

## A PILOT STUDY ON THE EFFICACY OF *CHANDRODAYA VARTI* IN THE MANAGEMENT OF *ARMA*

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### ABSTRACT

*Arma* is very common ophthalmic ailment in temperate environment like India. It has been described under *shuklagta sadhya vyadhi* in *Ayurveda*. It is a disease in which a wing like growth is gradually developing from either *Kaneenika Sandhi* (inner canthus) or *Apangasandhi* (outer canthus) towards the cornea. On the basis of signs and symptoms described by the modern medical science, the disease '*Arma*' can be correlated with conjunctival degenerations including 'Pterygium'. *Arma* is *chedan sadhya vyadhi*. However in the initial stage having thin membrane and curd like colour, can be treated *Lekhana Anjanas*. It is widely used to prevent the speedy growth of the membrane. Likewise, it is also highly beneficial after the surgical treatment for prevention of relapse after surgery. In present trial, 20 patients of *Arma* were selected and administrated *Chandrodaya Varti as Anjanas*. A significant relief was found in various sign and symptoms of *Arma* (pterygium).

**Keywords:** *Arma*, Pterygium, *ChandrodayaVarti*, *Anjanas*

### INTRODUCTION

*Arma*<sup>1</sup> is a disease of *shukla Mandala*. It is a disease in which a wing like growth is gradually developing from either *Kaneenika Sandhi* (inner canthus) or *Apangasandhi* (outer canthus) or from both sides towards the *Krishna Mandala*

(cornea). If this layer invades the *Krishna Mandala* which is transparent in nature it causes disturbance in the vision. It is a common problem encountered in *Shalakya* practice. On the basis of signs and symptoms described in modern

medical science, the disease 'Arma' can be correlated to pterygium. The word 'pterygium' is derived from the greek word 'pterygion' which means a small wing of butterfly. Pterygium is a triangular shaped growth consisting of bulbar conjunctival epithelium and hypertrophied subconjunctival connective tissue occurring medially and laterally in the palpebral fissure and encroaching on to the cornea<sup>2</sup>. Pterygium is more commonly found in people residing tropical and subtropical area. Risk factor includes outdoor work, exposure to UV radiation, dark skin complexion, dry and dusty climate, genetic predisposition etc. Prevalence was higher in factory workers than in office workers, higher in rural areas than in the city and highest in fishermen<sup>3</sup>. Due to the geographic location and climatic conditions pterygium is a common ocular disorder in India.

*Arma* is a type of *Mamsasvridhi* (muscle like growth) and all type of *Mamsavridhi* is *Kaphatmaka*, hence Acharyas have indicated *Lekhana*<sup>4</sup> and *Chedana*<sup>5</sup> as the mainstay of treatment. In modern parlance as well, surgical excision is the definitive treatment, though not devoid of complications and recurrence causing more spread in recurrence stage<sup>6</sup>. In initial stage of *Arma*, where the growth is thin and confined to a small area limited to *Shukla Mandala*, use of *Lekhana Anjana* is indicated whereas when it is thick, fleshy, and extensive and encroaches the *Krishana Mandala* then excision is advised. *Anjana karma* is a process in which specific medicaments are pasted over the marginal conjunctiva in a systematic way from *Kaneenaka Sandhi* to *Apanga* and vice versa. *Lekhana Anjana* is one among 3 types of *anjana* described by *Aacharya Sushruta*<sup>7</sup>. It scrape and expel the *Doshas* from *Netra*, *Vartma*, *Sira*, *Netra Kosha* and *Ashruvaha Srotas* through the

mouth, nose and eye<sup>8</sup>. Considering all above facts, *Chandrodaya Varti*<sup>9</sup>, a formulation described in *Bhaisajya Ratnawali Netra Roga Chikitsa* was selected to assess the effect of non-surgical approach of *Lekhana Karma* by *Lekhana Anjana* when *Mamsasvridhi* reaches upto *Krishana Mandala* so as to come up with a cheap, cost effective non-surgical treatment for *Arma* (Pterygium).

## MATERIALS AND METHODS

### Selection of patients:

The clinical study was organized on the O.P.D. and I.P.D. patients of P.G. department of *Shalakyta Tantra*, NIA, Jaipur. The patients were selected randomly and freely given informed consent was obtained from every subject prior to research participation. A special research proforma was prepared comprising of Ayurvedic and modern parameters essential for diagnosis and assessment of disease.

### Inclusion criteria

- Age between 20 to 60 years old patients.
- Clinically diagnosed patient of *Arma* (Pterygium) covering the conjunctiva and cornea less than the pupillary margin.

### Exclusion criteria

- The patients in which Pterygium covering over the pupillary area.
- Any systemic disease like hypertension, diabetes etc.

### Drug dosage and duration

One *Harenu matra* of *Chandrodaya Varti* with honey was applied locally in the eye once a day (morning) for 1 month.

### Preparation Method:

*Chandrodaya Varti* was prepared as per the following combination and method. *Haritaki, Vacha, Kushtha, Pippali, Maricha, Bhibhitaka majja, Shankha nabhi, Manahshila* were taken in equal quantity, pounded with *Chagakshira*, made in to *Varti* and dried properly in shade and it was preserved in air tight container. At the time of application of *Anjana*, one harenu matra of *Varti* was rubbed in two drops of honey and obtained mixture was applied on the lower eyelid with the help of hygienic index finger.

### Investigations

Laboratory investigation like Hb%, TLC, DLC, ESR and RBS was done only for rule out the diseases. Examination of eye was performed for recording the vision and ruling out any other ocular pathology which includes: Visual acuity, refraction and intraocular pressure.

### Assessment criteria

For assessment of the efficacy of the trial therapy, following subjective and objective parameters were adopted.

### Subjective criteria

1. *Mamsa vridhhi* (fleshy growth of conjunctival tissue)
2. Lacrimation (*netrasrava*)
3. Photophobia (*prakash asahishnuta*),
4. Foreign body sensation (*gharsha*)
5. Blurred vision
6. *Raga* (redness/congestion of conjunctiva)

### Objective criteria

1. Vascularity
2. Length of pterygium mass
3. Width of neck

**Table 1:** Grading of the parameters.

Symptoms	0	1	2	3
<i>Mansavridhhi</i> (fleshy growth of conjunctival tissue )	Absent	Mild muscular growth before limbus	Encroach cornea upto 1mm from limbus	Encroach cornea >1mm
<i>Netrasrava</i> (lacrimation)	Absent	Occasionally	Intermittent	Continuous
<i>Prakash-asahishnuta</i> (photophobia)	Absent	Photophobia on exposure to bright light	Intermittent	Continuous
<i>Garsha</i> (foreign body sensation)	Absent	Occasionally	Intermittent	Continuous
<i>Avildarshan</i> (blurred vision)	Absent	Occasionally	Frequent	Continuous
<i>Raga</i> (Redness )	Absent	Occasionally	Redness in external Environment	Regular
Vascularity	Absent	Mild with unidirectional pattern	Moderate with unidirectional &enlarged vessels	Marked with unidirectional & engorged vessels

**Table 2:** Measurements of the Lesion

Length of whole pterygium mass	Actual size i.e. length of whole pterygium mass and width of neck was measured with help of Castroviejo caliper. Assessment of size: in mm
Width of pterygium mass at the neck	

### Statistical analysis

The scoring of criteria of assessment was analyzed statistically in terms of mean values of B.T. (Before Treatment), A.T. (After treatment), S.D. (Standard Deviation) and S.E. (Standard Error). Various observations made and results obtained were computed statistically using Wilcoxon matched-pairs signed-ranks test on graphpad-Instat software .

## RESULTS AND DISCUSSION

In the present trial total 22 patients were enrolled at the beginning but 2 patients discontinued the trial before its completion and therefore had to be excluded out of the trial. Among 22 patients, male and females were 12 and 10 respectively. In affected eye wise distribution, 8 patients right eye, 6 patients left eye and 8 patients bilateral eye was affected. Most of the patients had the disease with 0-1 year duration with gradual onset and progressive course of illness. Symptoms wise distribution showed that *Mamsa Vridhhi Lakshana* and vascularity was

seen in all patients. In present study, it was seen that all the patients (100%) were having grade-I Pterygium. Results of 20 patients showed that symptomatic improvement was considerable in all the parameters of *Arma*. As per table no. 3 and 4, *Chandrodaya Varti* application showed 70% relief in foreign body sensation, 64.98% in lacrimation, 73.84% in *Raga*, 70.02% in photophobia, 75.08% in blurred vision, and 14.97% in *Mamsa Vridhhi*. In objective parameter i.e.in vascularity, *Chandrodaya Varti* provided 73.6% relief, 17.88% in width and 15.11% in length of pterygium mass.

*Arma* is (*Mamsa Dhatu Dusta*) *Kapha* predominant *Tridoshaja Vyadhi*. Looking into the pathogenesis of *Arma* it becomes clear that drugs having *Kaphanashaka* and *Lekhana* quality can effectively cure this disease. *Chandrodaya varti* constitutes 9 ingredients, in which 6 herbal, 1 mineral, 1 sea and 1 animal origin which is *Maricha*, *Pippali*, *Hareetaki Bhibhitaka*, *Vacha*, *Kushtha*, *Manahshila*, and *Shankha Nabhi*.

**Table 4:** Summary of Rasa, Guna, Virya, Vipaka, of Chandrodaya Varti

S.No	Name of drug	Rasa						Guna						Virya		Vipaka	
		M	A	L	K	T	Ks	R	S	L	G	Pi	T	U	S	M	K
1	<i>Marich</i>				+					+			+	+			+
2	<i>Pippali</i>				+				+	+				+		+	
3	<i>Hareetaki</i>	+	+		+	+	+	+		+				+		+	
4	<i>Vacha</i>				+	+				+			+	+			+
5	<i>Kushtha</i>	+			+	+		+		+			+	+			+
6	<i>Vibheetaki</i>						+	+		+				+		+	
7	<i>Shankha Nabhi</i>				+		+			+					+	+	
8	<i>Manahshila</i>				+	+				+	+			+			+
9	<i>Chagakshira</i>	+								+		+	+		+	+	

Most of the ingredients have *katu*, *tikta*, *kashaya rasa*, *Laghu*, *Ruksha*, *Tikshana Guna*, *Ushna Virya* and *Lekhaniya* properties which are responsible to give best effect in *Lekhana Karma*.

### 1. Mode of action as per Rasa:

**Katu Rasa:** The *Katu Rasa* is formed by *Vayu* and *Agni Mahabhoota*, which having properties like *Ruksha*, *Ushna*, *Laghu*, and *Sookshma*

Guna which are beneficial in *kapha* predominant *Doshas*. It also has *Mamsa Vilekhan* property-

**Tikta Rasa:** It possess *Shodhana*, **Lekhana**, properties same as *Katu Rasa*.

**2. Mode of action as per Guna:**

Maximum drugs in this formulation are having *Ruksha*, *Laghu*, *Tikshna Guna*.

*Ruksha Guna* possesses *Lekhana* property. It also encounters the *Kapha Dosha*.

*Laghu Guna* has **Lekhana** and *Ropana* properties.

*Tikshna Guna* is *Shighrakaari* which means it starts action very quickly and will encounter *Kapha Dosha*.

**3. Mode of action as per Virya:**

*Ushna Virya* also has *Kaphashamaka* and *Vatahara* property.

**4. Mode of action as per Vipaka:**

Maximum drugs have *Katu Vipaka* and according to our *Acharyas Katu Vipaka* work same as

that of *Katu Rasa anjana*. Suitable time for *LekhanaAnjana karma* is *Poorvahna*, mainly used in *Kaphaja Vyadhi*. This usage of *Lekhana* can gradually reduce the thickness of the membrane of *Pterygium* and preventing the growth of *Arma* and also reduces the size.

*Arma* is (*Mamsa Dhatu Dusta*) *Kapha* predominant *Tridoshaja Vyadhi*. Looking into the pathogenesis of *Arma* it become clear that the *Ayurvedic* treatment having *Kaphanashaka* properties and *Lekhana* quality can effectively cure this disease. Moreover, *Anjana* require lesser quantity of drug. It is having good absorption quality and having long residual time in the organs which gives higher bioavailability of the medicinal drug. Thus usage of *Lekhana Anjana* with *Chandrodaya varti* can gradually reduce the thickness of the membrane of *Pterygium* and preventing the growth of *Arma* and also reduces the size.

**Table 3:** Effect on subjective parameters (Wilcoxon matched pairs signed ranks test)

Variable	Mean		Mean Diff.	% Relief	SD	SE±	W	P	S
	BT	AT							
<i>Mamsa vriddhi</i>	1.67	1.42	0.25	14.97	0.44	0.833	28	<0.015	S
Lacrimation	0.714	0.25	0.464	64.98	0.507	0.095	91	<0.0002	ES
Photophobia	0.357	0.107	0.25	70.02	0.441	0.083	28	0.0156	S
FBS	0.5	0.142	0.357	70	0.488	0.092	55	<0.002	VS
Blurred vision	0.285	0.071	0.214	75.08	0.417	0.078	21	0.031	S
<i>Raga</i>	1.393	0.428	0.964	73.84	0.331	0.062	351	<0.0001	ES

**Table 4:** Effect on objective parameters

Variable	Mean		Mean Diff.	% Relief	SD	SE±	W	P	S
	BT	AT							
Length	6.143	5.214	0.928	15.11	1.052	0.198	4.673	<0.0001	ES
Width	2.393	1.964	0.428	17.88	0.504	0.0952	4.5	0.0001	ES
Vascularity	1.25	0.321	0.928	73.6	0.378	0.071	325	<0.0001	ES

## CONCLUSION

In the present trial, *Chandrodaya varti* was found to be effective in reducing signs and symptoms of *Arma* and statistically significant results were seen. No adverse and toxic effects were observed during and after the completion of trial. Modern ophthalmologist does not treat the pterygium in initial stage. But in *Ayurveda*, *Arma* which is in initial stage can be treated with *Netra Kriyakalpa* like *Anjana* to prevent the speedy growth of the membrane. Likewise, it is highly beneficial after the surgical treatment for prevention of relapse after surgery. Therefore *Chandrodaya Varti* can be used safely and effectively in the treatment of *Arma* (pterygium).

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