

A Comprehensive Study of Kriyakalpa

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Abstract

Many procedures and formulations have been described in Ayurveda to cure Netrarogas. There is need for controlled, sustained releasing formulations which will affect all parts of eye. Kriyakalpa is a main therapeutic procedure for Netraroga which is described in Sushrut Samhita(Uttartantra), Vagbhata(Sutrasthana), CHaraka(Chikitsasthana), Sharangdhara Samhita(Uttarkhanda), CHakradatta(chapter76). Different types of kriyakalpa, their mode of action and its importance in Netraroga will be discussed in present review article.

Keywords - Netraroga, Kriyakalpa, Samhita.

Introduction-

All efforts should be made by men to protect the eyes, through out the life. For the man who is blind this world is useless, the day and night are same even though he may have wealth.

There are two main principles of Ayurveda i.e protective and curative. Kriyakalpa ara used for both protective and curative purposes of eyes.

Kriyakalpa= Kriya +kalpa.

Kriya - Act / Action/ Medical treatment/ Practise.

Kalpa- Practicable/ Idea/ Art of preparing medicine.

Kriya means therapeutic procedure for treatment in Ayurvedic ophthalmology used to cure the disease and Kalpa means practicable, possible, manner of acting, a prescribed therapy. It includes selection of specific procedure, preparation of special drug form and finally its proper application to the eyes.

Defination of Kriyakalpa-

No specific definition given by ancient scholars except the commentator Dalhana who opinions that Kriyakalpa includes various preparations like tarpana, Putpaka, etc for the treatment of eye diseases, as a local treatment of eye diseases, as a local measure.

Kriyakalpa mentioned by different authors-

Kriyakalpas are specially designed according to the stage, severity and site of disease. Sushruta the father of Indian ophthalmology mentioned five Kriyakalpas

1. Tarpana
2. Putpaka
3. Seka
4. Aschotana
5. Anjana.

Two more procedures added by Sharangdhara and Vagbhata

6. Pindi
7. Bidalaka.

Kriyakalpa procedure mode of action and indication

1. Tarpana- Tarpana is mainly lukewarm medicated ghrita or taila is filled over eye upto complete immersion of eye lashes for specific time by making circular boundary around orbital fossa using dough.
- Probable mode of action-
Tissue contact time is more.
Both corneal and precorneal drug absorption
Both lipid and water soluble drugs absorbed
Effective in both anterior and posterior segment disease.

- Indications- Indicated in various eye diseases of anterior and posterior segment where tamyata, rukshata are present also used in Adhimantha. Jivantyadi Ghrita used in ARMD, optic atropy and degenerative diseases of retina. Patoladi Ghrita in Uveitis, Durvadya Ghrita in Diabetic retinopathy(NPDR) and Triphala Ghrita in reafrective errors.
- 2. Putpaka-
 - Procedure- It is same as Tarpana but medicine is prepared by extracts of plant drugs, animal flesh, mineral drugs and fats, by heating their mixture in a closed chamber.
 - Probable mode of action-
Tissue contact time is more
Drug ionization, nano particles causes better absorption so bio availability is more.
Very effective in both anterior and posterior segment eye diseases.
 - Indications-Indications of putpaka are like Tarpana. Useful in both anterior and posterior segment diseases for example Pippalyadi putpaka in Retinitis Pigmentosa, Krushnadi putpaka- corneal opacities.
- 3. Seka
 - Procedure- It is pouring of medical solution of dravyas from 4 angula height on closed eyes continuously for specific time.
 - Probable mode of action-
Absorbed by direct diffusion
Tissue contact time is less and more drug excretion
But it is effective as it also removes surface pathogens and toxins
Used in anterior segment diseases.
 - Indication- Indicated in acute and severe affections of eyes.
- 4. Aschotana-
 - Procedure- It is upakrama in which medicated drops of following drugs are instilled into open eye from 2 angula height at kaninika sandhi.
 - Probable mode of action-
Absorbed by direct diffusion
- Less tissue contact time but gives better compliance(peak serum level time of drug) as it is instilled frequently
Very commonly used.
- Indications-First line of treatment in all ocular inflammatory conditions where raga, daha,ashru strava, sopha, toda are present.
- 5. Anjana-
 - Procedure- It is local application of medicinal paste/ powder/ thick liquid of drugs to inner surface of lid margin with the help of Anjana shalaka or finger from kaninika sandhi to apanga sandhi.
 - Probable mode of action-
Solid drug delivery in both conjunctival and scleral area.
Compliance is less but effective as tissue contact time is more due to prolonged drug delivery.
 - Indications- when clinical features of doshas have become manifested and localized in the eye and acute inflammatory signs are subsided by the the application of seka and aschotana.
For example inNaktandhya Marich and dadhi Anjana or Pippalyadi Anjana. In Arma Chandrodaya Varti Anjana, Guduchi Rasakriya Anjana in vascular disorders of retina and optic nerve diseases. Chandraprabha varti Anjana in degenerative conditions of conjunctiva (pinguicula).
- 7.Bidalaka-
 - Procedure- Local application of paste of drugs to eyelids externally except at the eyelashes.
 - Probable mode of action-
Transcutaneous drug absorption
Vasodilation and drainage of toxins from the side of lesion.
 - Indications- Indicated in mild inflammatory conditions and in prodromal conditions where Vedana, toda, ashru, shopha, kandu are present.

Selection of Kriyakalpa according to stage of disease

- Inflammatory conditions (Aamavastha)
 - Seka
 - Aschotana
 - Pindi
 - Bidalaka
- Non inflammatory conditions (Niramavastha)
 - Tarpana
 - Putpaka
 - Anjana

Selection of Kriyakalpa according to segment of eye.

- Anterior segment -Aschotana
 - Seka
 - Tarpana
 - Putpaka
 - Anjana
- Posterior segment -Tarpana
 - Putpaka
 - Anjana

Discussion

The main aim of any Kriyakalpa procedure is the attainment of an effective concentration at the site of action for a sufficient period of time to elicit the response.

There is a need for drug delivery which are controlled, sustained releasing, particularly for conditions that affect the posterior segment. Various non implantable and implantable drug delivery devices have been developed which are far from satisfactory but results in more adverse effects.

Kriyakalpa procedures are safe, effective drug delivery methods for all parts of the eye.

Conclusion

Ancient acharyas were aware of the mechanism of blood aqueous barrier, blood retinal barrier as well as ocular pharmacology, so they indicated kriyakalpa procedures for eye treatment.

In all the drug preparations of kriyakalpa mostly herbal and natural excipients are used.

Putpaka is highly developed nanoconcept which is been used since thousands of years.

Various drugs can be selected according to the stage and type of disease and can be used in various kriyakalpa procedurs according to the stage

and type of disease and can be used in various kriyakalpa procedures according to the need.

Less doses required for optimum effect. To clean/ remove surface pathogens and toxins topical therapies are essential. Non surgical and cost effective treatment.

Can be used as preventive as well as curative measures. All kriyakalpa are therapeutic modalities where exact amount , dosage schedule, frequency etc. have already been standardized by the ancient authors.

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