

PREVALENT PRACTICE OF ASHCHYOTANA KRIYA-KALPA IN INDIA - A SURVEY STUDY

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ABSTRACT

Introduction: Survey research is a research method involving the use of questionnaires or surveys to gather information from individuals. Surveys involve systematic collection of information using standardized procedures. In it questions are asked to people designed to measure or identify the status or level of a characteristic.

Aims and Objectives: To know the present status of practice of Aashchyotana Kriyakalpa (ancient method of instilling eye drops) in India. Which will further be the base for optimization of its 'Standard Operating Procedure'(SOP) and standardization.

Method: As a part of optimization of SOP of Aashchyotana procedure, the study has been planned into three phases viz. Survey study, Execution of the procedure on healthy individuals thus to further refine them and finally Validate the refined SOP clinically.

A national survey on Aashchyotana procedure was conducted in six pioneer institutes where all the kriyakalpa procedures are practiced with the help of a survey proforma containing the questionnaire was prepared on the basis of classical as well as traditional practice which is prevailing throughout India.

Observation and discussion: The observational data collected from the national survey was discussed and critically analysed and then an average opinion is presented in respect of different steps of the procedure like quantity of Aashchyotana bindu, height, temperature and site of application. Thus moderated parameters will be subjected for response of 39 volunteers having different combinations made by the help of Unscrambler software for finalizing the SOP of Aashchyotana (to be presented as a next article).

Results: Aashchyotana kriyakalpa procedure is practiced throughout the country differently by the centers and experts of nethra chikitsa. All the experts participating this survey study where of the opinion that formulation of SOP and further standardization of each kriya kalpa procedure is the need of day.

Key Words: Standard Operating Procedure, Aashchyotana, Optimization of Parameters, National survey

INTRODUCTION

According to *Acharya Sharan-gadhara Seka, Aashchyotana, Pindi, Bidalaka, Tarpana, Putpaka and Anjana* are the seven kriyakalpa (netra bahya chikitsa) procedures in order of their clinical application¹.

According to *Acharya Vagbhatta Aashchyotana*² (eye drop application) is

the first and foremost ocular therapeutic procedure for all type of eye disease. In present era in the society for eye diseases, eye drops are more prevalently used. So this important ocular therapeutic procedure had been selected for its SOP preparation and the project is completed in three phases viz.

1. Status of prevailing practice of *Aashchyotana* in country and its moderation,
2. Response of healthy subject to the moderated SOP to further refine them and
3. Clinical efficacy evaluation of the adopted SOP. In this paper the fore most phase of prevailing practice and moderation is only presented. Each of these ocular therapeutic measures has their specific indications, preoperative, operative and postoperative procedures mentioned in the classics of *Ayurveda*. *Aashchyotana* is specially indicated in conditions of eye i.e. ruk, toda, kandu, gharsha, ashru, daha and raga². Variety is noted among in opinions of different centers regarding these operating procedures and their indications. Nowadays, various centers of *Nethra roga chikitsa* are practicing these therapeutic measures by following their own accepted parameters. Keeping in view above facts and the importance of these local ocular therapeutic measures in eye care, it was felt necessary to optimize SOP for these *Kriyakalpas*, so that it can be followed universally and thus, can be subjected for standardization after validation of the SOPs. *Aashchyotana* is the method of instilling of liquid medicine drop by drop in opened eye at inner canthus (kaninaka sandhi) from two angulas of height. *Aashchyotana* is indicated in *Aamvastha* of *Netraroga* – acute inflammatory condition of eye i.e. pain, foreign body sensation, burning sensation, redness, itching, discharge, lacrimation, and swelling. Formulations of different properties are indicated in different pathological conditions, e.g. in *Vataja* disorders tikta and Snigdha; in *Pittaja* disorders Mrudu and Sheeta; in *Kaphaja* disorders Tikta, Ushna and Rooksha is used^{3,4}. In this study the Anubhoota yoga of Bhaishajya Sara Sangraha – Fullika Drava, modified and named as Punarnavadi Eye Drops has been

chosen for developing its SMP (Standard Manufacturing Procedure) and clinical efficacy evaluation.⁵

AIMS:

To Know the present status of practice of *Aashchyotana* in India and to moderate them for further evaluation.

OBJECTIVES:

1. Optimization of 'Standard Operating Procedure' of *Aashchyotana*.
2. To make the adopted SOP as baseline for standardization of this ocular therapeutic Procedure.

MATERIAL AND METHODS:

1. Classical literature of Ayurveda will be explored to study the conceptual part of the *Aashchyotana kriyakalpa* in detail.

2. Prevailing practices of *Aashchyotana*:

i) A survey study on *Aashchyotana kriyakalpa* was carried out among the **practitioners of Shalakyas** throughout India from **pioneer national institutes of *Nethra chikitsa*** Viz:

1. Sreedhareeyam Ayurvedic Eye Hospital and Research Centre, Kochi, Ernakulam Dist.
2. Government Ayurveda College, Thiruvananthapuram.
3. Matha Ayurveda Eye Hospital, Kudapanakunnu, Trivandrum.
4. Government Ayurvedic Medical College & Sri Jayachamarajendra Institute of Indian Medicine (Teaching Hospital), Bengaluru.
5. Government Ayurveda Medical College and Hospital, Mysore.
6. Government Akhandanand Ayurved College, Ahmedabad.

ii) Their practice of procedure of *Aashchyotana* was recorded as per the proforma incorporating all variables of the procedure i.e. Clinical definition, Indications, Drava used; *Aashchyotana* Preparation, Storage and Expire time; Vessel used, Position, Temperature of *Aashchyotana* (fol-

lowing in clinical practice), Any preoperative or post operative measures, Site of application of *Aashchyotana*, Height of application of *Aashchyotana* (following any specific height other than classical method), Duration of retaining of *Aashchyotana*, Number of times *Aashchyotana* performed in a day, Whether the drava can be used only freshly prepared or for longer time; if yes, uptill how many hours? Whether the refrigeration is requirable or applicable? How can we understand *Hina* and *Atiyoga* of *Aashchyotana* and Clinical suggestion or opinion regarding concept and practice of *Aashchyotana*.

3. Initial optimization of *Aashchyotana* Procedure:

Based on the concept developed through extensive review of literature, analysis of prevalent practices in the national centers; the survey proforma of each

center and Shalakyas expert was discussed/analysed critically. All steps of the *Aashchyotana* procedure as per the final outcome of discussion from these centers were taken as the initial optimized steps of the procedure in respect of following variables:

- ***Dosage and method of preparation of Aashchyotana drug***
- ***Volume of liquid used (dose)***
- ***Site of application of Aashchyotana***
- ***Height of Aashchyotana***
- ***Temperature of Aashchyotana***
- ***Time duration of application***
- ***Number of repetitions per day***

Till today no work had been done on the optimization of this procedure, perhaps this institute I.P.G.T and R.A, Jamnagar is taking lead in this area of research.



SURVEY STUDY:

***Aashchyotana* survey report:**

- a. As a part of standardization of standard operating procedure of *Aashchyotana*, a survey had been conducted with the permission of the institute in the month of March 2014 following pioneers

Nethra Chikitsa institutes/ hospitals were visited:

1. Sreedhareeyam Ayurvedic Eye Hospital and Research Centre, Kochi, Ernakulam Dist.
2. Government Ayurveda College, Thiruvananthapuram.

3. Matha Ayurveda Eye Hospital, Kudappanakunnu, Trivandrum.
 4. Government Ayurvedic Medical College & Sri Jayachamarajendra Institute of Indian Medicine (Teaching Hospital), Bengaluru.
 5. Government Ayurveda Medical College and Hospital, Mysore.
 6. Government Akhandanand Ayurved College, Ahmedabad.
- b. The visit aimed at collection of maximum data regarding the practice of *Aashchyotana* procedure.
- c. For data collection, a special *Aashchyotana* survey proforma was prepared on the basis of classical as well as traditional practice which is prevailing throughout india.
- d. The survey proforma were filled by interview method with the chief/ senior *shalakya* practioner of the particular institute. All the practioners surveyed were having good clinical hand in kriyakalpa practice with minimum of thirty years experiences.
- e. Each and every step of the procedure including the vessels, their dimensions, time and quantity of the *dravadraya* – aqueous solution used etc. had been observed thoroughly and documented.
- f. Patients were also interrogated regarding the procedure and its compliance.

To maintain the **the privacy of the pioneer institute and *Shalakya* expert in mind, the name of the institute and clinician has been highlighted in the study by the name of Center 1,2,3,4,5,6 and *Shalaki* 1,2 respectively.** They were interviewed personally and their method of practicing *Aashchyotana* on patients were observed and documented.

OBSERVATION AND DISCUSSION:

From each center two efficient clinicians were interviewed with the help of

Aashchyotana survey Performa, their clinical observations and experiences regarding *Aashchyotana* procedure were noted down in the proforma format and the comprehensive outcome on each variable as per format is as follows:

Data contained following observations *Aashchyotana* procedure practice.

(1) Paribhasha: *Aashchyotana*.

➤ For procedure application the word ‘*Aashchyotana*’ is used mostly and rarely the ‘Eye Drops’.

(2) Indications:

- Mild to moderate type of inflammatory conditions of the eye.

- As a pre-treatment of all Eye Diseases.

➤ According to review of the Survey Study, fulfilling the classical view, *Aashchyotana* can be used in

- Aamaavastha – acute stage of all eye disease for approx. 2 – 3 days, becomes immediate treatment due to easy application and lower dose having no chance of any complications in most cases.

- Casually this procedure has less potentiality of use comparing to other treatment modalities for Aamaavastha e.g. Seka etc.

- It can be used alone in Subacute and Chronic inflammatory Eye Conditions.

- After subciding the acute stage of disease, Seka etc. treatment can be switched over as main a treatment after the application of *Aashchyotana*.

(3) *Aashchyotana* Aushadha: Dosage (form): solutions obtained from following:

- Kwatha, Hima and Faanta

- Ksheera

- Swarasa

- Sruta Jala (Distilled water) and solutions made out of it.

- Arka

- Ghrita - Sneha
- (4) Expiry period – prepared drug
 - Ksheera, Swarasa, Hima – only freshly prepared (max. uptill 3 hours).
 - Kwatha, Faanta – uptill 24 hours.
 - Dravana (Solution) - uptill shelf life according to its contents.
 - Arka and Ghrita – uptill shelf life (for longer period).
 - Arka and Ghrita can be preserved for longer time, so it is suggested to use them on large number of patients and should be prepared from specific drugs for most kind of Eye conditions.
- (5) Refrigeration:
 - For preservation: avoid in most cases, Rasanjan Dravana can be refrigerated (used practically).
 - For cooling: In Pittaja, Raktaja Conditions can be used.
 - Let the temperature of refrigerated drug (very much cold) reach to the room temperature by itself before use, to avoid change in its chemical constituents by sudden temperature variation and to prevent unwanted effect on patient. Then it can be used cold or at normal temperature or by making it warm as per the requirement.
 - After the usage the remained drug should not be used next time as well as should not be added in main stored sample. So, it is suggested to withdraw the quantity of drug from the main stored sample not more than the requirement.
- (6) Vessel:
 - Plastic Dropper Bottle
 - Gokarna Yantra with Cotton Wick
 - Plastic Dropper
 - Cotton Wick
 - Plastic Dropper Bottle is used in most places due to its convinieny for application and also for avoiding the contamination.
- (7) Position:
 - For patient: Supine (Lay down).
 - For doctor: Behind the head of patient.
 - Supine position of the patient gives more time to retain the drug in the eye, thus it gives better result by greater absorption. Five to ten degree tilt of the head towards opposite side eye will be convenient to retain the instilled solution in the inner canthus.
 - Doctor's position behind the head of the patient is more comfortable for the doctor for proper application without any obstruction. This position is more useful in case of child patients to get more co-operation who are afraid of the procedure.
- (8) Temperature:
 - Dosha anusara:
 - In Vataja, Kaphaja Conditions: Warm.
 - In Pittaja, Raktaja Conditions:
 - Ushna, Teekshna Guna Vriddhi: Cold.
 - Other Guna Viddhi: Room temperature.
 - Ritu anusara:
 - In Hemanta, Shishira, Vasanta and Varsha: Warm.
 - In Sharada and Greesham: Cold.
 - In Kerala the temperature remains between 32⁰ C to 36⁰ C whole the year. The temperature is almost same in all the seasons. So they don't consider the temperature as an important factor for the application procedure.
- (9) Poorva Karma:
 - Pramajana with sterile cotton soaked in pure water.
 - Mridu Swedana in Vataja and Kaphaja Conditions with sterile cotton soaked in luke warm water.
 - This helps to maintain antiseptic condition and gives more therapeutic benefit.

(10) Sight:

- Kaninaka Sandhi – mostly.
- On Krishna Bhaga (Cornea) – rarely.
- Application of Aashchyotana in Kaninaka Sandhi spreads easily and gives better tear film.
- Application of Aashchyotana on cornea is rare e.g. in corneal abrasion etc.

(11) Height:

- From 2 Angula (Approx. 3 – 4 cm).
- More height is irritable for eye and less height can touch or damage the eye. Further it raises the chances to spread the infection by the tip of applicator touched to the one patient's eye to another patient's eye. This height fulfills the classical indication and mitigates the above risks.

(12) Matra (On practice opinion):

- General: 1 – 2 drops.
- Dosha anusara:
 - Lekhana: 1 – 2 drops.
 - Snehana: 2 drops.
 - Ropana: 2 – 3 drops.
- From this view, the classical dosha anusara Matra can be inferred as whole day dose which is 8, 10 and 12 Bindus for Lekhana, Snehana and Ropana purpose respectively.

(13) Dharana Kala:

- Untill the end of the feeling/irritation caused by the medicine and drainage of medicine from lateral canthus through watering.
- Approx. 2 – 5 min.
- During this time patient should be advised to rotate his eyeball with closed eyes and to relax.

(14) Frequency:

- General: 2 – 3 times / day.
- Specific: e.g.
 - Ghrita: 1 time (H.S.).
 - In Acute Conditions: ½ - 2 hourly.

- Ghrita Aashchyotana gives blurring of vision by the time, so it is better to avoid its application in day time as far as possible.

- In Acute Conditions the eye requires more medicine to correct the condition. So the frequency of application of drug should be increased. Because practically at a time more than two drops of Aashchyotana drug can't remain in the conjunctival sac.

(15) Pashchat Karma:

- Pramajana of Eye:
 - First with sterile cotton soaked in pure water.
 - Then from dry sterile cotton.
- In Vataja, Kaphaja Conditions: Mridu Swedana with sterile cotton soaked in luke warm water.
- In Pittaja, raktaja Conditions: Pushpa Bandhanam (Jaati etc.).
- Removing the remained unwanted drug from the eye protects from infection and gives more benefit.

(16) Complications:

- If not filtered properly: Foreign Body Sensation.
- More Cold: Jaadya, Guruta.
- Hot: Burning, Heating Sensation.
- From increased Height: Irritation.
- From decreased Height: Harmful
- Maintain SOP to avoid any unwanted complications.

(17) Decision about application (“Yoga”):

- Samyaka Yoga: Good feeling of the patient.
- Anyatha Yoga:
 - Heena Yoga:
 - Ati Yoga: not found yet, because of } lowered dose.
- Anyatha Yoga may be found in future by application on large sample, varies

with different medicine used for different Eye Conditions.

(18) Clinical suggestions:

- Make its use on every eye disease in their primary stage with specific medicine. (FIRST LINE OF TREATMENT).
- After completion of “Seka” treatment, use Aashchyotana as maintainance.
- Try to follow all classical steps as far as possible.
- Finding out of Fat/Water solubility of the drava, can be predicted less or more effectiveness of drug.
- Though it is simplest applicable procedure, the ways should be found to use it also in Nirama Eye Conditions. e.g. Ghrita Aashchyotana can be used instead of Tarpana yogya condition in the patients who don’t have much time for the time consuming Tarpana procedure.
- Use the Ayurvedic preservatives (e.g. Honey).
- Making of universal eye drops preparation, can be used in each and every eye conditions.
- Make more use of ‘Arka’ and ‘Ghrita’ preparation due to longer shelf life.
- Nowadays procedure is done by nursing staff. So make them trained and skillful enough to do this procedure authentically and efficiently.
- Make selection of drug particular and specific for each and every different conditions of eye.

- Follow SOP and SMP as far as possible.
- Follow each and every classical steps as maximum as possible. \
- Modern techniques can be used
- Sterile packing.
- Proper preservation.
- Try to reduce the total cost of drug and to increase its quality.

All the *shalakya* practitioners were well co-operative and showed much enthusiasm to share their clinical experiences. All were of the opinion that standardization of all *kriya kalpa* procedures is need of the hour. It was also observed that method of practicing *Aashchyotana* varied from one institute to another as well as among the clinicians of the same institute. Nowhere, neither the classical method was practiced nor basic concepts were applied in modifying the procedure. Dimension of the device, height, time, temperature of the *drava* was highly variable among the institutes. Most of the practitioners consider it as a safe, best and simple procedure. Since the procedure is more soothing in nature, enjoys good compliance from the patients.

Summary

By summarizing all the observations from the centers, following are the commonly practiced method of Aashchyotana by most of the centers are as below:

No.	Survey Questionare	Common observations
	(General:)	
1	Paribhasha (Terminology which signify clinically):	Aashchyotana
2	Indications:	Classical
3	Aaschyotana Drava used: Kwatha / Ksheer / Sneha / Swarasa / Other (Specify)	Kwatha etc. Other: Arka, Ghrita
4	Aashchyotana Preparation related: a. Used Freshly prepared	a. For Swarasa and Hima

	b. Used uptill 12 / 24 / 36 / 48 hours c. Refrigeration: Required / Not required	b. For Kwatha uptill 24 hours c. Required for dravas used for longer time
5	Vessel used for Aashchyotana karma (Specification):	Dropper Bottle
(Purvakarma:)		
6	Position of Patient:	Supine
7	Temptrature of Aaschyotana Drava (Doshanusara):	Room temperature
8	Temptrature of Aaschyotana Drava (Ritu anusara):	Room temperature
9	Procedure as Purvakarma:	Mridu swedana
(Pradhanakarma:)		
10	Sight of application of Drava:	Kaninika
11	Height of instilling the Drava:	Two Angula
12	Number of Drops as one time dose:	2 drops
13	Dharana Kala of Aashyotana Drava:	100 Matra (2 min 30 sec)
14	Number of times Aashchyotana performed in a day:	2-4 times
(Pashchatakarma:)		
15	As Pashchatakarma applying of:	Pramarjana
16	Any complication / clinical findings during the procedure or after the procedure by not following the classical method?	No
17	How do you decide about application of procedure as: a. Samyaka Yoga / b. Heena Yoga / c. Ati Yoga	Nothing specific

CONCLUSION

Thus the practice of *Aashchyotana* kriya kalpa through out the country varies from center to center and from person to person. All the senior experts involved in the survey agreed to the fact that standardization is urgently needed to remove the variability and ambiguity so that its role can be established in nethra chikitsa.

Hence based upon the critical review of the literature of kriyakalpa for prevalent practice of *Aashchyotana* in country, it was observed that except the patient's position during procedure, indications and clinical application; no other step of the procedure was similar among the experts and treatment centers .

Hence two future phased manner steps in the direction of the optimization are planned i.e.

(i) application of the each step of the procedure with more than two variants on healthy volunteers to note the response (acceptance and rejection factor). Thus the most accepted parameter viz. site of application, height, temperature and quantity will be taken as the initial optimized parameters. Classical literature has already given the guideline about quantity of *Aashchyotana* hence by optimizing the frequency of *Aashchyotana* the quantity of the drava (solution) in one sitting will be finalized.

(ii) In the next phase the parameter of each step evolved through the response of healthy volunteers will be subjected for clinical evaluation and validation on the

patients of a Aama nethra roga i.e. Conjunctivitis. Thus the validated parameters will become the base for further standardization of *Aashchyotana* procedure. Both these future activities in the direction of optimization will be presented in separate research articles.

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