

IMPORTANCE OF *KRIYAKALPA* IN *NETRAROGA* WITH MODERN APPROACH

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ABSTRACT

Ayurveda is one of the oldest scientific medical systems. It is not only a system of medicine in the conventional sense of curing disease but also a way of life that teaches us how to maintain & protect health. Eyes are the most precious God's gift to human being. Our eyes are the important organ in *urdhwajatrugata sthana*. *Urdhwajatrugata vyadhis* includes the diseases of eyes, ear, nose & throat. *Kriyakalpa* is the main therapeutic process for *netra rogas*. *Kriyakalpa* means the procedures in which various drugs are applied in & around the eye ball as a treatment modality. *Tarpanadi* procedures are included in *kriyakalpas*.

Keywords: *Kriyakalpa*, *Urdhwajatrugata vyadhis*, *netraroga*.

INTRODUCTION

Shalakya tantra is one among eight specialities of *Ashtang Ayurveda*, which deals with *Urdhwajatrugata vyadhis*. In *Ayurvedic samhitas* local treatment for *netraroga* has been described in the name of *kriyakalpa*. The word *kriyakalpa* is made up of two words. *kriya* means therapeutic procedures useful for curing diseases & *kalpa* means practical. It includes selection of drug for specific procedure, preparation of special drug & finally its application. Eyes are the only organ in the body which receives separate treatment modality like *Kriyakalpa* as a *Bahyaparimarjan Chikitsa* & no other organ individually receives the treatment. Modalities like *Kriyakalpa* on eyes. However *Pan-*

chakarma are the *Sarvadehik* treatment procedures & stated as *Antahparimarjan Chikitsa*.

Kriyakalpa procedures need a modern scientific base to develop the branch of Ophthalmology. The application of *Ayurvedic* ocular therapeutics seems crude in the light of modern Ophthalmology. Despite the available evidences regarding the mode of action, the foremost query about the absorption & therapeutic effect of these measures is obvious. Two views are held in this regard:

1. The potency of the locally administered drug by virtue of its action relieves the disease.

2. Locally applied medication reaches conjunctival sac, fornices, inner & outer canthus, nasal cavity & blood vessels & alleviates the disease both locally as well as systemically.

Acharya Charak has mentioned three kriyakalpas in chikitsa sthan i.e Aschyotana, Anjana & Bidalaka. Acharya Sushruta has mentioned five kriyakalpas i.e Tarpana, Putapaka, Seka, Aschyotana & Anjana.^{1,2} Acharya Sharangdhara has mentioned seven kriyakalpas i.e five of Sushruta & two added Pindi & Bidalaka.³

KRIYAKALPA-

Kriyakalpa procedures are administered through Poorvakarma, Pradhankarma & Paschatkarma. Poorvakarma includes the Panchakarma on body

to remove vitiated doshas & after that Kriyakalpa procedures are applied to eliminate remaining Doshas as a Bahyaparimarjan chikitsa. Pradhankarma includes the actual Kriyakalpa procedure while Paschatkarma is the Parihar kala.

1. TARPANA-

This is one of the Kriyakalpa which gives nourishment to the eyes & cures Vata- Pitta predominant diseases. In this procedure the unctuous substances like Medicated ghee, vasa, majja, ghrita manda is kept in the eye for a specific time by special arrangement made around eyes with Mashapali or Tarpana goggle.⁴

There are different Aushadh Dharana Kala as per diseased part as⁵

Table 1:

Diseased part/ Dosha	Aushadh Dharan Kala
Sandhigata Roga	300 matra
Vartmagata Roga	100 matra
Shuklagata Roga	500 matra
Krishnagata Roga	700 matra
Drishtigata Roga	800 or 1000 matra
Sarvagata Roga	1000 matra
Vataj Roga	1000 matra – for one day
Pittaj Roga	800 matra- for three days
Kaphaj Roga	500 matra – for five days

PUTAPAKA-

The indications & procedure of Putapaka is like Tarpana but the medicine preparation is specific. The medicine (swarasa) is extracted by Putapaka Vidhi.⁶ The Putapaka is of three types as Snehana, Ropana & Lekhana Putapaka. Vagbhata mentioned Prasadana putapaka, instead of Ropana Putapaka.⁷

SEKA-

Seka procedure is indicated in acute condition of eye diseases. Medicine is poured on closed eyes continuously from four Angul heights for a specific time, according to Doshas.⁸ There are three types of Seka as:⁹

Table 2

Types of Seka	Dosha Predominant diseases	Kala
Snehana	In Vataj diseases	400 matra
Ropana	In pitta & Raktaj diseases	600 matra
Lekhana	In Kaphaj diseases	300/200 matra

ASCHYOTANA-

Instillation of few drops of medicine into the open eyes from the height of two *Angul* is called as *Aschyotana*. *Aschyotana* is the first line of treat-

ment in all eye diseases.¹⁰ There are three types of *Aschyotana* as:^{11, 12}

Table 3:

Types of <i>Aschyotana</i>	<i>Dosha</i> predominant diseases	Dose
<i>Lekhana</i>	In <i>kaphaj</i> diseases	7-8 drops
<i>Ropana</i>	In <i>pitta</i> & <i>raktaj</i> diseases	12 drops
<i>Snehana</i>	In <i>Vataj</i> diseases	10 drops

PINDI-

Pindi is the modified procedure of *Bidalaka*. Instead of direct application of drug paste on eyes, it is kept in cotton or *Doshghna* leaves & is kept tightly over the eyelids. *Pindi* relieves the symptoms of *Netrabhishyanda*, *Adhimantha*, *Sotha*, *Netrakandu*, *Kaphaja Netraroga* etc.¹³

BIDALAKA-

Bidalaka is the application of medicated paste on the outer surface of eyes i.e eyelids. *Bidalaka* are of three types according to thickness of paste as *Uttam*, *Madhyam* & *Heena*. *Bidalaka* relieves burning, discharge, excessive tears, swelling, redness, itching etc.¹⁴

ANJANA-

Application of medicine to the internal surface of lid margin from *Kaninika sandhi* to *Apanga sandhi* with *Anjana Shalaka* is called as *Anjana*. Types of *Anjana* according to action of drugs are as;¹⁵

- 1. Lekhanajana-** Used in *Kapha* predominant diseases of eyes
 - In *vata* predominant diseases- *Amla- Lavana Rasa*
 - In *Pitta* predominant diseases- *Tikta-Kashay rasa*
 - In *Rakta* Predominant diseases-*Kashaya- Tikta Rasa*
- 2. Ropananjana-** Drug is oily & it gives strength & complexion to the eyes.

- 3. Prasadanjana-** It is prepared with *Madhura* & *Snigdha* medicines.¹⁶

MODERN PHARMACOLOGY-

In modern, drug delivery to eyes is through-

TOPICAL- Drop, ointment, gel

PERIOULAR- Subconjunctival, subtenon, peribulbar, retrobulbar

INTRAOCULAR- Intracameral, intravitreal

Topically instilled drugs depends upon time, the drug remain at the precorneal tear film.

Eye ointment increases contact time of drug with ocular surface.

Preocular injection allows drugs to bypass the conjunctival / corneal epithelium.

Its absorption depends upon the permeability of various layers of cornea. Corneal epithelium & endothelium are more lipophilic than stromal layer.

The pharmacology of *Kriyakalpa* can be explained on the following principles of modern pharmacology:

- Route of administration
- Solubility & Bioavailability
- Absorbing surface
- Vascularity of the absorbing surface
- Physical state of the drug
- Complaisance
- Excretion

1. Route of Administration

Mainly mucosal & cutaneous routes are used. Drugs are applied to the conjunctival sac as Drops & ointments which is thin disc of gelatin as in *Aschyotana*, *Seka* & *Anjana*. Mucous membranes are good absorbing surfaces. Drugs applied on mucous membrane of conjunctiva are readily absorbed. The systemic route has limitations because of blood-aqueous barrier. Large sized molecules cannot cross this barrier & do not enter the eye. Absorption of these drugs is proportional to their lipid solubility since epidermis behaves as a lipid barrier. The dermis is freely permeable to many solutes which form the basis for application of *Bidalaka* & *Pindi* on the skin surrounding the eye-ball.

2. Solubility & Bioavailability

Absorption depends on solubility of drugs & local condition at the site of absorption. Drugs to be absorbed through mucous membrane should be water & lipid soluble. The main forms of drugs instilled into the eyes are aqueous solutions, Suspensions, ocular inserts & ointments. Each has different influence on drug bioavailability. Solution drug is totally dissolved but the tissue contact time is short as in *Aschyotana* & *Seka*. Ointments increases bioavailability of drugs by increasing the tissue contact time & by preventing dilution & drainage of active ingredients as in *Anjana*. In suspensions the drug is present as small particles kept suspended in an aqueous medium by a dispersing agent. Particles do not leave the eye as quickly as the solutions which increase the tissue contact time as in *Tarpana* & *Putapaka*.

3. Absorbing surface

Conjunctiva & cornea are main absorbing surfaces. Conjunctival membrane readily absorbs the drug. Absorption through cornea involves transformation of drugs through its different layers. The corneal epithelium & endothelium have 100 times more lipid contents than in the stroma while fat

soluble drugs readily penetrates the epithelium & endothelium. However, only water soluble drugs can penetrate the stroma. Thus the drug should have both Lipophilic & hydrophilic character that can penetrate all the layers of cornea. The drug contact time has an effect upon the absorption & penetration of drugs.

So specific contact time duration has been mentioned by *Acharyas*.

4. Vascularity of absorbing surface

The drug absorption is directly proportional to the vascularity of absorbing surface. *Snehana*, *swedana* done in some *Kriyakalpa* procedures as a *Poorvakarma* increases the blood flow to that part.

Water soluble drugs are easily absorbed through the vessel wall i.e permeability & vascularity. So in diseases where blood vessels especially external eye are not involved, medicines in the watery form is better. For that *Aschyotana* & *Seka* are used.

Fat soluble factors easily get absorbed through cornea. So in *Vata- Pitta* predominant diseases *Ghritha* is perfect for *Tarpana* & *Aschyotana*.

5. Physical state of drug

Colloids are more slowly absorbed than crystalloids. Fat soluble substances reach the circulation more slowly than water soluble drug. Thus in *Tarpana* & *Putapaka* fat soluble substances are used, which are kept for longer duration than *Seka* & *Aschyotana* which contains surplus of water soluble substances.

According to Richardson, substances with molecular weight less than 100 can pass readily through cell membrane & those of more than 500 do not. In *Tarpana* & *Putapaka* the medicated Ghee or oil is used in the eye & absorption of the drug is on the basis of law of mass action.

6. Compliance

The peak serum level time of the drug is the criteria of its dosage schedule which should be maintained by repeating the drug at that interval.

7. Excretion

Topically applied solutions or eye drops as in *Aschyotana* & *Seka*, mostly overflows & also gets excreted through the nasolacrimal duct. The absorbed one enters the blood circulation & excreted through the main route of excretion.

CONCLUSION

Kriyakalpas are the boon to *Ayurvedic* ophthalmology which can be studied through the route of drug administration, absorption, physical state, solubility & bio-availability of drug, compliance & excretion of drug. The aim of any pharmacotherapeutic is to attain an effective concentration at the site of action. As per *Ayurveda*, various drugs can be selected according to the *doshas*, type of disease & can be used by various ways as *kriya kalpas*. In this way it is concluded that *kriya kalpa* plays an important role in *Netra roga chikitsa*.

REFERENCES

1. *Vagbhata, Ashtang Hrudaya* with commentary by Arundatta & Hemadri, *Sutrasthana Ayushkamiya Adhyaya 1*, Chaukhamba Sanskrita Sansthan, Varanasi;2011. P-05
2. *Sushruta Samhita* with commentary by Dalhanacharya, *Uttantantra Kriyakalpa Adhyaya 18*, Chaukhamba Sanskrita Sansthan, Varanasi; 2010. P-633
3. *Sharangdhara, Sharangdhara Samhita*, by Acharya Radhakrishna Parashar, *Uttarkhanda Netraprasadan Kalpana Vidhi Adhyaya13*, Baidyanath Ayurved Bhavan, Nagpur;1994. P-579
4. *Vagbhata, Ashtang Hrudaya* with commentary by Arundatta & Hemadri, By Dr. A.M.Kunte, *Sutrasthana Tarpan-putpaka Vidhi Adhyaya 24*, Chaukhamba Sanskrit S Ansthan, Varanasi 2010, p-308
5. *Sushruta Samhita* with commentary by Dalhanacharya, *Uttantantra Kriyakalpa Adhyaya 18*, Chaukhamba Sanskrita Sansthan, Varanasi; 2010. P-633
6. *Sushruta Samhita* with commentary by Dalhanacharya, *Uttantantra Kriyakalpa Adhyaya 18*, Chaukhamba Sanskrita Sansthan, Varanasi; 2010. P-635
7. *Sushruta Samhita* with commentary by Dalhanacharya, *Uttantantra Kriyakalpa Adhyaya 18*, Chaukhamba Sanskrita Sansthan, Varanasi; 2010. P-634
8. *Sharangdhara, Sharangdhara Samhita*, by Acharya Radhakrishna Parashar, *Uttarkhanda Netraprasadan Kalpana Vidhi Adhyaya13*, Baidyanath Ayurved Bhavan, Nagpur;1994. P-579
9. *Vagbhata, Ashtang Hrudaya* with commentary by Arundatta & Hemadri by A.m Kunte, *Sutrasthana Aschyotananjan Vidhi Adhyaya 23*, Chaukhamba Sanskrita Sansthan, Varanasi 2010; p-636
10. *Agnivesh, Dridhbala, Charaka, Charaka samhita* with commentary by Chakrapanidutta by Jadvji Trikamji Acharya, Chaukhamba Sanskrita Sansthan, Varanasi, 1994 P-610
11. *Sushruta Samhita* with commentary by Dalhanacharya, *Uttantantra Kriyakalpa Adhyaya 18*, Chaukhamba Sanskrita Sansthan, Varanasi ; 2010. P-633
12. *Vagbhata, Ashtang Hrudaya*, with commentary by Arundatta & Hemadri, by Dr.A.M. Kunte, *Sutrasthana, Aschyotananjan Vidhi Adhyaya 23*, Chaukhamba Sanskrit Sansthan, Varanasi, 2011, p-303
13. *Sharangdhara, Sharangdhara Samhita*, by Acharya Radhakrishna Parashar, *Uttarkhanda Netraprasadan Kalpana Vidhi Adhyaya13*, Baidyanath Ayurved Bhavan, Nagpur;1994. P-579
14. *Sharangdhara, Sharangdhara Samhita*, by Acharya Radhakrishna Parashar, *Uttarkhanda Netraprasadan Kalpana Vidhi Adhyaya13*, Baidyanath Ayurved Bhavan, Nagpur;1994. P-579

15. *Bhavmishra, bhavprakash* with *Vidyotini* Hindi Commentary by Pandit Brahmashankar Mishra, Madhyamkhanda Netrarogadhikar Adhyaya 63, Chaukhamba Sankrita Sansthan, Varanasi; p-659
 16. *Sushruta Samhita* with commentary by *Dalhanacharya, Uttartantra Kriyakalpa Adhyaya* 18, Chaukhamba Sanskrita Sansthan, Varanasi; 2010. P-636
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