



Chief Editor

Dr. A. Singaraj, M.A., M.Phil., Ph.D.

Editor

Mrs.M.Josephin Immaculate Ruba

Editorial Advisors

1. **Dr.Yi-Lin Yu**, Ph. D
Associate Professor,
Department of Advertising & Public Relations,
Fu Jen Catholic University,
Taipei, Taiwan.
2. **Dr.G. Badri Narayanan**, PhD,
Research Economist,
Center for Global Trade Analysis,
Purdue University,
West Lafayette,
Indiana, USA.
3. **Dr. Gajendra Naidu.J.**, M.Com, LL.M., M.B.A., PhD. MHRM
Professor & Head,
Faculty of Finance, Botho University,
Gaborone Campus, Botho Education Park,
Kgale, Gaborone, Botswana.
4. **Dr. Ahmed Sebihi**
Associate Professor
Islamic Culture and Social Sciences (ICSS),
Department of General Education (DGE),
Gulf Medical University (GMU), UAE.
5. **Dr. Pradeep Kumar Choudhury**,
Assistant Professor,
Institute for Studies in Industrial Development,
An ICSSR Research Institute,
New Delhi- 110070.India.
6. **Dr. Sumita Bharat Goyal**
Assistant Professor,
Department of Commerce,
Central University of Rajasthan,
Bandar Sindri, Dist-Ajmer,
Rajasthan, India
7. **Dr. C. Muniyandi**, M.Sc., M. Phil., Ph. D,
Assistant Professor,
Department of Econometrics,
School of Economics,
Madurai Kamaraj University,
Madurai-625021, Tamil Nadu, India.
8. **Dr. B. Ravi Kumar**,
Assistant Professor
Department of GBEH,
Sree Vidyanikethan Engineering College,
A.Rangampet, Tirupati,
Andhra Pradesh, India
9. **Dr. Gyanendra Awasthi**, M.Sc., Ph.D., NET
Associate Professor & HOD
Department of Biochemistry,
Dolphin (PG) Institute of Biomedical & Natural Sciences,
Dehradun, Uttarakhand, India.
10. **Dr. D.K. Awasthi**, M.SC., Ph.D.
Associate Professor
Department of Chemistry, Sri J.N.P.G. College,
Charbagh, Lucknow,
Uttar Pradesh. India

ISSN (Online) : 2455 - 3662
SJIF Impact Factor :4.924

EPRA International Journal of **Multidisciplinary Research**

Monthly Peer Reviewed & Indexed
International Online Journal

Volume: 4 Issue:8 August 2018



Published By :
EPRA Journals

CC License



**EPRA International Journal of
Multidisciplinary Research (IJMR)**

KRIYAKALPA: A REVIEW ON AYURVEDIC OCULAR THERAPEUTICS



Dr. Shyam Kumar Sah¹

¹.PG Scholar,
Department of Shalakya Tantra,
Sri Dharmasthala
Manjunatheshwara College of Ayurveda
and Hospital, Hassan, Karnataka. India

Dr Deeraj BC²

².Associate Professor,
Department of Shalakya Tantra,
Sri Dharmasthala Manjunatheshwara
College of Ayurveda and Hospital,
Hassan, Karnataka. India

Dr Amarnath HK³

³.Associate Professor,
Department of Shalakya Tantra,
Sri Dharmasthala Manjunatheshwara
College of Ayurveda and Hospital,
Hassan, Karnataka. India

Dr Ashwini MJ⁴

⁴.Professor and HOD,
Department of Shalakya Tantra,
Sri Dharmasthala Manjunatheshwara
College of Ayurveda and Hospital, Hassan,
Karnataka. India

ABSTRACT

Eyes are the most precious gift of the God to the living beings. "Sarvendriyanam Nayanam Pradhanam" that means 'eye' is the most important sense organ among all the indriyas. If vision is lost merely everything is lost because a blind person though so rich cannot enjoy the beauty of the world.¹ Hence it is very essential to maintain the swasthya and treat the pathology of chakshu indriya. For this, very specific ocular therapeutics is explained in Ayurveda called kriyakalpa which is used to maintain the netra swasthya and cure the netrarogas. Kriyakalpa procedures are classified according to form of the drug, method of administrations, severity of disease and predominance of doshas. There is proper duration for kriyakalpa according to sthansamshraya of disease in different patalas, mandalas and sandhis. It is one of the bahiparimarjan chikitsa for netra rogas. Kriyakalpa is the basis of the ophthalmic disorders as Panchkarma is the basis of Kayachikitsa.²

KEYWORDS: *Netra swasthya, Kriyakalpa, Ocular therapeutics, Netra chikitsa.*

INTRODUCTION

Shalakya tantra is one among the eight specialities of Ashtang Ayurveda, which deals with Urdhwajatrugata vyadhis. In Ayurvedic samhitas, various local therapeutic procedures for netraroga has been described in the name of kriyakalpa. Kriyakalpa is made up of two words: 'kriya' means the special therapeutic procedures and 'kalpa' means formulations like swarasa, ghrita, kashaya etc.³ Eyes

are the only organ in the body which receives separate treatment modality like Kriyakalpa as a Bahyaparimarjan Chikitsa. Panchakarma is the foundation for kayachikitsa, similarly netra kriyakalpas are the foundation for netrachikitsa. They are modulated to suit the structural peculiarities and different disease conditions of the eye. These local therapies are unique and each does their function in a different ways.

Benefits of kriyakalpa (topical administration) over oral administration of drugs in ocular disorders.⁴

S.N.	Kriyakalpa (Topical administration)	Oral administration
1.	The medicines have direct action on the ocular tissues.	There will be no direct action on the ocular tissues.
2.	The medicine will bypass the systemic metabolism.	The medicines undergo systemic metabolism.
3.	The contact time between the tissue and the medicine can be monitored.	The tissue contact time of the drugs cannot be monitored.
4.	The medicines can reach the target tissue more easily because of the direct contact.	Difficulty to cross blood-aqueous, blood-vitreous and blood-retinal barriers to reach the target tissues.
5.	The bioavailability of drug is high.	The bioavailability of drug is comparatively less.

Thus high concentration of the drug can be achieved by applying medicine topically to the eye for a desired period. Cornea determines the intra-ocular penetration of the drugs used in kriyakalpa. The corneal layer stroma allows rapid passage of the drug through endothelium into anterior chamber. Following factors determines the better penetrations of the drugs through the cornea.

1. Solubility of drugs in both water and fats.
2. Pro drug forms.
3. Wetting agent.

The intra-ocular penetration of systemically administered drugs is possible only if they are able to pass through blood aqueous barrier. Low molecular weight and lipid solubility influences them.

Classification of Kriyakalpas:

S.N.	Acharyas	Types	Kriyakalpa procedure
1.	Charaka ⁵	3	Bidalaka, Aschyotana & Anjana
2.	Sushruta ⁶ Vagbhata (A.H. ⁷ & A.S. ⁸)	4	Seka, Aschyotana, Tarpana, Putpaka, Anjana
3.	Sarangdhara ⁹ , Chakradatta ¹⁰ Yoga Ratnakar ¹¹	7	Seka, Aschyotana, Tarpana, Putpaka, Anjana, Pindi, Bidalaka

Procedure

These procedures are consisting of purvakarma, pradhankarma and paschatkarma.

1. Purvakarma: It includes proper shodhana of body and head by panchakarma like vaman, virechana, raktamokshana, basti and nasya as well as collection of all medications required for the procedure.

2. Pradhankarma: It includes actual procedure of kriyakalpa.

3. Paschatkarma: It includes pariharakal and sansarjana karma.

Kriyakalpa Kaksha (theatre)

Kriyakalpa theatre should have proper ventilation but devoid of excessive blowing wind, sunrays and dust. There should be javanika (curtains) of pleasant colours like blue or green. It should be equipped with

materials and medications for the treatment of atiyoga, mithyayoga and hinayoga.

Mode of action of these Kriyakalpa

The medicines are absorbed through akshikosha, eyelids, orbit, sandhi, sira, shringataka marma, ghrana, asya, strotas and reach up to the target region which expels vitiated doshas.

1. TARPANA

It is a procedure in which medicated ghrita is kept over eyes for a specific period of time. It is also named as 'Netra basti'. It gives nourishment to the eyes & cures Vata- Pitta predominant netra rogas. Beside ghrita, vasa, majja and ghrita manda are also used by special arrangement made around eyes with Mashapali or Tarpana goggle.¹² The duration and matra kala to retain the medicine are as follows.

On the basis of Doshas		Duration (Sushruta)	On the basis of sthanaika Rogas	
Swastha	500 matra	2 days interval	Sandhigata	300 matra
Kaphaja roga	600 matra	Once in 5 days	Vartmagata	100 matra
Pittaja roga	800 matra	Once in 3 days	Shuklagata	500 matra
Vataja roga	1000 matra	Daily	Krishnagata	700 matra
			Sarvagata	800 matra
			Dristigata	1000 matra

Indication: Timira, abhisyaanda, adhimantha, arjuna, sabranasukra, sushkakshipaka squint, eyelash falling, reduced tear, etc.

Contraindication: Cloudy day, tiredness, giddiness, excessive hot & cold climate, not suitable for nasya and snehapana.

Samyaka Lakshana: Sound sleep, pleasant awakening, symptoms reduced, clear vision and tolerance to bright light.

Atiyoga Lakshana: Eye heaviness, blurriness of vision, sliminess in eyes, itching, excess lacrimation, discharge aggravation of doshas and kaphajanya rogas.

Hinayoga lakshana: Dryness of eyes, blurriness of vision, excessive lacrimation, intolerance to light, aggravation of disease, vataja symptoms increased.

Chikitsa:

- **For atiyoga:** Dhuma, nasya, anjana and seka with snigdha dravyas.
- **For hinayoga:** Same procedures as above but with ruksha dravya

Tarpanayogya common drugs: Triphaldi ghrita, Patoladi ghrita, Shatavaryadi ghrita, Mahatriphaladi ghrita, Jivantyadi ghrita, Saptamrita ghrita, etc.

2. PUTAPAKA

Putapaka is one among kriyakalpa done after tarpana. The indications & procedure of Putapaka is like Tarpana but the medicine preparation of medicine, ingredients and duration are different. The materials used are 2 pala Mamsa (≈100gms), 1 pala Dravya (≈50gms) and 8 pala Drava (≈400ml) are used to prepare the medicine (swarasa) by Putapaka Vidhi.¹³

Types, indication and duration of putapaka.

Types of Putapaka		Indication	Duration	Matrakala
Sushruta ¹⁴	Vagbhata ¹⁵			
Snehana	Snehana	Vataja netra roga	1 day	100
Lekhana	Lekhana	Kaphaja netra roga	2 days	200
Ropana	Prasadana	Pittaja & Raktaja netra roga	3 days	300

Indication, contraindication and samyaka lakshana: same as Tarpana.

Atiyoga lakshana: Pain, oedema, nodular swelling, timira, muddy eyes, foreign body sensation, throbbing sensations, etc.

Hinayoga lakshana: Inflammation, excessive lacrimation, recurrence of symptoms and aggravation of Doshas.

Chikitsa: In hina & atiyoga- anjana, aschyotana and swedana are indicated based on vitiated Doshas.

Putapakayogya common drugs:

- **Snehana:** anupa mamsa, vasa, majja, meda & madhura ausadha
- **Lekhana:** Jangala mamsa, trikatu, lauha, tamra, shankha, praval, saindhava, etc.
- **Ropana:** Jangala mamsa, madhu, ghrita, tikta dravyas, etc.
- **Prasadana:** Madhura dravya, mrig pakshi yakrita, maja, vasa, stanya sadhita ghrita, etc.

3. SEKA

It is the procedure of pouring thin stream of medicines very slowly on the closed eyes from a height of four angulas. It is the purva karma of all kriyakalpas. It is also called as Pariseka.¹⁶

Types and duration of treatment by seka:¹⁷

Seka types	Indications	Matra kala	Preferred time
Snehana	Vataja	400	Evening
Lekhan	Kaphaja	200	Morning
Ropana	Pittaja & Raktaja	600	Afternoon

Indication: Pothaki, utasangini, anjanamika, paksmaprodha, abhisyaanda, timira, etc

Contraindication: same as tarpana.

Samyaka lakshana: Symptoms reduced, getting normal eye colour & function.

Atiyoga and hinayoga lakshana: same as tarpana.

Chikitsa: with swarasa, kashaya, ksheerapaka based on vitiated doshas.

Sekayogya common drugs:

- **Vataja:** Eranda panchanga with aja ksheera.
- **Pittaja:** Kashaya prepared from Shweta lodhra, yastimadhu, chandana, prapaundrika and sariva.

- **Kaphaja:** Nimba, Patola, Jatipatra, Lodhra, Shunthi, etc.
- **Tridoshaja:** Triphala kshaya

4. ASHCHYOTANA

It is a procedure in which medicine is instilled drop by drop into open eye from a height of 2 angulas. Aschyotana is the first line of treatment in all eye diseases.¹⁸ There are three types of Aschyotana as:¹⁹

Aschyotana types	Indications	Matra	Preferred time	Duration
Snehana	Vataja	10 drops	Evening	100 matra kala ²⁰
Lekhan	Kaphaja	8 drops	Morning	
Ropana	Pittaja & Raktaja	12 drops	Afternoon	

Indication: Pain, burning sensation, excessive lacrimation, itching, foreign body sensation, redness, Inflammation, etc.

Contraindication: none except during night time

Samyaka laksha: symptoms reduced.

Atiyoga lakshana: Foreign body sensation, difficulty in opening of eyes, pain, excessive lacrimation, redness, etc.

Hinayoga lakshana: symptoms increases.

Chikitsa: In hina & atiyoga-anjana and swedana are indicated based on vitiated doshas

Aschyotanayogya common drugs:

- **Vataja:** Erandmula, Jyanti, Brihati, Shigru, Madhu & Panchamula boiled in water.
- **Pittaja:** Prithvika, darvi, manjistha, laksha & madhuka boiled in water with sugar.
- **Kaphaja:** Shunthi, triphala, musta, nimba, & vasa boiled in water.

5. BIDALAKA

It is the application of medicated paste over eyelids excluding eyelashes. Thickness of Bidalaka is similar to Mukhalepa. Bidalaka relieves burning, discharge, excessive tears, swelling, redness, itching etc. Types and duration of Bidalaka are:²¹

Types of Bidalaka	Thickness of Bidalaka	Time of application
Doshaghna	1/4 th angula	<ul style="list-style-type: none"> • During day time or whenever symptoms manifest. • Contraindication at night
Vishaghna	1/3 rd angula	
Varnya	1/2 angula	

Indication: Daha, discharges, lacrimation, oedema, congestion, etc.

Contraindication: At night and after applying bidalaka-speaking, laughing, crying, day sleeping, exposure to sunlight, etc.

Samyaka lakshana: free from the above symptoms.

Atiyoga lakshana and hinayoga lakshana are not mentioned in samhitas.

Bidalakayogya common drugs: Paste of-

- Yastimadhu, garika, saindhava, Daruharidra and rasanjana with water
- Kumari, haridra
- Haritaki Shunthi
- Lodhra saindhava, etc

6. PINDI

Pindi is the modified procedure of Bidalaka. In this paste of medicins are covered in a cloth and placed over the closed eyes. It is also called as Kabalika.

Indication: Abhishyanda, adhimantha, sotha, netrakandu, kaphaja and early stages of netrarogas.²²

samyaka lakshana: free from the above symptoms.

Contraindication, atiyoga lakshana and hinayoga lakshana are not mentioned in samhitas.

Pindiyogya common drugs: Paste of-

- **Vataja:** Erand panchanga
- **Pittaja:** Yasti, amalki or mahanimba phala
- **Kaphaja:** Shigru leaves
- **Kapha-pitta:** Triphala

7. ANJANA

It is the application of medicine into the inner aspect of lower eyelid margin from Kaninika sandhi to Apanga sandhi with Anjana Shalaka or finger tip. Types of Anjana according to action of drugs are:²³

1. Lekhanajana- Used in Kapha predominant diseases of eyes

- Vata predominant netra roga- Amla- Lavana Rasa
- Pitta predominant netra roga - Tikta-Kashaya rasa
- Rakta Predominant netra roga -Kashaya-Tikta Rasa

2. Ropananjana- Drug is oily & it gives strength & complexion to the eyes.

3. Prasadanjana- It is prepared with Madhura & Snigdha medicines.²⁴

Samhitas	Types of anjana	Anjana kalpana	Matra	Anjana Kala	Indication
Sushruta & Ashtanga hridaya	Lekhana Ropana Prasadana	Gutikanjana	Gutikanjana & Rasakriyanjana- Lekhana-1 harenu Prasadana-1.5harenu Ropana-2 harenu	Morning And Evening	Mahabala of dosha (severe) Madhyamabala of dosha (moderate)
Ashtanga sangraha	Lekhana Ropana Prasadana Snehana	Rasakriyanjana	Lekhana- 2 shalaka Prasadana- 3 shalaka Ropana- 4 shalaka		Hinabala of dosha (mild)

Indication: Alpa sophia, Itching, Asrusrava, Foreign body sensation, Thick discharge, etc.

Contraindication: Udavarta, shrama, weeping, alcoholic, anger, fearful, fever, shiroroga, suppression of natural urges, night, during sleep, noon, extreme heat, fatigued eye, etc.

Samyakayoga lakshana: Clarity, lightness, free from discharge and other symptoms.

Atiyoga lakshana: Redness of eyes, pain, timira, discharge and swelling.

Hinayoga lakshana: aggravation of symptoms, squint, hardness of lid, discolouration, ptosis, severe dryness and discharge.

Chikitsa:

- For atiyoga: Vatahara and santarpana chikitsa, aschyotana & pratynajana with shital dravyas,
- For hinayoga: Dhooma, nasya, & tikshananjana.

Anjanayogya common drugs:

- **Gutikanjana:** Chandrodaya varti, Chandrakala varti, Haridradi varti, Samudraphenadi varti, etc.
- **Raskriyanjana:** Guduchyadi rasakriyanjana, Baboolapatra rasakriyanjana, etc.
- **Churnanjana:** Marichadi churnanjana and Shirisbijadi churnanjana, etc.

CONCLUSION

The kriyakalpa procedures explained in Ayurveda is Bahyaparimarjan Chikitsa and follows the topical treatment protocols for the eye. Various drugs can be selected according to the stage and types of the disease. It has high bio-availability of drugs to the target tissue of eye due to its own pharmacotherapeutic action and tissue contact time. The time duration is under control so any unwanted effects can be easily managed. Kriyakalpa plays very effective role to maintain netra swasthya and netra rogachikitsa.

REFERENCES

1. Biswal Adikanda, Routray Rasmita. A text book of Shalakyia tantra, Vol-I, 1st ed. New Delhi:Chaukhambha Publication; 2015.1:1

2. Biswal Adikanda, Routray Rasmita. A text book of Shalakyia tantra, Vol-I, 1st ed. New Delhi:Chaukhambha Publication; 2015.1:1-2
3. Sreedhar Suja K. A Text Book of Shalakyia Tantra Part-1, 1st ed. Varanasi: Chaukhamba Orientalia; 2016. 2B:53
4. Sreedhar Suja K. A Text Book of Shalakyia Tantra Part-1, 1st ed. Varanasi: Chaukhamba Orientalia; 2016. 2B:53
5. Agnivesha. Sutrasthana. Shastri Kashinath, Chaturvedi Gorakhnath. Charakasamhita, Vidyotani Hindi commentary, reprint ed. Varansi: Chaukhambabharati academy publication; 1988. 26:231
6. Sushruta. Uttarsthana. Shastri kaviraj Ambikadatta, Sushrutsamhita, Ayurvedtattvasandipika Hindi commentary, 11th ed. Varansi: Chaukhambabha sanskrita samsthana; 1988. 26:231
7. Vagbhata. Sutrasthana. Sarvangasunder commentary of Arunadatta and Ayurveda rasayan of Hemadri. Ashtangahriday, reprint ed. Varansi: Chaukhambabha sanskrita samsthana; 2010. 23-24
8. Vagbhata. Sutrasthana. Gupta kaviraj Atridev. Astanga sangraha, reprint ed. Varansi: Chaukhambabha sanskrita samsthana; 2010.
9. Sharangadhara. Uttarakhanda. Adamalla's Dipika and Kashirams Gudartha Dipika. Sharangadhar Samhita, 5th ed. Varansi: Chaukhamba Orientalia; 2002. 13
10. Chakrapanidatta: Chakradatta with Hindi commentary by Indradev Tripathi, Fourth edition, Reprint in 2002, Chaukhamba Publications, Chakradatta 76.
11. Yogaratnakara.Kumari Asha, Tiwari Premvati. Part 1 and Part 2, reprint ed. Varanasi: Chaukhamba vishvabharati; 2010
12. Vagbhata. Sutrasthana. Kunte A.M. Sarvangasunder commentary of Arunadatta and Ayurveda rasayan of Hemadri. Ashtangahriday, reprint ed. Varansi: Chaukhambabha sanskrita samsthana; 2010. 24:308
13. Sreedhar Suja K. A Text Book of Shalakyia Tantra Part-1, 1st ed. Varanasi: Chaukhamba Orientalia; 2016. 2B:59
14. Sushruta. Uttarsthana. Dalhanacharya. Sushrutsamhita, Ayurvedtattvasandipika Hindi commentary, 11th ed. Varansi: Chaukhambabha sanskrita samsthana; 2010. 18 (23-26,28):634

15. Vagbhata. Sutrasthana. Kunte A.M. Sarvangasunder commentary of Arunadatta and Ayurveda rasayan of Hemadri. Ashtangahriday, reprint ed. Varansi: Chaukhambabha sanskrita samsthana; 2010. 24:308
16. Sharangadhara. Uttarakhanda. Parashar Radhakrishna. Sharangadhar Samhita, reprint ed. Nagapur: Baidyanath Ayurved Bhavan; 1994. 13:579
17. Vagbhata. Sutrasthana. Kunte A.M. Sarvangasunder commentary of Arunadatta and Ayurveda rasayan of Hemadri. Ashtangahriday, reprint ed. Varansi: Chaukhambabha sanskrita samsthana; 2010. 24:636
18. Agnivesha. Acharya Jadavji Trikamji, Chakrapanidatta. Charakasamhita, Vidyotani Hindi commentary, reprint ed. Varansi: Chaukhamba Sanskrita Sansthan; 1994. 610
19. Sushruta. Uttarsthana. Dalhanacharya. Sushrutsamhita, Ayurvedattvasandipika Hindi commentary, 11th ed. Varansi: Chaukhambabha sanskrita samsthana; 2010. 18:633
20. Sharangadhara. Uttarakhanda. Parashar Radhakrishna. Sharangadhar Samhita, reprint ed. Nagapur: Baidyanath Ayurved Bhavan; 1994. 13:579
21. Sharangadhara. Uttarakhanda. Shrivastava Shailaja. Sharangadhar Samhita, reprint ed. Varansi: Chaukhamba orientalia; 2011. 11:426
22. Sharangadhara. Uttarakhanda. Parashar Radhakrishna. Sharangadhar Samhita, reprint ed. Nagapur: Baidyanath Ayurved Bhavan; 1994. 13:579
23. Mishra Pandit Brahmsankar. Madhyamkhanda Netrarogadhikar. Hindi Commentary, Bhavmishra, bhavprakash with Vidyotini. Varansi: Chaukhambabha sanskrita samsthana; 63:659
24. Sushruta. Uttarsthana. Dalhanacharya. Sushrutsamhita, Ayurvedattvasandipika Hindi commentary, 11th ed. Varansi: Chaukhambabha sanskrita samsthana; 2010. 18:636