

**AYURVEDIC OCULAR THERAPEUTICS****Ahuja Deepak Kumar**Assistant Prof, Department of Shalakya Tantra, S.R.M. Govt. Ayurvedic College Bareilly,  
UP, India**ABSTRACT**

Tremendous advancement made in ophthalmic medicine in recent years has begun a new era in the history of ophthalmology. Modern ophthalmologists and scientists have been able to convince the new generation about the significance of eye care and the right procedures to follow in order to ensure healthy vision. At the same time, there are various challenging problems, arising before modern ophthalmologists compelling them to tread the virgin fields of medical knowledge hidden in ancient medical manuscripts. Many are aware of various eye ailments and remedies. But the impact of *Ayurvedic* treatments for these ailments is yet to be recognised by both medical fraternity and the public in general. One such *Ayurvedic* ocular therapeutic is *Kriyakalpa*. Different types of *Kriyakalpa*, their indications and probable mode of action will be discussed in present review article.

**Keywords:** *Kriyakalpa*, Ocular pharmacology

**INTRODUCTION**

The importance of the eyes was underscored in *Ayurveda* by quoting eye as the most important of all organs: “*Sarvendriyanam Nayanam Pradhanam*” i.e. eyes hold special status among all the sense organs. Eyes are the most precious gift of the God to the living beings. Good vision is crucial for social and intellectual development of a person. *Ayurveda* the fountain head of Indian medicine was conceived as a science and preached in the country some thousands of years ago, long before the other countries could dream of systematizing the concept of

remedies for human ailments. *Shalakya Tantra* is one among 8 specialties of *Ash-tanga Ayurveda*, which deals with the diseases occurring above the clavicle. So it mainly deals with the sense organs; dis-

eases affecting them and their management.

*Acharya Nimi* is considered as the expounder of this branch of *Ayurveda*. His view point on the subject of *Shalakya* is presented in first 26 chapters in *Uttar Tantra* of *Sushruta Samhita* wherein 19 chapters hold the Anatomy, Classification, Pathophysiology of diseases and their treatment, which reflects the importance of ophthalmology since ancient time. Eye is perhaps the only organ in the body whose anatomy, diseases and their treatment are detailed vividly and systematically in *Ayurvedic* literature.

**NETRA KRIYAKALPA-** As the *Panch-karma* is the bases of *Kayachikitsa*, *Kriyakalpa* is the main therapeutic process for Ophthalmology in *Shalakya tantra*. The word *Kriyakalp* built from two words: *Kriya* and *Kalpa*. *Kriya* means therapeutic procedures 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 Ayurvedic Ophthalmology. It includes selection of specific procedure, preparation of special drug form and finally its proper application to the eyes. *Acharya Susruta* mention *Tarpan*, *Putapaka*, *Seka*, *Aschyotanam* and *Anjanam* under the heading of *Kriyakalpa*<sup>1</sup>. *Acharya Vaghbata* and *Sarangdhara* add *Pindi* and *Vidalaka* in them. *Acharya Charaka* had also told about *Vidalaka*.

**INDICATIONS OF KRIYAKALP-** In *Ayurvedic* classics, different types of indications are given for different *Kriyakalpas*. These are as follows-

**TARPANA-** *Tarpana* is indicated especially in *Vata-Pita* dominating personalities suffering from eye disease<sup>2</sup>.

**PUTAPAKA-** It is indicated when eye get fatigued after the *Tarpana*, i.e. for rejuvenation of eyes<sup>3</sup>. *Putapaka* is used to give energy to the eyes to overcome from fatigued stage.

**SEKA-** Indicated in severe eye affections<sup>4</sup> i.e. in acute condition of eye diseases.

**ASCHYOTANA-** It is indicated as a first procedure in all eye disease.<sup>5</sup>

**ANJAN-** It is applied when the *doshas* are located only in the eyes and when the symptoms and signs get started according to the involvement of *doshas*<sup>6</sup>. It is indicated in *Pakwaawastha* of eye disorders. It is indicated not only in diseased eye but also in the normal eyes to maintain the visual power properly. It is effective in *Lakshanas* like *Vedana*, *Ragata*, *Daha*, and *Shotha*. It has direct action on the ocular tissues especially on conjunctiva, so it is useful in conjunctival disorders. It flushes out debris and unwanted tissue due to its *Lekhan* property<sup>7</sup>.

**PINDI-**

It is also called *Kawalika*<sup>8</sup>. Indicated in *abhisyandha* and oedema, itching and ocular pain.<sup>9</sup>

**VIDALAKA-** It is also indicated in the early stage of disease<sup>10</sup>.

**CLINICAL FEATURES OF AAMA-AWASTHA OF NETRA-** Severe pain, redness, oedema, Foreign body sensation, pricking type pain and watering<sup>11</sup>.

**CLINICAL FEATURES OF NIRAAN-AWASTHA OF NETRA-** Severity of pain, itching, oedema and watering reduces and colour of eye become clear<sup>12</sup>.

**OCULAR PHARMACOLOGY-** Modern ophthalmology has reached a stage, where medical, surgical, laser and cryotherapy are playing an almost equal role in the management of eye diseases. Basic principal of ocular pharmacology is described here in brief<sup>13</sup>-

**MODES OF ADMINISTRATION-**

**TOPICAL INSTILLATION INTO CONJUNCTIVAL SAC / EXTRA OCULAR**

Drops, ointment, Gels, and Ocuserts

**PERIOCCULAR ROUTE :**

Subconjunctival injections, Sub-Tenon injections, Retrobulbar injections  
Peribulbar injections

**INTRAOCULAR ROUTE:** Intraocular injections

**SYSTEMIC ROUTE:** As in Ayurveda, we are applying ophthalmic therapeutic either in the form of local therapy i.e. *Kriyakalpa* or in the form of systemic use i.e. oral *Chakshushya dravyas*. So here we will focus only on topical route.

Eye drops are the simplest and most convenient method of topical application. The forms of drug instilled in eyes are of two types: Aqueous solutions and Aqueous suspensions. In Solutions, drug is totally dissolved, therefore totally available. These are for immediate action but it is quickly diluted by tears and drain to

NLD. So tissue contact time is short. In suspensions, drug is present as small particles kept suspended in the Aqueous medium, particles do not leave the eye as quick as in

Solutions. Therefore tissue contact time is increases.

Ointment and Gel increases the bioavailability of the drug by increase tissue contact time and by preventing dilution and quick absorption. Ocuserts form a system of drug delivery through a membrane. These can be placed in the upper or lower fornix up to a week and allow a drug to be released at a relatively constant rate. The systemic routes include oral intake and intramuscular and intravenous injections. The intraocular penetration of sys-

temically administered drugs mainly depends upon the blood-aqueous barrier. The passage through blood-aqueous barrier in turn is influenced by the molecular weight and the lipid solubility of the drug. No passage is allowed to large-sized molecules such as Sb, As commonly present in major collyria formulation. Only low molecular weight drugs can cross this blood-aqueous barrier. The corneal epithelial tight junction i.e. zonula occludens and the lipid-water-lipid sandwich layer provides mechanical and chemical barrier for the drug absorption. The lipophilic and hydrophilic substances can be effectively delivered. The permeability across the sclera depends on the size and weight of molecules.

**KRIYAKALPA BASED ON OCULAR PHARMACOLOGY-**

KRIYA-KALP	USED FORMULATION	DRUG DELIVARY SYSTEM	REMARK
<b>TARPANA</b>	Simple Goghrita or Goghrita/oil prepared with medicine	Used preparation is in aqueous suspension form. So it will cross corneal epithelium barrier easily. ·Due to more tissue contact time, active components of drug will absorb more.	Mainly indicated in diseased conditions of Eyes.
<b>PU-TAPAKA</b>	Plant extracts after close chamber(ball wrapped by green leaves and layer of mud) combustion	·Used preparation is in aqueous solution form and active component concentration is high. ·Tissue contact time is very less.	Used after <i>Tarpana</i> to increase <i>drasthibala</i> and in mild eye affections
<b>SEKA</b>	Decoctions of raw drugs	·Used as aqueous extract i.e. in concentrate form, but used on closed eye. · Medicine is absorbed through the skin of lids.	Indicated in severe eye affections.
<b>ASCHYO-TANA</b>	Decoctions of raw drugs	·The active principle is aqueous extract. ·Tissue contact time is	It is used as a first line of treatment in all eye disorders.

		very less. It get diluted with tears and drained to NLD.	
<b>ANJANA</b>	Liniment of drugs	· Bioavailability is more due to more tissue contact time.	<i>Anjanas</i> are mainly have <i>lekhana</i> properties which can gradually taper the thickness of the membrane and there by prevent the growth and also reduce the size.
<b>PINDI /KAWLIKA</b>	Poultice of different Medicine	· Medicine is absorbed through the skin of lids. · Due to heat of poultice, local temperature is increases resulting in local vasodilation. So the drainage of toxin occurs from lesion site.	Indicated in <i>abhisyandha</i> and oedema, itching and ocular pain.
<b>VI-DALAKA</b>	Medicated paste is applied over the skin of lids.	· Medicine is absorbed through the skin of lids. · Mechanical effect of pressure helps in reducing IOP by vasodilation and aqueous drainage.	Indicated in early stages of eye diseases especially for curing burning, watering, swelling and redness of eye <sup>14</sup>

## CONCLUSION

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 *kriyakalp*. 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* ocular therapeutic i.e. *kriyakalp* on the basis of modern pharmacotherapeutic. Various drugs can be selected according to the stage and types of the disease and can be used in various *Kriyakalp* procedures according to need. In the light of above fundamentals of modern pharmacology, all the *Ayurvedic* ocular

therapeutic procedures are relevant as such.

## REFERENCES

1. Sushruta. Sushruta Samhita Dalhana Comm. Nibandhasangraha, Gayadasacharya comm. Nyayachandrika Panjika on Nidanasthana. In: Jadavaji T, Narayana R, editors. Uttara Tantra 18/4. Varanasi: Chaukhamba Surbharati Prakashana;
2. Vagbhata. Ashtanga Hridaya. Sarvanga Sundari Comm. Arunadatta & Ayurveda-Rasayana comm. In: Hemadri D, Sadashiva SP, editors. Sutrasthana 24/13. Varanasi: Chaukhamba Surbharati Prakashana; 2007
3. Ibidem 24/12
4. Sushruta. Sushruta Samhita Dalhana Comm. Nibandhasangraha, Gayadasacharya comm. Nyayachandrika Panjika on Nidanasthana. In: Jadavaji T, Narayana R,

editors. Uttara Tantra 18/44. Varanasi: Chaukhamba Surbharati Prakashana.

5. Vagbhata. Ashtanga Sangraha, Sutrashtana 32/3.

6. Sushruta. Sushruta Samhita Dalhana Comm. Nibandhasangraha, Gayadasacharya comm. Nyayachandrika Panjika on Nidanasthana. In: Jadavaji T, Narayana R, editors. Uttara Tantra 18/51-52. Varanasi: Chaukhamba Surbharati Prakashana.

7. Vagbhata. Ashtanga Hridaya. Sarvanga Sundari Comm. Arunadatta & Ayurveda-Rasayana comm. In: Hemadri D, Sadashiva SP, editors. Sutrashtana 23/8-9. Varanasi: Chaukhamba Surbharati Prakashana; 2007

8. Sharngdhar Samhita of Acharya Sharngadhar with Jiwanprada commentary by Dr. Shailaja Srivastava, Uttarakhanda 13/22. Varanasi: Chaukhamba orientalia; 2005

9. Ibidem 13/25-31

10. Agnivesha. Charaka Samhita, Comm. Chakrapanidatta. In: Jadavaji TA, editor. Chikitsasthana. Varanasi: Chaukhamba Surbharati Prakashana; 2008.26/231

11. Vagbhata. Ashtanga Hridaya. Sarvanga Sundari Comm. Arunadatta & Ayurveda-Rasayanacomm. In: Hemadri D, Sadashiva SP, editors. Sutrashtana 32. Varanasi: Chaukhamba Surbharati Prakashana; 2007

12. Ibidem

13. Text book of Ophthalmology by A.K Khurana, 3rd edition, 2005

14. Agnivesha. Charaka Samhita, Comm. Chakrapanidatta. In: Jadavaji TA, editor. Chikitsasthana. Varanasi: Chaukhamba Surbharati Prakashana; 2008.26/231.

---

### **CORRESPONDING AUTHOR**

**Dr. Deepak Kumar Ahuja**

Assis. Prof. in Shalaky Deptt. S.R.M. Govt. Ayurvedic College Bareilly, (UP), India- 243001

Email: [drdeepakahuja@yahoo.in](mailto:drdeepakahuja@yahoo.in)

---