

ROLE OF ANJANA AND ASHCHYOTANA IN POST SURGICAL RECURRENCE OF ARMA (PTERYGIUM)

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ABSTRACT

Arma is a disease in which a *Mansvridhi* (fleshy growth) developed from the *Kaneenaka Sandhi* (Inner canthus) or *Apangasandhi* (outer canthus) towards the *Krishnamandala* (cornea). The critical analysis of symptom of *Arma* is suggestive of resemblance with pterygium. Pterygium is a wing shaped fibrovascular growth of the conjunctiva, commonly encroaching onto the cornea and caused by prolonged effect of environmental factors such as exposure to sun (UV rays), dry heat, high wind and abundance of dust. Surgical excision is only treatment of choice for Pterygium. For excision of Pterygium / *Arma* mostly bare sclera surgical technique is accepted having high rate of recurrence. Patient undergoes repeated surgeries while topical medication only can temporarily allay the symptoms, disease may produce cosmetic problem significant astigmatism and visual impairment or blindness. *Yavaksharadi Anjana* and *Karanjadi Ashchyotana* were evaluated with standard statistical test in prevention of recurrence of *Arma* /Pterygium after *Arma Chhedana*. The result of this clinical trial which was conducted for three months on 20 clinically diagnosed patients of *Arma* /Pterygium, randomly selected from OPD/IPD of Rishikul Campus, Haridwar. Highly Significant effect of trail were found in subjective symptoms like Raga (episode of redness), watering and significant effect on *Gharsha* (Foreign body sensation).The treatment also beneficial in prevention of recurrence in length and thickness of fleshy growth and congestion on objective parameters.

Keywords: Pterygium, *Arma*, *Yavaksharadi Anjana*, *Karanjadi ashchyotana*.

INTRODUCTION

Acharya Sushruta in *shasthoadhyaya* of *Uttartantra* explains *Akadasha Shuklagata Netra vikara*. Among them *Arma* is one of the *Chedya sadhya Netra vikar*. *Arma* is a disease in which a *Mansvridhi* (fleshy growth) developed from the *Kaneenaka Sandhi* (Inner canthus) or *Apangasandhi* (outer canthus) towards the *Krishnamandala*¹ (cornea). *Arma* can be correlated with Pterygium in contemporary science, as both these conditions are diagnosed based on the character and

type of growth. Pterygium is a fibrovascular growth of the conjunctiva, commonly encroaching onto the cornea. It is usually triangular or wing shaped. It not only affects beautiful outlook of the patient, but also affects refractive astigmatism, and is a potentially blinding disease in the advanced stage due to invasion of the visual axis, which can have a significant impact on vision, and required surgery for visual rehabilitation². *Arma*/ Pterygium are caused by prolonged effect of

environmental factors such as exposure to sun (uv rays), dry heat, high wind and abundance of dust³. The epidemiological studies around the world have shown that the prevalence rates range from 0.3% to 37.46%^{4,5}. In a 30-year (1971 to 2001) survey by the Cornea and External Disease Clinic of the Department of Ophthalmology and Visual Sciences, University of the Philippines–Philippine General Hospital (UP–PGH), Pterygium ranked 8 among the 10 leading conditions seen in clinic and 3rd among the most common noninfectious conditions⁶. There is worldwide distribution of Pterygium, but they are more common in warm and dry climates⁷. The common factor appears to be latitude, since Pterygium occurs primarily within the peri-equatorial “Pterygium belt,” within latitudes 37° north and south of the equator. Pterygium is commonly seen in India, which is a part of the “Pterygium belt” which was described by Cameron⁸. The prevalence of Pterygium in rural Central India was about 13% among adult Indians aged 30+ years⁹. In *ayurvedic* text *Arma* describe in detail which also show gravity of disease. Treatment of *Arma* in early stages is *Lekhana Anjana* but when it encroaches on *Krishnamandala* then it is removed by *Chedana Karma*¹⁰. The management of Pterygium in early stage is through application of topical lubricants, anti-inflammatory & corticosteroids. All these are effective for a short period and surgery is the only line of treatment according to modern science¹¹. Recurrence rate is very high (2.1%- 87%)¹² & ¹³ despite numerous possible treatment option for prevention of recurrence of Pterygium. For excision of Pterygium / *Arma* mostly bare sclera surgical technique is accepted having high rate of recurrence¹³. Other surgeries used for excision of pterygium having many complications like.

1. Grafting surgical procedures are very expensive.
2. Mitomycin C eye drops can increase risk of scleral calcification, scleral oedema, sudden onset of cataract, severe secondary glaucoma.
3. Beta radiation produced high rate of scleral melt ulceration¹⁴.

Arma is considered as a *Chedana Sadhya Vyadhi*. *Sushruta* has explained a special surgical procedure for *Arma Chedana*. To avoid disease recurrence *Acharya*

described *Lekhana Anjana* along with *Ropana Ashchyotana* after *Arma Chedana*¹⁵.

Considering the above factors, in this present study an effort has been made to study the conceptual resemblance between *Arma* and Pterygium and to evaluate the Role of *Anjana* and *Ashchyotana* in post surgical recurrence of *Arma* (Pterygium).

Aim and Objectives-

- To study the conceptual resemblance between *Arma* & Pterygium.
- To evaluate the role of *Anjana* and *Ashchyotana* in post surgical recurrence of *Arma* (Pterygium).
- To see the side effects /toxic effects of drug.

Study Design

- To fulfill the above aims and objectives, simple randomized open clinical trial was designed put in single group.
- Clinical study was conducted to see the efficacy of *Yavaksharadi Anjana* and *Karanjadi Ashchyotana* in post surgical recurrence of *Arma* (Pterygium).

Materials and methods-

Selection of patients- This Clinical study was conducted on Patients attending the Netra Roga OPD and IPD of PG Department of *Shalaky Tantra*, Rishikul Campus, Haridwar Uttarakhand Ayurveda University (Dehradun). The patients were selected irrespective of caste, creed, race or religion, in the age group of 20-55 years.

Criteria for Diagnosis-

Patients were diagnosed on the basis of sign and symptoms of pterygium and those mentioned in *Ayurvedic* classics with reference to *Arma* such as

- *Mansvridhi* (Fleshy growth of subconjunctival tissue)
- *Gharsha* (Foreign body sensation)
- *Rag* (Episode of Redness)
- Watering
- Triangular fold of conjunctiva encroaching on the cornea in the area of palpebral aperture.
- Congestion
- Stoker line (Linear epithelial iron deposition)
- Fuchs islets (whitish flecks)

Inclusion criteria:

- Patients were age group of 20-55 years.
- Progressive type of Pterygium
- Primary Pterygium

Exclusion criteria:

- Regressive and complicated Pterygium
- Pseudopterygium.
- Pterygium /Arma covering pupillary area.
- Patient contraindicated for *Anjana* therapy like acute infection.
- Patient with known case of glaucoma, cataract, uveitis, retinopathy, conjunctival cystic degeneration, neoplastic changes like epithelioma or malignant melanoma etc.

Investigational criteria-

For the purpose of assessing the general condition of patient and to exclude other pathologies, following investigations were performed in all selected patients

- a) Complete blood count
- b) Blood sugar (Fasting, PP)
- c) Erythrocyte sedimentation rate
- d) Clotting time , Bleeding time

After arriving at the diagnosis, the clinical proforma was filled up, which incorporated all signs and symptoms based on both Ayurvedic as well as modern descriptions. A detailed clinical history was taken initially and a complete physical and ocular examination of each patient was carried out on the basis of proforma.

Drug- Yavksharadi Anjana – Firstly *Yavkshara* was prepared as mentioned in classical text and *Shunthi*, *Marich*, *Pippali Churna* were prepared by classical method of *Ghansatva*. Then equal amount of *Yavkshara* and *Saindhav Lavana* and dry *Ghan satva* powder of *Shunthi*, *Marich*, *Pippali* were taken and mixed well. At the end Honey was taken as base ingredient and then whole powder was mixed in particular ratio 30:70 .

The ***Karanjadi Ashchyotana*** was prepared by classical method of *Ghanasatva*. For the preparation of

Ghanasatva all the herbal drugs i.e. *Karanja beej*, *Amlaki*, *Mulethi* were taken in equal amount. Then 30 gm of the dry powder of *Ghana satva* was dipped in 100 ml of rosewater for 12 hours and then mixed properly. And diluted portion of this was again allowed to settle down for 12 hours and then filtered. This filtered portion was filled into eye drop bottles. Recurrence of *Arma* best managed with *Yavksharadi Anjana* having *Ushna* and *Teekshna* properties. It enhances the penetration of drugs, resulting into delivery of drug at greater level. It also having *Kapha Vat Shamka*, *Lekhana Chhedana*, *Chakshusya*, *Rasayana* properties which help in removal of vitiated *Kaphadi Dosh*, *Dusta Mansa* which are responsible for development of *Arma* and it Scarpes the remaining fibrovascular growth and maintain loss of epithelial cell¹⁶. *Karanjadi Ashchyotana* drug having *Krimijit*, *Kandughn*, *Vranshothhar*, *VranShodhaka*, *Vedanasthapaka*, *Dahashamak*, *Chakshusya* and *tridosha shamak* properties., Due to these properties elimination of *doshas* through *Aushadha prabhava* and relief in the symptom like pain, inflammation¹⁷

Method of study-

In total, 20 patients were selected for present study who fulfilled the criteria of diagnosis and consented for study put in single group.

Application of *Yavksharadi Anjana* stat on excised *Arma* area.

From first post operative day - *Karanjadi Ashchyotana* was given for 7 days.

Duration of the Trial - 7 days.

Follow up- 3 months at regular interval of 1 month.

Criteria for Assessment

In this study, the results were assessed in relation to the clinical signs and symptoms (on the basis of grading and scoring system) and overall improvement.

Clinical Assessment

Subjective and objective parameters were assessed by adopting suitable scoring method

Table 1:

Subjective Parameters	
1.	Raga (Episode of redness) 0 Absent 1 Occasionally 2 Redness during external environment 3 Regular in both external and internal environment
2.	<i>Gharsha</i> (Foreign body sensation) 0 Absent 1 Occasionally on exposure of aggravating factors 2 Frequently present on exposure & occasionally present in absence of aggravating factors. 3 Continuous present irrespective of exposure
3.	Watering- 0 No watering 1 Occasional 2 Frequent 3 Excessive watering

Table 2:

Objective Parameters	
1.	<i>Mansvridhi</i> (Fleshy growth of conjunctival tissue) 1) Length- 0 No corneal invasion 1 Corneal invasion 2 mm 2 Corneal invasion 2-4 mm 3 Corneal invasion >4 mm
2.	<i>Mansvridhi</i> (Fleshy growth of conjunctival tissue) 2) Thickness- 0 Negligible growth 1 Clearly visible episcleral vessel under the body of pterygium (Atrophic) 2 Partially visible episcleral vessel under the body of pterygium (intermediate) 3 totally obscured episcleral vessels underlying the body of pterygium (fleshy)
3.	Congestion 0 Absent. 1 Mild with unidirectional pattern. 2 Moderate with unidirectional and enlarged vessels. 3 Marked with unidirectional and engorged vessels

Observations-

Out of 20 patients, demographic data showed that maximum (50%) no of patients were in the 31-40 year age group, 55% were female and 90% patients were Hindu by religion. Maximum patients were married, vegetarians and were addicted for smoking. Maximum primary educated, lower class, urban population was

noticed. Maximum patients were labour by occupation, medium appetite, regular bowel habit and sound sleep. Chronicity wise Maximum 45% patients were in the 0-1 year age group and 45% patients were *Vata-Pitta Prakruti*. The incidence of clinical sign and symptoms are presented in Bar Diagram 1-2

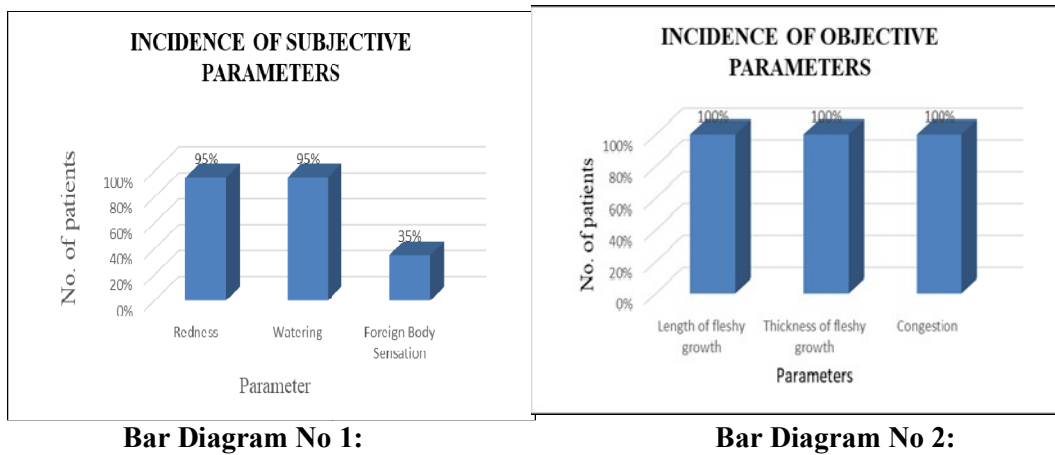


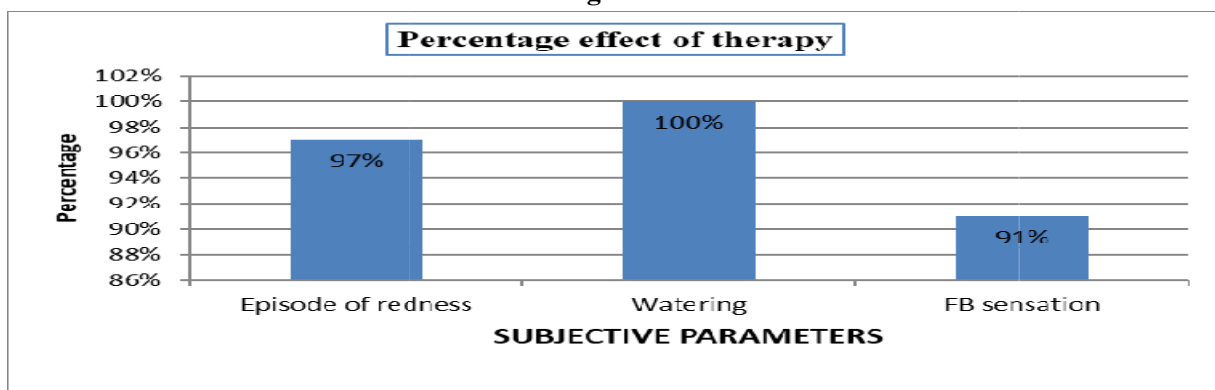
Table 3: Effect of therapy–

Yavksharadi Anjana was applied on excised *Arma* area and *Karanjadi Ashchyotana* was given following results were observed.

(Wilcoxon signed rank test)

Parameter	BT		AT		z-value	p-value	% Effect	Result
	Mean	SD	Mean	SD				
<i>Raga</i> (Episode of redness)	1.85	0.59	0.05	0.22	-4.06	<0.001	97.30	HS
<i>Gharsha</i> (Foreign body sensation)	0.45	0.76	0.00	0.00	-2.53	0.011	100.00	S
Watering	1.15	0.49	0.10	0.45	-4.00	<0.001	91.30	HS
<i>Mansvridhi</i> (BT -Total fleshy Length of Pterygium) (AT- Post surgical recurrence in length of fleshy growth)	2.50	0.51	0.10	0.31	-4.01	<0.001	96.00	HS
<i>Mansvridhi</i> (BT -Total fleshy thickness of Pterygium) (AT- Post surgical recurrence in thickness of fleshy growth)	1.60	0.60	0.00	0.00	-4.02	<0.001	100.00	HS
Congestion	1.85	0.49	0.20	0.52	-3.95	<0.001	89.19	HS

Bar Diagram No.3-4



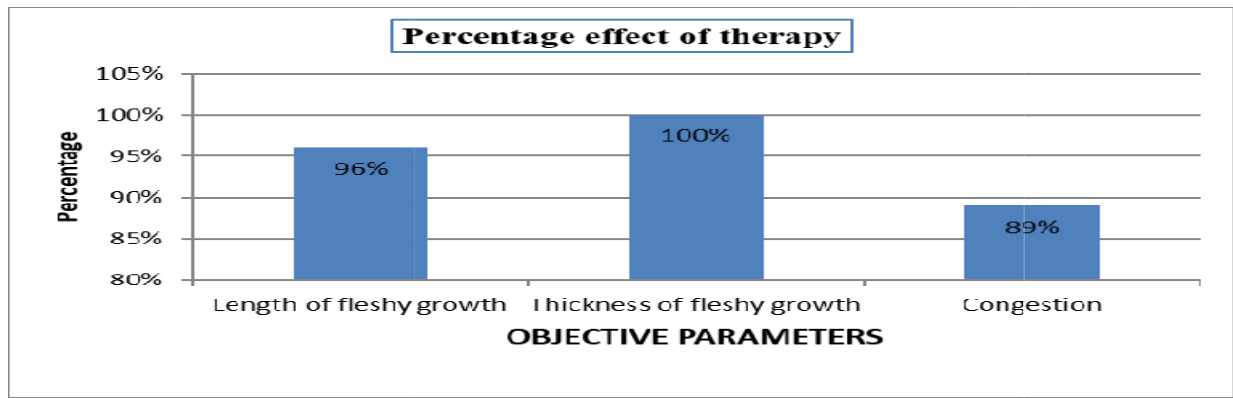
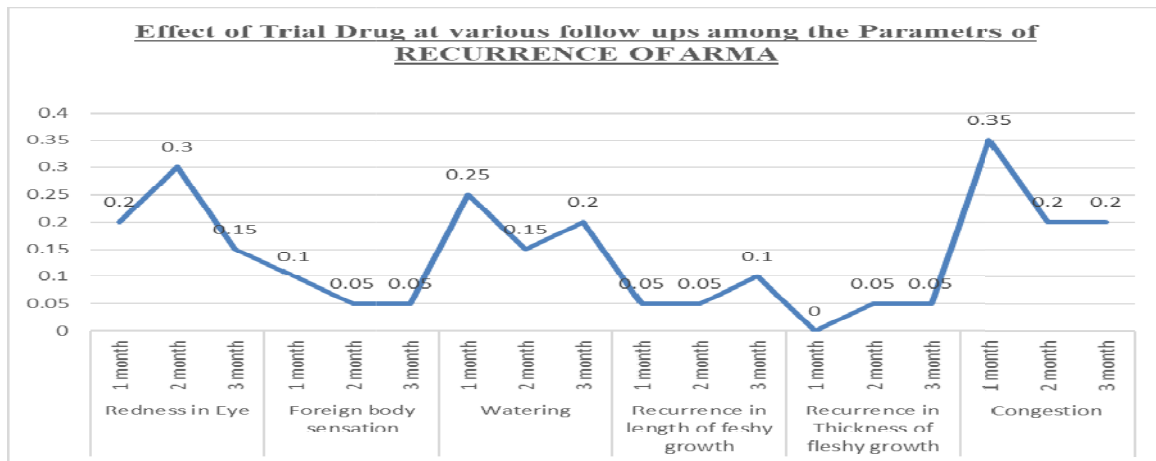


Table 4: Efficacy study during follow-up

Parameter	Mean	SD	comparison with BT		Result
			z-value	p-value	
<i>Raga</i> (Episode of Redness)					
1 month	0.20	0.52	-4.00	<0.001	HS
2 month	0.30	0.66	-3.88	<0.001	HS
3 month	0.15	0.67	-3.98	<0.001	HS
<i>Gharsha</i> (Foreign body sensation)					
1 month	0.10	0.31	-2.11	0.035	S
2 month	0.05	0.22	-2.53	0.011	S
3 month	0.05	0.22	-2.53	0.011	S
Watering					
1 month	0.25	0.55	-3.82	<0.001	HS
2 month	0.15	0.49	-3.88	<0.001	HS
3 month	0.20	0.52	-3.76	<0.001	HS
<i>Mansvridhi</i> (Recurrence in Length of fleshy growth)					
1 month	0.05	0.22	-4.02	<0.001	HS
2 month	0.05	0.22	-4.02	<0.001	HS
3 month	0.10	0.45	-3.94	<0.001	HS
<i>Mansvridhi</i> (Recurrence in Thickness of fleshy growth)					
1 month	0.00	0.00	-4.02	<0.001	HS
2 month	0.05	0.22	-4.04	<0.001	HS
3 month	0.05	0.22	-4.04	<0.001	HS
Congestion					
1 month	0.35	0.67	-3.75	<0.001	HS
2 month	0.20	0.52	-3.95	<0.001	HS
3 month	0.20	0.52	-3.95	<0.001	HS

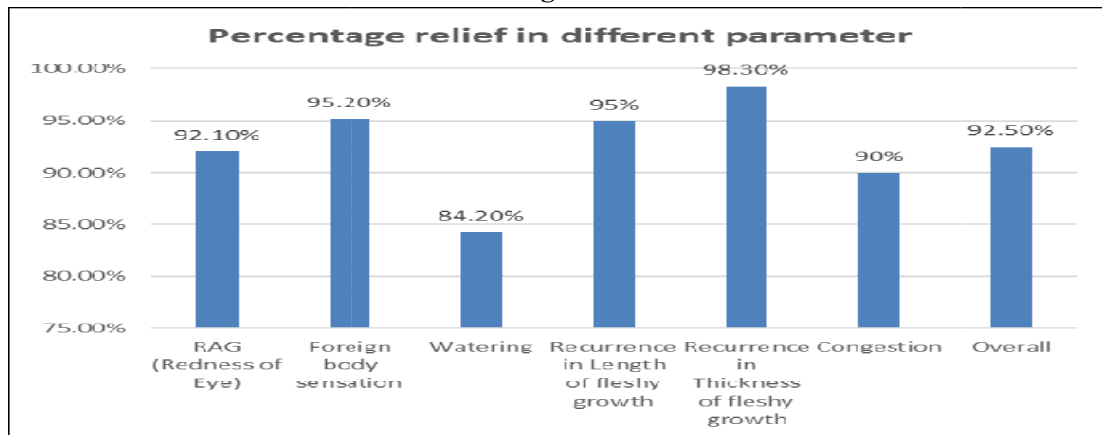


Percentage relief in different parameter-

Table 5:

Parameter	% Relief
Raga (Redness of Eye)	92.1
Gharsha (Foreign body sensation)	95.2
Watering	84.2
Mansvridhi (Recurrence in Length of fleshy growth)	95.0
Mansvridhi (Recurrence in Thickness of fleshy growth)	98.3
Congestion	90.0
Overall	92.5

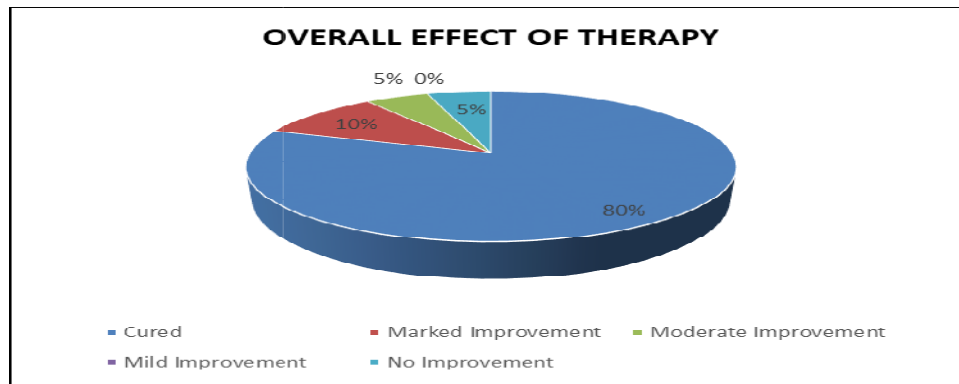
Bar Diagram No.5



OVERALL EFFECT OF THERAPY –

Table 6:

Overall Effect	20 Patients (n=20 eyes)	
	Frequency	Percentage
Cured	16	80%
Marked Improvement	02	10%
Moderate Improvement	01	05%
Mild Improvement	0	0.0
No Improvement	1	05%



DISCUSSION

Statistically highly significant relief ($p < 0.001$) was found in *Raga* (episode of redness) (97.30% effect and 92.1% relief), watering (91.30 % effect and 84.2 % relief), *Mansvridhi* (Length of fleshy growth) (96% effect and 95% relief), *Mansvridhi* (Thickness of fleshy growth) (100 % effect and 98.3 % relief) Congestion (89.19% effect and 90 % relief). Statistically significant relief ($p < 0.01$) was found in *Gharsha* (Foreign body sensation) (100% effect and 95.2 % relief). During follow up period at 1 month, 2 months, 3 months statistically highly significant result were found in *Raga* (Episode of redness), Watering, *Mansvridhi* (Recurrence in length and thickness of fleshy growth), congestion only in *Gharsha* significant result was observed. *Arma* occurs in *Kaninaka* or *Apanga Sandhi* of eye. Pterygium is also present in temporal or nasal side of interpalpebral aperture. Both are termed as fleshy growths encroaching the cornea and diseases on progression can obscure the vision by covering the cornea and then pupil simultaneously. The ultimate treatment of both the diseases is surgery and having same complication recurrence after surgery. The constituents of *Yavaksharadi Anjana* possess 2 types of properties. One type is *Ushna, Ruksha, Tikshna, Laghu, Katu, Kashaya* and *Tikta* properties and other type is *Sheeta, Madhura* and *Snigdha, Guru* in nature. The first type of properties seem to cause lysis and scrapping of the vitiated *Dhatus* and the second type of properties, seem to protect the healthy *Dhatus* and nourish them. So, the drug *Yavaksharadi Anjana* is specific in itself possessing both *Lekhana* and *Shamaka* properties. Ingredients of drug *Yavaksharadi Anjana* are having *Karmas* (actions)

like, *Lekhana Bhedana, Chhedana, Shothahara, Srotoshodhaka, Rasayana*. Due to above mentioned properties drug may help in the management of inflammation, infection, Scrapes the remaining fibrovascular growth, maintain and loss of epithelial cell. So the drug *Yavaksharadi Anjana* prevents recurrence of disease after surgery. *Karanjadi Ashchyotana* act as a *Ropana Drug* and *Ropana Dravya* provide strength to *Drishti* and can clean the Srotas by its medicinal properties. Maximum constituents having *Madhur Rasa, Guru, Laghu, Teekshan Guna, Sheeta Virya, Madura Vipaka* and *Tridosha Shamaka* property and *Karmas* (actions) like, *Krimijit, Kandughn, Vranshothhar, Chakshushya, Rasayana, Vran Shodhaka, Vedanasthapaka, Dahashamak*. So, the drug *Karanjadi Ashchyotana* act as anti-inflammatory, analgesic, antibacterial, antiviral, anti-oxidant and immunomodulator. In overall therapy 80 % patients were cured, 10 % patients were Marked improved, 05 % patient moderate improved, none patient was mild improved remaining 5% was unchanged.

CONCLUSIONS

Based upon the detailed conceptual description, it can be concluded that *Arma* and Pterygium, both these entities are similar. “*Yavaksharadi Anjana*” and “*Karanjadi Ashchyotana*” showed statistically highly significant results on subjective parameters i.e. *Raga* (Episode of redness) Watering and statistically significant result was observed in *Gharsha* (foreign body sensation). Selected drug also showed statistically highly significant results on objective parameters i.e. *Mansavridhi* (recurrence in length and thickness of fleshy growth), Congestion. During follow up period

selected drug showed statistically highly significant results in all subjective and objective parameters and only in *Gharsha* (Foreign body sensation) it showed statistically significant result. “*Yavaksharadi Anjana*” and *Karanjadi Ashchyotana* showed no adverse effect/toxic effect.

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