Netra Tarpana - An Efficacious Rejuvenate Local Medication of Eye and Standardizing Samayak Tarpita lakshana of Netra with the Help of Questionnaire

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Authors’ contributions
This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Ayurved is one of the great gifts of the sages of ancient India to mankind. 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. Kriyakalp is the main therapeutic process for Netra rogas. Kriyakalp means the procedures in which various drugs are applied in & around the eye ball as a treatment modality. the importance of Ayurvedic treatment in the diseases of eyes cannot be ignored. There is a great need to find out an ocular procedure for prevention and treatment of eye diseases having no or least adverse effect. Tarpan karma is one of the local therapeutic procedures which if promptly used shows objective evidences of excellent responses. In this Article there is a review
on Netra Tarpana Karma, their indications, contraindications and possible mode of action, Standarding Samayak Tarpita Lakshan with the help of Questionnaire. Questionnaire is discussed with expert, we discussed action and we have finalized the Questionnaire with the Stalwarts of Shalakiya Tantra.

Keywords: Kriyakalpa; Ttarpana; samyak tarpita lakshana; standardized questionnaire.

1. INTRODUCTION

Ashtang Ayurved denotes eight different branches of Ayurved in which Shalakyatantra is one of the most important branch dealing with Urdhvajatrugat vikara. Netra is one of the most important Dynanendriya. Hence it is very essential to maintain the Swasthya of Chakshu Indriya. For this different therapeutics (Kriyakalpa) are mentioned in classics.

’Swaṣṭhasya swaṣṭhyarakṣhānan aturasya vikārprāshhaman ch’. [1]

Therapeutic is defined as the branch of medicine concerned with the treatment of disease and the action of remedial agents or a therapy, or drug.

Ayurvedic therapeutics (Kriyakalpa) helps in maintaining Swasthya and to cure diseases.

Kriya = Therapeutic action Kalpa = specific formulation of medicines.

Eyes are the only organ in the body which receives separate Treatment modality like Kriyakalpa as Bahyaparimarjan Chikitsa and no other organs are individually receives the treatment modalities like Kriyakalpa on eyes. Tarpana karma is one of the local therapeutic procedures which if promptly used shows objective evidences of excellent responses. Tarpana is usually practiced Kriya in Netra Chikitsa which is Brimhana (nourishing) in nature [2].

Kriyakalpa are numbered are as follows along with their references

### Classification of Kriyakalpa:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Samhita Name</th>
<th>Reference</th>
<th>Adhyaya Name</th>
<th>Number of Kriyakalpa</th>
<th>Names of Kriyakalpa</th>
</tr>
</thead>
</table>


**Tarpana karma:**

**Purva Karma (Pre-treatment procedure)** – [10]

1. Preparation of the patient:
   - The parson is thoroughly examined.
   - Explain the person about procedure.

2. Preparation for the treatment:

   **Materials:** Ghruta (medicated ghee), Flour of black gram for the construction of *Netra Tarpana* socket (ring/cabinet), Water, Stove, bowls, vessels, spoons. Sterile cloth / cotton.

   Sterile preparation of the items required items like cloth, cotton, bowl, and spoon are sterile with autoclave sterilization method.

   **Immediate Purvakarma’s:**
   - **Kaya Shuddhi:** Body cleansing (purifying, detoxifying) measures including – Vamana – therapeutic emesis (vomiting) and Virechana – therapeutic purgation
   - **Shiro-Shuddhi:** Head cleansing measure (treatments meant for purifying and detoxifying head and sense organs) i.e. Nasya or Shiro-virechana (Nasal instillation of medications)

3. Preparing the flour ring or cabinet -- Flour of black gram will be mixed thoroughly in a sterile vessel by adding water and little. The mixture is made into a bolus. From this, 2 small rings so as to fit around the eye socket are prepared. That means to tell that the inner circumference of the ring will fit on the boundary of the socket of the eye so as to enclosure the eye within it. The height of the ring should be of 2 angula’s [11] (1 angula=1.75 cm approximately). Small quantity of prepared flour should be kept in a small bowl. This would be useful to seal the junction of the ring with the socket of the eye so as to prevent leakage of medicaments.

4. Preparing the medicine – The ghee which would be used for *Netra Tarpanam* shall be liquefied and kept lukewarm. For this, the required quantity of ghee is put in a small sterile bowl. The small bowl is placed in a big vessel having hot water. After the *Ghrita* gets melted its temperature should be checked (manually). The medicine should be administered lukewarm.

5. Fomentation – A gentle fomentation is given to the eyes with cloth dipped in warm water before the treatment. The water shall be wiped off with a sterile cloth or cotton before constructing the *Tarpana* ring.

**Pradhana Karma (Treatment proper)** – [11]

After explaining the method of treatment to the patient in detail, he or she shall be taken to a place devoid of heavy breeze or air to conduct *Akshi Tarpana* treatment.

1. Season and Time of *Tarpana* treatment: The treatment shall be done in ‘Sadharana Kala’ i.e. in a season which is neither too hot nor too cold and when there is no rain or sky enveloped with clouds.

   The treatment should be conducted either in the morning time or evening time or at both times if the condition of the disease demands an extra attention

2. Position of the patient: The patient is made to sleep supine (on the back or facing the roof). He or she shall be given a neck support.

3. Construction of *Netra Tarpana* cabinet (ring) around the eye: The rings of flour which were kept ready in the *Purvakarma* are inserted over the eye sockets, (one on each eye) such that the eyes are enclosed within their respective rings. The junctions of the rings with eye sockets are sealed with wet flour so that the medicament doesn’t leak or escape during the process of the treatment.

4. Filling the *Tarpana* Ring with medicine – The medicated *ghee* (ghrita) which was melted and kept warm in the *Purvakarma* is gently poured in the Netra Tarpana cabinets such that the eyes are dipped within the medicine. The patient is advised to close the eyes while dropping the medicine in the ring. Later he or she is instructed to open and close the eyes repeatedly so that the interior of eyes come into the contact of the medicines intermittently. The medicaments are left in place for a fixed duration of time. The patient might experience burning sensation during the process of the treatment but he or she should be intimated that it is quiet natural to happen. The irritation will come down once the medicines are removed.

   **Doses of drug:** Approx 40 ml for both eyes
Duration of Tarpana [12]

<table>
<thead>
<tr>
<th>Doshabhedha</th>
<th>Sushrut Samhita</th>
<th>Ashtang Hridya</th>
<th>Sha. Samhita</th>
<th>Bhav prakash</th>
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According To Adhishtana

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<td>Sarvagata</td>
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Note:

Matra Kala is the time required to count the mentioned number ex. 100 Matra Kala is the time needed to count the numbers 1-100. 1 matra kala is also explained as time required for spelling or pronouncing a guru akshara (difficult alphabet). It is also the time taken to draw a circle in air around the knee and making a click sound with the help of thumb and middle finger[13].

In all cases, it is preferable to do Tarpana until Samyak Trupta Lakshana’s are obtained (signs of properly administered Tarpana).

Procedure timing - 10 minutes approx

Paschat Karma (post treatment procedures) – [14]

1. Removing the medicine – The medicine is removed by creating a small hole in the lower portion of the wall of the flour ring at the outer angle of the eye and draining the contents in a bowl. Alternately, the wall of the ring is broken at the outer canthus (outer angle of the eye) and the contents are drained in a bowl.

2. Wiping the eyes and the surrounding area – The medicines sticking to the eye and the sockets are swabbed out by wiping them off with the help of a sterile cotton pad or a tissue paper. Later the eyes can be wiped off gently with a sterile cloth dipped in warm water or the same cloth is used to give a gentle fomentation to the eyes.

3. Dhumapana – Herbal Smoking should be given to eliminate the Kapha which has been exaggerated due to the administration of Ghrita and or Ghrita Manda in Netra Tarpana

4. Virechana Nasya or Shiro-virechana – Purgatory / strong and intense nasal medications are instilled and it serves the same purpose of Dhumapana. Nasya can be altered with Dhumapana (used purely on the decision of the doctor)

5. Putapaka – After the Netra Tarpana, a procedure called Putapaka is done. The eyes get tired after Tarpana. Putapaka is done to ward off the tiredness. The method of treatment is similar to that of Netra Tarpana. Mamsarasa (meat-soup), Dugdha (medicated milk), Ghrita (medicated ghee), Vasa (muscle fat) etc extracted by the process of Putapaka is used as fill up.

Indications of Netra Tarpanam – [15]

- Tamyati – feeling of darkness in front of eyes (also due to irritation after exposure to light)
- Ati vishushkam – excessive dryness of the eyes
- Ati daruna – eyes appear to have hardened
- Sheerna pakshma – eye lashes falling down
- Aavila netram – dirtiness of eyes
- Jihma netram – abnormal deviation of eye ball
- Roga klishtam – eyes which have been constantly and repeatedly afflicted and debilitated due to many diseases

Contra-indications of Netra Tarpana – [16]

- Durdina – cloudy day
- Atyushna dina – very hot day
- Ati sheeta dina – very cold day
- Chinta – person who is mentally worried
- Aayasa – after physical exhaustion
- Bhrama – giddiness
- Ashanta upadrava – when complications like inflammation, redness, severe pain etc persists in the eye.

Samyak Trupta (Tarpana) Lakshana (Signs of properly done Tarpana): [17]

“तपणे तृितलंगान नेयेमान लयेत् ।
सुखवपनावबोघवं वैशधं वण पाटवम् ।
नवृितयाधववंसः या लाघवमेव च।”

(सू.5.श-११/११)

- Prakasha Kshamata – Tolerance to light (eye can tolerate light falling on it)
- Vishada lochanam – lack of clarity of eye and vision, feeling as if the vision has been clouded
- Guru lochanam – heaviness of the eye
- Svatma nashanam – loss of sleep
- Varna patava akshamata – inability to perceive colours
- Anivritti – sick eyes

Other symptoms: [19]

- Ruksham – dryness of the eye increases
- Aavilam – increase of dirtiness of the eye
- Asraadyam – excess of tearing of eye
- Rupa darshanam asaham – inability of perceiving the objects of vision
- Roga vriddhi – increase in disease and their symptoms

Ati Trupta Lakshana (Signs of overly-done Tarpana): [20]

- Guru netrata – heaviness of eye
- Avimalam – dirtiness of eye
- Atinsigdham – excessive unctuousness or oiliness of eye
- Ashru – excessive lacrimation (tearing of eyes)
- Kandu – itching of eyes
- Upadeha – coating in the eyes
- Dosha samutklishtam – aggravation of vata etc doshas

Medicines used for Netra Tarpana:

- Triphala Ghritam
- Jeevantyadi Ghritam
- Mahatriphla Ghritam
- Yashtimadhu Ghritam

Tarpana therapy benefits: [21]

- Nayane Tamyati – Feeling of darkness in front of eyes (also due to irritation after exposure to light)
- Stabdha netra – Feeling of stiffness or rigidity in the eyes
- Netra shushkata – Extreme dryness of the eyes
- Abhighata – Injury to the eye
- Vata pittaja roga – Diseases of the eyes caused due to aggravation of Vata and Pitta
- Jihma netram – abnormal deviation of eye ball
Sheerna pakshma – eye lashes falling down
Aavila Akshnam – dirtiness of eyes
Krichra unmilana – Difficulty to open or close the eyes
Siraharsha – A type of cellulitis (Acute orbital cellulitis) occurring in the eyes
Sirotpata – Hyperaemia of conjunctiva
Arjuna – Phlyctenular conjunctivitis
Abhisyanda – Conjunctivitis
Adhimantha – Glaucoma
Anyatovata – Hyperaemia of conjunctiva
Vata paryaya – Atrophy of the cranial nerves
Shukra – Keratitis or inflammation of cornea
Ragadi shantata – After pacification of Redness of eyes, tearing, pain, irritation and dirt.

Probable mode of the action of Tarpana
First of all Sthanika mrudu snehana & swedana was given (this could have helped in dilation of conjunctival sac & limbal vessels which in turn helps in better absorption)
Topically instilled medications largely penetrate intraocularly through the cornea.
The cornea epithelium & endothelium are lipophilic and are crossed readily by lipid soluble drug.
The active principles in medicated ghrita easily gain entry through corneal epithelium irrespective of their low molecular size
Duration of tarpana upto 10 mints approx.
Ghrita is highly viscous the contact time is increased & this helps penetrating of drug through cornea
The drug absorbed through cornea & enters into the anterior Chamber & they enter the capillaries & reaches ophthalmic arteries.
The active principle of medicated ghrita reaches central nervous system & nourishes the structures around including the nerves supplying of eyes
There by strengthening the ocular muscles
This might have helped in some asthenopic symptoms (eye strain, headache, watering etc.)
The pressure excreted by ghrita its surface tension & contact time with cornea would have helped in flattening the sleep corneal surface to some extent.

There by reducing the cylindrical power.

2. CONCLUSION
After reviewing various researches and available scientific data regarding Tarpana it can be concluded that, Tarpana is a superior therapy than merely using eye drops. Tarpana acts on the principle of Bahya Snehana. It can successfully cross the defensive Barriers present in eye for absorption and nourish the ocular and periocular Structures & also strengthens the sphincters. On virtue of drug utilised for Tarpana it also provides nutrition directly to the target organ. Netratarpan is the best modality of myopia and other eye disease. Administration of Tarpana in the Eye, Drug absorb through various layers of the eye and drugs spread in to the deeper tissues through Rupavaha Siras.Ghrita is having Rasayana, Balya & Chakshushya properties. By the Activation of Alochaka Pitta it induces of Chakshu vaisheshika & Buddhi vaisheshika Alochaka Pitta. Chakshu vaisheshika Alochaka Pitta Increased power of DrishtiNadi. Buddhi vaisheshika Alochaka Pitta Activate of Visual centre in Brain (Optic nerve).
So improve Visual status & Tarpan is the best treatment modality for eye disease.
It maintains the health of eye & cures the eye diseases.

COMPETING INTERESTS
Authors have declared that no competing interests exist.

REFERENCES
4. Sushruta Uttarsthana, Shastri Kaviraj Ambikadatta, Sushrutasamhita,


QUESTIONNAIRE BEFORE & AFTER TARPANA

(Questionnaire is discussed with expert, we discussed action and we have finalized the Questionnaire with the Stalwarts of shalakya tantra. It is a subjective perameter differs person to person.)

1) When you wake up in the morning, do you feel (Sukhaswapana avbodhatva) Blissful awakening?

☐ Yes
☐ No

Discussion: Sukhaswapana avbodhatvam word has 2 meaning
1. Sukhaswapana avbodhatvam means when you wake up you feel like blissful awakening.
2. Sukhaswapana avbodhatvam means person sleeps as soon as you go to bed.

2) Do you feel your vision is (vaishadhya) Clear?

☐ Yes
☐ No

Discussion: Vaishadya word has two meaning.
1. Vaishadya means clear vision (person can see better than before)
2. Vaishadya means clear eye (person not have mala in eye or near eyelids)

3) Do you feel Perception of colours is (Varnapatava) Discernment of individual colours?

☐ Yes
☐ No

Discussion: Varnapatava word has two meaning:-
1. Varnapatava means person can find perfect difference in each colour.
2. Varnapatava means person's sclera in it's normal colour.

4) Do you feel activity of the eye lids is (Kriya laghvama) easiness in closing and opening?

☐ Yes
☐ No

Discussion: Kriya laghvama word has two meaning:-
1. Kriya laghvama means person can blinking easily or eye movement are normal.
2. Kriya laghvama means person's vision process is normal.

5) Do you feel light stress (Prakash kshamta) is Tolerated?

☐ Yes
☐ No

Discussion: Prakash kshamta means person react normally to light or some rays of light.

6) Do you feel (Laghu lochanam) lightness in the eyes?

☐ Yes
☐ No

Discussion: Laghu lochanam means person fills lightness or stress free while reading books/watching TV
7) Do you feel (Nirvritti) establishment of pleasure and health in the eye?
   □ Yes
   □ No
   
   Discussion: - Nirvritti means feel like prevention of eye from disease.

8) Do you feel (Vyadhi vidhwamsa) destruction of eye diseases?
   □ Yes
   □ No
   
   Discussion: - Vyadhi vidhwams means after Tarpana eye is disease free.

Note:- Atarpit and Atitarpit lakshna also asses with this questionnaire
(There is some diff. Symptoms)

9) Do you feel (Atisnigdham) excessive unctuousness or oiliness of eyes?
   □ Yes
   □ No
   
   Discussion: - Parson fills dryness in the that means it is a Atarpit lakshana, if they fill excessive oiliness it is a Atitarpit lakshana.

10) Do you feel (Ashru) excessive lacrimation (tearing of eyes)?
    □ Yes
    □ No
    
    Discussion: - person feels excessive lacrimation or excess(lack) of tearing.

11) Do you feel (Kandu) itching of eyes?
    □ Yes
    □ No
    
    Discussion: - Kandu means itching of eye

12) Do you feel (Upadeha) coating in the eyes?
    □ Yes
    □ No
    
    Discussion: - means stickiness in eye

# Assessment of questionnaire:-

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<th>Yes</th>
<th>No</th>
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