



**COMPARATIVE STUDY OF PHARMACEUTICAL PROPERTIES OF CHANDRODAYA
VARTI WITH MARKET AVAILABLE SAMPLE OF ANJANA**

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INTRODUCTION

Shalaky Tantra is one of the eight specialties of Ashtanga Ayurveda which deals with diseases which occur above the clavicle specially the sensory organs i.e. Eyes, Nose, Ears and Tongue. Eyes hold special status among all the sense organs because good vision is crucial for social and intellectual development of human beings and the knowledge from direct observation (Pratyakshapramana) can be achieved only by eyes. Other sense organs also depend on the eye sight for their accuracy as quoted by ancient sage Vagbhata.^[1] He said that for a man without eyes this world is useless because day and night are same for them even if the other sensory organs are healthy. Thus Vagbhata recommended that all efforts should be performed to protect the eyes throughout the life. Hence authentic classics prescribed several preventive and curative measures to protect the eyes. Almost all the Acharyas prescribed several treatment procedures for the management of ophthalmic disorders such as systemic, surgical, para-surgical and local or topical treatments. Among these several types of treatment modalities local treatments are very specific, effective and unique to the eye diseases and called as "Netra Kriyakalpa". It is similar as Panchakarma in Kayachikithsa. Netra Kriyakalpa have very fast action to the target tissues including posterior segment of the eye. There are seven Netra Kriyakalpas namely Akshi Tarpana, Putapaka, Seka, Aschyotana, Anjana, Bidalaka and Pindi. The first 5 procedures were mentioned in Susruta Samhitha^[2] and last two were prescribed only in Sharangadhara Samhitha^[3] along with other 5 procedures.

- Akshitarpana – Give nourishment to eyes through oily preparations.
- Putapaka – Same as Akshi Tarpana but drug should be prepared according to Putapaka preparation method.
- Seka – Pour liquid medicinal preparations into closed eyes and more beneficial for acute conditions.
- Aschyotana – Same as Seka but Aschyotana is poured into open eyes and it is the foremost procedure for all the eye diseases.
- Anjana – Indicated as curative and preventive measure. It should be applied only in Dosha Pakva Avasta.
- Bidalaka – Medicated paste is applied around the eyes except the eyelids in early stage of eye diseases. It is helpful as it increases the blood circulation to the eyes.
- Pindi – Same as Bidalaka but medicinal paste is kept over whole eye including lashes.

Among all these Kriyakalpas Anjana has unique therapeutic efficacy for several types of ophthalmic disorders and highly recommended as preventive measure of eye diseases in the Ayurvedic system of medicine. A number of ancient Acharyas prescribed

Anjana therapy as daily regimen especially Sauvira Anjana (Animony sulphide) and Rasanjana (decoction of Berberistaaristata – Daruharidra) mixed with bee honey as it eliminates Kapha Dosha from the eye because eyes have predominance of Pitta Dosha or Teja Mahabhoota for its proper functioning or clarity of vision.^[4-6] Apart from the Ayurveda the practice of Anjana was prevalent during Indu valley civilization for prevention of diseases as well as cosmetic purposes. Anjana is also mentioned in Atharvaveda however a detailed description is found in Sushrutha Samhita, Ashtanga Hridaya, Ashtanga Sangraha and Sharangadhara Samhita which are described its classification, form, dosage, method of application, indications and contraindications etc. "Anakthithi Anjanam" is the definition of Anjana and word root is Anji because it gives moving, cleaning and clarity to eyes.^[7] In this procedure a Lepa (semisolid or solid) is applied on the inner part of the lower eye lid from inner canthus (Kaneenika Sandhi) to outer canthus (Apanga Sandhi) with Anjana Shalaka.

AIMS AND OBJECTIVES

1. To review Anjana therapy according to the Ayurvedic point of view.
2. Pharmaceutical analysis of market available sample of Anjana & chandrodaya varti.

Types of Anjana^[8,9,10,11]

According to its form Anjana it is of 3 types i.e. Gutika (Pills), Rasakriya (Semisolid) and Churna (powder). Acharya Susruta and Vagbhata mentioned that the strength of Anjana increases in preceding order as

Gutika, Rasakriya and Churna. However Acharya Bhavamishra mentioned that order somewhat differently as Rasakriya, Varti and Churna. Hence can be used Anjana according to the severity of the disease as Gutika, Rasakriya and Churna for the most severe, moderate and mild disorders respectively. As per the action it is again three types namely Lekhana (scraping), Ropana (healing) and Prasadana (purifying). In Sharangadhara Samhita Snehana (oleation) and in Ashtanga Hridaya Drishti Prasadana (improve vision) type is mentioned instead of Prasadana Anjana in Susrutasamhita.

Table 1: Composition of Anjana.

Type of Anjana	Composition	Action
lekhana	Tikta, Kashaya, Amla, Katu, Lavana Tastes Kshara, Tikshna Guna	Drain out Doshas from eye lids, vessels, sacs, Srotas & Sringataka Marma through mouth, nostrils & eyes
ropana	Kashaya, Tikta + ghee/oil	Healing, improves the colour and visual acuity
Prasadana/Snehana/ Drishti Prasadana	Madhura + ghee/oil	Pacifying the Doshas in vision, oleation

Indications of Anjana

Anjana should be performed when symptoms of doshas are manifested and located only in the eyes and after the

purification of body. Body should be purified by Panchakarma procedures i.e. Nasya, Virechana, Vasti, Raktamokshana.

Indication	Susrutasamhita ^[12]	Ashtangahridaya ^[13]	Sharangadhara Samhita ^[14]	Bhavaprakasha ^[15]
After the Dosha manifested	+			
Dosha located only in eye	+	+		
After body purification	+	+		
Dosha become Pakva		+	+	+
Slight oedema in eye		+		
Severe itching in eye		+		
Sliminess of eye		+		
In thick eye secretions		+		
Vataja, Pittaja, Kaphaja & Raktaja disorders		+		

In addition to above indications Sharangadharasamhita^[14] and Bhavaprakasha^[16] recommended that the time of Anjana procedure according to the seasons. In afternoon – Hemanta and Sisira In morning – Grishma In evening – Sarath Any time – Vasanta In rainy season Anjana should not be too much of cold or too much of hot. Not only the seasonal recommendations; ancient Acharyas mentioned the time of Anjana application within the day also. Almost all of them recommended Anjana therapy only in the morning, evening and night neither in day time.^[5,17] Preferably in the morning Lekana type of Anjana for Kaphaja diseases, in evening Snehana type for Vataja diseases and in the night Prasadana type for Pittaja diseases.^[18]

Contraindications for Anjana^[19,20,21]

Anjana process is contraindicated in those suffering from fatigue, Udavarta, excessive lacrimation, alcoholic, anger, fear, fever (especially early stage of fever), suppression of natural urges and disorders of head as it causes redness-discomfort-diminish of vision-dischargepain in eyes. Also it should not be applied during the period of less sleep (causes incapability in function), in windy days (damage the visual acuity), on

exposure to dust and smoke (causes redness of eyes), in the presence of eye discharge and Adhimantha-defective vision with pain (produces congestion and pain), just after the Nasya, Vamana and Virechana procedures (produces congestion and pain), in headache (causes disorders in the head), after a head bath, in excessive cold days and before sunrise (due to firmness of Doshas), during indigestion (obstructs the channels-Srotas) and beginning of impulse of Dosha. Especially these contraindications are recommended for Lekhana Anjana. Apart from above contraindications Acharya Bhavamishra advised that it should not be performed in excessively cold-hot-breezy days. If performed it will cause thickness, redness blindness due to an aggravation of respected Doshas and disturbs the sound sleep.^[15]

Dosage of Anjana^[22]

Gutikanjana – According to the potency of raw materials

Tikshna (high in potency) - 1 Harenu

Madhyama (moderate in potency) - 1 1/2 Harenu

Mruudu (mild in potency)- 2 Harenu

Note – Harenu is a Sanskrit technical word translating to “black cardamom”. It is also known by the name

Hareņuka. The botanical name is *Vitexagnus-castu*, and is commonly known in English as “vitex”, “chaste tree”, “chasteberry”.^[23] As per the Sharangadhara Samhitha.^[24]

Rasakriyanjana– According to the quantity of drug
Uttamamatra - 3 Vidanga
Madhyamamatra - 2 Vidanga
Heenamatra - 1 Vidanga Note: The meaning of Vidanga is a seed of *Embeliaribes* which is also known as false black pepper.

Churnanjana – According to the action of drug
Virechana Karma - 2 Shalakas
Mrudu Karma - 3 Shalakas
Snehana Karma - 4 Shalakas

How to Perform Anjana Therapy^[25,26]

Almost all the Acharyas prescribed it should be applied from the inner canthus to the outer canthus and vice-versa on the inner part of the eye lid or on the palpebral conjunctiva by using an Anjana Shalaka or physician's finger. But here they have not mentioned the exact eye lid ie. upper or lower. Hence it can be taken as lower palpebral conjunctiva or cul-de-sac because it provided enough space to application and easy to perform. Susruta and Vagbhata described the procedure in detailed. Physician should be hold the two eye lids separately with his left hand (with the thumb and index finger) and hold the Anjana Shalaka by his right hand. It can be applied several times which provides proper application and increases the bio availability. But it should not be applied excessively or with painful manipulation. Patient is asked to move the eyeballs upwards and rotate slowly which allows the medicine to spread over the eye. Also eyelids be moved slightly by eye massaging this might be helpful for increase absorption by enhancing blood circulation around the eyes. But blinking, squeezing or washing of the lids should not be done till the properly performed Anjana features appeared. Eye wash with water or suitable medicines for the respective disease, Doshas or season is recommended as Paschat Karma. Otherwise remaining medicines may vitiate the Doshas and give rise to the disease and caused itching sensation. To control these Dhumpna (medicinal smoking) can be performed. Pratyjanjana (restorative collyrium) can be applied to control the irritation as well. However Anjana which are used as therapeutics should not be very strong or very weak in potency, very little or very large in quantity, too thin or too thick in consistency, very rough and too hot.^[27]

Samyakyoga, Atiyoga and Heenayoga Features of Anjana^[28]

Acharya Susrutha explained well about the Samyakyoga, Atiyoga and Heenayoga features of Lekhana, Prasadana and Ropana types of Anjana. Features of properly performed Anjana therapy are known as Samyakyoga Lakshana whereas excessively performed features are known as Atiyoga Lakshana. Inadequately performed features are called Heenayoga Lakshana.

•Samyakyoga Lakshana of Lekhana Anjana are non sliminess of eyes, lightness of eyes, non discharging, swift in action, cleanliness of eyes and subsided the complications.

•Atiyoga Lakshana of Lekhana Anjana are deviation of eyes, hardness of eyes, discolouration of eyes, drooping of eyes, roughness of eyes and excessive discharge. All of the above characteristics features cause Vata Dosha vitiation which must be managed Santarpana Karma (Saturation) along with other Vata alleviating measures.

• In inadequately performed Lekhana Anjana Doshas get more aggravated. This should be corrected by performing Dhumpna (medicinal smoking), Nasya (Snuffing) and Anjana therapy.

• In properly performed Prasadana Anjana eyes attain unctuousness-proper colour and strength, cheerfulness of eyes, cleanliness of eyes and it functions perfectly.

• If Prasadana Anjana is applied excessively, eye is affected with some mild disorders. In this case rough drugs should be used to pacifying Dosha.

•Prasadana Anjana applied deficiently becomes useless.

• All the features such as Samyakyoga, Atiyoga and Heenayoga of Ropana Anjana are same as Prasadana Anjana but results moderately. Hence for the better efficacy proper dose of Anjana must be advised.

Materials Used in Anjana Karma

- Anjana shalaka
- Anjana patra
- Drugs are the essential materials for Anjana Karma.

Anjana Shalaka^[29,30,31]

Anjana Shalaka or collyrium probe is a cylindrical rod with 8 Angulas in length which is made of metals, stones or horns of animals and ends should be bluntly pointed like a flower bud.

Anjana Patra^[32] The container used for the storage of Anjana is known as Anjana Patra. The material should be taken according to the medicinal property of the drug. It is further advised the Anjana Shalaka also can be made accordingly.

MATERIALS AND METHOD

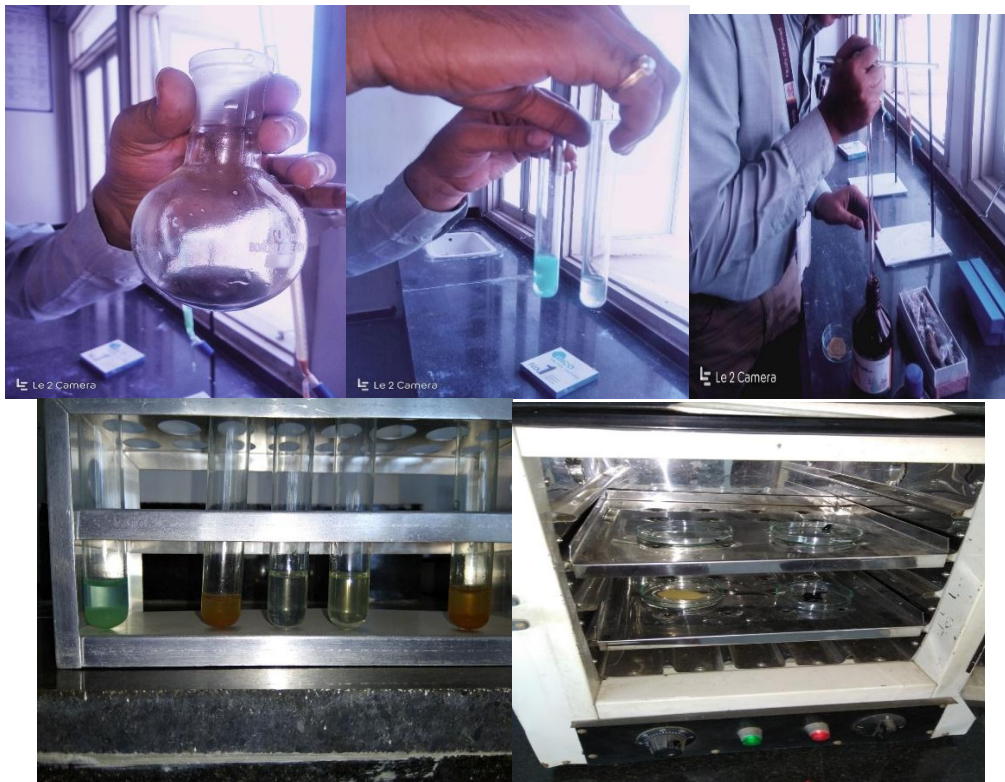
Market available sample Used for Pharmaceutical Analysis of Anjana

Total 3 market available sample were used for physical and chemical analysis. They were remarked as sample A, B & C. chandrodaya varti prepared in pharmacy of Parul institute of Ayurved was taken for the same physical and chemical analysis.

Assessment Criteria for physical analysis: colour, smell, touch & texture.

Assessment criteria for chemical analysis: Loss on drying, Ash value, Assay for copper, Assay for lead, Assay for carbon, Ph. value.

OBSERVATION



a) Physical analysis of samples

NAME OF TEST	Sample A	Sample B	Sample C	CHANDRODAYA VARTI
Colour	Black	Black	Black	Light brown
Smell	Camphor	Camphor	Camphor	-
Touch	Waxy	Waxy	Waxy	Smooth powder
Texture	Creamy	Creamy	Sticky	-

b) Chemical analysis of samples

NAME OF TEST	Sample A	Sample B	Sample C	CHANDRODAYA VARTI
Loss on drying	48%	32%	Tarlike appearance	14%
Ash value	2%	5%	3%	36%
Assay for copper	++	-	Highly reactive	Non-Reactive
Assay for lead	Moderate reactive	Mild reactive	Highly reactive	Non-Reactive
Assay for carbon	Reactive	Reactive	Highly reactive	Non-Reactive
PH value	5.2	5.8	6	7

CONCLUSION

Ayurveda has used and advocated use of herbal collyrium not only for eye beautification and maintenance of eye health, but also to prevent and treat many disorders of eyes. Thus, Anjana has therapeutic importance and has been an integral part and prescription in Ayurvedic ophthalmology. It has been comprehensively used for preventive and curative eye care with immense success. But, now-a-days, Anjana is being highlighted for its beautification purpose only. Commercialization of production of Anjana has led to adulteration in materials used. From above observation, it can be concluded that chandrodaya varti, prepared as per guidelines of Ayurvedic literature is ideal compared to other market available sample of Anjana.

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