *Dhoomapana* can be advised after *anjana*. *Theekshnajanas* are contraindicated for prolonged use and *prathyanjanas* are advised for correcting the complications if developed during application of *theekshanjanas*.

(6) **Pindi** - Bandaging a medicated bolus over closed eye for a stipulated time period. As soon as kavalika it is indicated *abhishandyadhimantha*.

**Indication:** - Acute stage of all eye diseases in general and particular *abhishandyya* it reduces inflammation produce due to trauma and wound.
7) **Bidalak**: Application of medicated paste over the eyelids for stipulated time. It is application of medicated paste to eyelids externally except at eyelashes.

**Indications**: Acute stages of all eye disorders burning sensation, swelling, discharge, redness, pain, foreign body sensation etc.

**OCULAR PHARMACOLOGY**: These are four methods:

1) **Topical instillation** into conjunctival sac. As in the form of drops, ointments, and gels.
2) **Periocular injection** – these include subconjunctival, subtenon, retrobulbar, and peribulbar injection.
3) **Intraocular route** - intrachimeral injection (into anterior chamber), intravitreal injection (into vitreous cavity).
4) **Systematic administration**: in the form of antibiotics and steroids eyedrops are the simplest and most convenient method of topical application. It is instilled in two forms i.e. aqueous suspension. In solution, drugs are totally dissolved, but it’s quickly diluted by tears and drains into NLD so tissue contact time is less. In suspension, tissue contact time is higher than solution because the drug is present as small particles and kept suspended in aqueous medium.

Ointment and gel increase bioavailability of drugs by increasing tissue contact time and by preventing dilution drainage of active ingredients.

Ocuserts form a system of drug delivery through membrane. These can be placed in upper or lower fornix to a week. The corneal epithelial tight junction and lipid-water-lipid sandwich layer provides a mechanical and chemical barrier for the drug absorption. The lipophilic and hydrophilic substances can be effectively delivered permeability across sclera depends on ocular pharmacology. The therapeutic effect of kriyakalpa can be understandable and conclusion of the effect can be drawn as follows.

**CONCLUSION**: 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 chakshushyadravyas. The main aim of any pharmacotherapeutics is the attainment of an affective concentration at the site of action for a sufficient period of time to elicit the response. In practice, therapeutic effect 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. It is up to the science to correlate the observations with their scientific explanation. Here in present review article, it is tried to correlate the ayurvedic oculocutaneous therapeutics i.e. kriyakalpa on the basis of modern pharmacology. Therapeutic 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. In the light of above fundamentals of modern pharmacology, all theayurvedic ocular therapeutic procedures are relevant as such. Today current methods of drug delivery exhibit specific problems that scientists are attempting to address for example many drugs potencies and therapeutic effects are limited or otherwise reduced because of partial degradation that occurs before they reach a desired target in the body. If orally administered time-release medications deliver treatment continuously rather than providing relief of symptoms and protection from adverse events solely when necessary, present conventional systems of medicine has topical and systemic administration of drug to the eye which are highly inefficient and there is a need for controlled, sustained release, particularly for conditions that affect the posterior segment.
non implantable and implantable drug delivery devices have been developed which are far from satisfactory and result in more adverse effects which is driving scientists to research more and more into safe, effective drug delivery methods for all parts of the eyes.

REFERENCES:

5) Indradeva Tripathi,Ramnath Dwivedi, Chakrapani Chakradatta. Vaidhyaprabha commentary, Netraroga Chikitsa, Varanasi: Chaukhamba Sanskrit Bhavana, 2010
27) Kanchan Sharma, Brijeshkumar The significance of kriyakalpa in netrarogas; UJAHM 2015 03 (03) page no. 13-14.