

## A CLINICAL STUDY TO EVALUATE THE EFFICACY OF KARPURADI KUZHAMPU ANJANA AND JALAUKAVACHARANA IN THE MANAGEMENT OF PRAKLINNAVARTMA (BLEPHARITIS).

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### ABSTRACT

Blepharitis is a sub – acute or chronic disease involving the lid margins caused by aetiology like constitutional factors, dust, smoke, toxins, allergy etc. Although treatment is available in modern science but complete remission is not possible due to poor known pathophysiology of the disease. Therefore it has high recurrence and serious sequel like corneal ulcer, dry eye etc. *Praklinnavartma* is a *vartmagataroga* mentioned in *Ayurvedic* text has close similarity to the blepharitis. Hence an effort has been made to find out better option of treatment to reduce the recurrence of the disease. For treatment *Jalaukavacharana* for purification and *Anjana* for local application had been selected. Total 31 patients were registered in the study and randomly divided into two groups JAN&AN. Group JAN patients were treated with *Jalaukavacharana* and *Karpuradi Kuzhampu anjana* and Group AN with *Karpuradi Kuzhampu anjana* only. The results of study in both the groups were found encouraging but recurrence rate was lower in JAN group found after 10-15 days of treatment during follow up observation.

**Key Words:** Blepharitis, Praklinnavartma, Constitutional factors, Jalaukavacharana, KarpuradiKuzhampu Anjana

### INTRODUCTION

Like Dry eye disease 15 year ago Blepharitis is today a poorly defined condition.<sup>1</sup> The poor correlation between symptoms and signs, the uncertain etiology and mechanisms of the disease process, conspire to make management difficult.<sup>2</sup> Therefore it has high and frequent recurrence. So to find out the better management and to establish the correlation of this disease with disease having maximum similarity i.e. *Praklinnavartama* in *Ayurvedic* ophthalmology, the study had been carried out. Blepharitis<sup>3</sup> is a sub acute or chronic disease of lid margin, caused by general seborrhoea and staphylococcus aureus, but other pathogenic microorganisms or secondary infections

may increase the severity of the disease. The disease is mainly classified anatomically<sup>4</sup> into two types like anterior blepharitis (seborrhoeic and staphylococcus also called ulcerative blepharitis) and posterior blepharitis (meibomianitis). The signs and symptoms<sup>5</sup> like scales at lid margin, around the lashes, itching, madarosis, F. B. sensation, burning sensation, etc. are the chief complains in anterior type, where as posterior blepharitis is characterised by abnormal meibomian gland secretion, caused by meibomian gland dysfunction (MGD)<sup>6</sup>. The exact aetiology is still not clear. Dust, smoke, Refractive errors, toxin, allergy, constitutional

factors etc are the predisposing factors<sup>7</sup> of the disease.

Blepharitis<sup>8</sup> may undergo spontaneous resolution but never gets cured or may progress into ptylosis, madarosis, permanent reddening of the lid margin and cicatrisation of the lid margin which can cause trichiasis or entropion leading to abrasion on the cornea by eyelashes frequently resulting into corneal ulceration, followed by scarring and loss of vision in long standing untreated cases.

*Praklinnavartma* is one among 21 types of diseases of *Vartma*. It is characterized by pre-

dominance of *Klinnata* (congestion) due to *Kapha Dosh*<sup>9</sup>, painless or mild pain with swollen lid externally, discharge, itching and pricking sensation. It is said to be *Sadhya*<sup>10</sup> *Vyadhi* and treatment is *Ashastrakritya*<sup>11</sup> (by medicine).

The disease *Praklinnavartma* can be correlated with blepharitis on the basis of their origin, site, pathogenesis, signs and symptoms viz:

Table no.-1 Comparison of praklinnavartma vs blepharitis:

	<b>Praklinnavartma</b>	<b>Blepharitis</b>
<b>Definition</b>	<i>Klinnata</i>	Inflammation of Eye lid margin
<b>Etiology</b>	<i>KaphaKopa, Achakshushyadravya, Rajo – DhumaSevana, Durekshana Sukshmanirikshana etc.</i>	Constitutional Factors – Starchy food, DM etc. Dust, Smoke, Refractive Errors.
<b>Pathogenesis</b>	<i>KaphaKopa RaktaDushti MamsaDushti</i>	Involvement of eyelashes follicle and gland of zeis and molls, Meibomian gland Dysfunction Inflammation of lid margin
<b>Symptoms</b>	<i>Aruja/MandaRuja Srava Kandu Nistoda</i>	No pain/ Pain (ulcerative) Mucoid discharge Itching F. B. Sensation
<b>Signs</b>	<i>AntahKlinnam BahyaShunam</i>	Palpebral Congestion Lid edema Ptylosis
<b>Treatment</b>	<i>NidanaParivarjana, KaphaharaChikitsa- LekhanaAnjana Seka, Ashchyotana etc.</i>	Hygiene Antibiotics, Anti- inflammatory, Steroids

• In *Ayurvedic* classics, *Acharyas* have explained many local therapies<sup>12</sup> to treat *Praklinnavartama* - Blepharitis e.g. *LekhanaAnjana, Ashchyotana, Raktamokshana* Etc. *Praklinnavartma* is a *KaphaPradhaja VartmaRoga* in which *Rakta* and *MamsaDhatu* of lid are vitiated and the disease is *Chirakariin* manifestation. *AcharyaSushruta* has given great emphasis to ***Jalaukavacharana*** in the therapy for *RaktaPradoshajaVyadh* (Blood

originated disease), *TridoshaPrakopajanya* (vitiating all three body humor) and *Chirakari* (chronic) diseases.<sup>13</sup> For excess vitiated *Dosha, Shodhana* is must.<sup>14</sup> Among the *Anushastras* (Para surgical measures) *Vagbhatta* considers *Jalauka* (leeches) as the best at all places of the body for all the persons.

• Hence, it was decided to evaluate the effect of *Raktamokshana* by *Jalauka* as men-

tioned in the treatment of *Praklinnavartma* in *SushrutaSamhita* for Shodhana and effect of *Anjana* a herbomineral compound drug i.e. *KarpuradiKuzhampu Rasakriya Anjana* in drop form as it is easy to dispense. It is mentioned in *Chikitsa Manjari* in *NetraRogadhikara*. The content drugs of *KarpuradiKuzhampu Raskriya Anjana - Pippali, Maricha, Karpura, Pitika, Darvi, Samudraphena, Shankha, Anjana, Sphatika, Gairika, Tapyas (Swarnamakshika), Tuttha, Varatika, Saindhava, Himambu (Rose water), Madhu* having *Tridoshaghna* properties, *Kapha-Pittahara, Lekhana, Krimighna, Twakadoshahara, Ropana* and *Chakshushya* properties which can interfere directly with the *Kapha* predominant *Praklinnavartma* and dissolve the pathogenic condition by the *Tridoshahara*, specially *Pitta-Kaphahara, Shothahara, Krimighna, Lekhana Karma* and *Chakshushya Karma*. Hence the patients may get relief from the sign and symptoms of the *Praklinnavartma - Blepharitis*.

#### AIMS AND OBJECTIVES

1. To study the disease *praklinnavartma* and blepharitis to establish the correlation between them.
2. To evaluate the efficacy of *Jalaukaavacharana* [Leech Therapy] followed by *Karpuradikuzhampu Anjana*.
3. To evaluate the efficacy of *Karpuradikuzhampu Anjana* in the management of Blepharitis.

#### MATERIALS AND METHODS

**Selection of patients** - Patients presenting with clinical features of *Praklinnavartma - Blepharitis* were selected from the OPD & IPD of Dept. of Shalakyas; I.P.G.T. & R.A.; GAU Jamnagar.

**Trial drug** – The *KarpuradiKuzhampu Anjana* was manufactured at *Arya Vaidya Sala Kottakal*.

#### CRITERIA OF INCLUSION:

The patients presenting signs and symptoms of blepharitis were included in the study irrespective of Age, Sex, and Religion etc.

#### CRITERIA OF EXCLUSION:

1. Patients having diseases like corneal ulcer, ectropion, entropion, trichiasis, dacryocystitis, dry eye, lagophthalmos, acute or chronic infective conjunctivitis etc.

2. Patients suffering from specific eyelid disorders like tumor, carcinoma etc. or systemic diseases like diabetes and bleeding disorders.

#### Grouping of patients

Patients fulfilling the inclusion criteria were selected randomly and were divided into two groups – Group JAN and Group AN.

#### Intervention –

Group JAN – *Jalaukavacharana* sitting at 7 days interval.

Followed by *Karpuradikuzhampu anjana* eye drops

Dose - 2 drops, 3 times per day.

Group AN – *Karpuradikuzhampu anjana* eye drops

Dose - 2 drops, 3 times per day.

**Site of Jalauka application** – on lid margin (anterior surface of eyelid), near outer Canthus both side simultaneously. (Two leech-one on each side)

**Duration of Trial** – 21 days.

#### Diet recommendation-

Patients were advised to follow *pathya Ahara* and *viharaas* mentioned in *Netra Roga Chikitsa* in classics.

#### Research Proforma-

A special research Proforma was prepared comprising of *Ayurveda* and modern parameters essential for the assessment of *Praklinnavartma-Blepharitis* before and after treatment.

**Follow up-** was done for 1 month.

#### Investigations-

Haematological – Hb%, TC, DC, ESR, CT, BT, Platelets count

Urine- Albumin, sugar, microscopic Examination

**Criteria of assessment:**

The assessment was done on improvement in signs and symptoms with the help of suitable scoring method ranging from 0-3 e.g. (1) Mild pain (2) Bahytam Shunam(Lid Edema) (3)Antaha Klinnam ( Palpebral Congestion) (4) Srava (Discharge) (5) Kandu (Itching) (6) Burning sensation (7) Scaling (8) Anterior lid margin hyperaemia (9) Madarosis (10) Ptylosis. Overall assessment of result was done as follow:

- Cured: 100% relief in signs and symptoms and no recurrence during follow up study.
- Marked Improvement: 76%-99% improvement in signs and symptoms.
- Moderate Improvement: 51-75% improvement in signs and symptoms.
- Mild Improvement: 26-50% improvement in signs and symptoms.
- Unchanged: Up to 25% reduction in signs and symptoms

**OBSERVATIONS AND RESULTS:**

Maximum number of patients i.e. 41.93 % belonged to age group of 1-16 years,Maximum number of patients were Female i.e.67.74%, Maximum number i.e. 87.09% were Hindu,Maximum i.e. 45.17% patients were educated up to Secondary level,Maximum number of the patients were students i.e. 58.06%, Maximum patients i.e.

64.52% belonged to middle class, Maximum patients were vegetarian i.e.80.65%, Maximum patients were taking *Katu Rasa* in diet predominately i.e. 64.51%,Maximum patients Maximum patients were having associated complaints Dandruff i.e. (61.29%), Maximum patients i.e. 70.97% had seborrhoeic type of blepharitis. Maximum patients i.e. 96.77% patients were suffering from *Antah Klinnam*, *Kandu* and scaling at lid margin; 74.19% patients from *Bahyatam Shunam*; 51.61% of patients were suffering from mild pain and *Srava*, 48.39% patients had heaviness in lids , 45.16% patients were having burning sensation and 35.48% patients were having *Shotha*, 69.29% had redness of anterior lid margin, 48.39% had ptylosis (thickening of lid margin) and 48.38% had madarosis.

**Effect of Therapies**

In the present research study total 31 patients having classical clinical features of *Praklinnavartma-Blepharitis* were registered. Amongst these 29 patients completed the course of treatment and 02 patients did not complete the treatment.

**Effect of therapy in Group-JAN**

Total 16 patients were registered in *Jalauka* and *KarpuradiKuzhampu Anjana* group i.e. Group JAN, out of which 15 patients had completed the treatment and 01 patient left the treatment against medical advice.

**Table no.- 2 Effect of therapy in Group JAN:**

Clinical Features	n	Mean score			% of relief	SD±	SE±	‘t’	P
		B.T	A.T.	X					
<i>Aruja</i> (mild pain)	8	1.12	0	1.12	100	0.35	0.12	9	<0.001**
<i>Bahytam Shunam</i> (Lid edema)	9	1	0	1	100	0	0	0	-
<i>AntahaKlinnam</i> (Palpebral congestion)	15	1.26	0.06	1.2	94.74	0.41	0.11	11.22	<0.001**
<i>Shotha</i> (inflammation)	6	1.16	0.16	1	85.71	0	0	0	-
<i>Kandu</i> (Itching)	15	1.4	0	1.4	100	0.51	0.13	10.69	<0.001**
Scaling	15	1.33	0.06	1.06	94.12	0.26	0.06	16	<0.001**

Heaviness in lids	4	1	0	1	100	0	0	0	-
<i>Srava</i>	5	1.2	0	1.2	100	0.45	0.2	6	<0.01**
Burning sensation	7	1	0	1	100	0	0	0	-
Congestion of fornix	6	1.66	0	1.66	100	0.41	0.17	3	<0.05*
Dryness	2	1	0	1	100	0	0	0	-
Ant. Lid margin inflammation	10	1.1	0.1	1	90.91	0	0	0	-
Ptylosis	6	1	0.16	0.83	83.3	0.41	0.16	5	<0.01**
Madrosis	8	1	0.25	0.85	85.71	0.46	0.16	5.24	<0.01**
Clinical Features	N	BT	AT	X	Percent of relief	SD	SE	T	P
<i>Aruja</i> (mild pain)	8	1.12	0	1.12	100	0.35	0.124	9	<0.001
<i>Bahytam Shunam</i> (Lid oedema)	9	1	0	1	100	0	0	0	-
<i>AntahaKlinnam</i> (Palpebral congestion)	15	1.26	0.06	1.2	94.74	0.41	0.11	11.22	<0.001
<i>Shotha</i> (inflammation)	6	1.16	0.16	1	85.71	0	0	0	-
<i>Kandu</i> (Itching)	15	1.4	0	1.4	100	0.51	0.13	10.69	<0.001
Scaling	15	1.33	0.06	1.06	94.12	0.26	0.06	16	<0.001
Heaviness in lids	4	1	0	1	100	0	0	0	-
<i>Srava</i>	5	1.2	0	1.2	100	0.45	0.2	6	<0.01
Burning sensation	7	1	0	1	100	0	0	0	-
Congestion of fornix	6	1.66	0	1.66	100	0.41	0.17	3	<0.05
Dryness	2	1	0	1	100	0	0	0	-
Ant. Lid margin inflammation	10	1.1	0.1	1	90.91	0	0	0	-
Ptylosis	6	1	0.16	0.83	83.3	0.41	0.16	5	<0.01
Madrosis	8	1	0.25	0.85	85.71	0.46	0.16	5.24	<0.01

\*\*Highly Significant

\*Significant

B.T.-Before Treatment

A.T.-After Treatment

100% relief was found in *Aruja* (mild pain), *Kandu* (Itching), Congestion of fornix, *Srava* statistically the results were highly significant.94.74% relief was found clinically in *AntahaKlinnam* (Palpebral congestion), statistically the results were highly significant.94.12% relief was found in Scaling, statistically the results were highly significant.83.3% relief was found in. Ptylosis, statistically the results were highly signifi-

cant.85.71% relief was found in Madarosis, statistically the results were highly significant.100% relief was found in *Bahytam Shunam* (Lid oedema), Heaviness in lids, Burning sensation, Dryness and 85.71 % relief was found in *Shotha* (inflammation). 90.91% change was found in Ant. Lid margin inflammation after treatment.

#### Effect of therapy in Group AN

In *KarpuradiKuzhampu Anjana* group i.e. Group AN; 15 patients were registered..A Amongst them 14 patients completed the

course of treatment, 01 left the treatment against medical advice.

**Table no.-3 Effect of therapy in group AN:**

Clinical Features	N	Mean score			% of relief	SD±	SE±	‘t’	P
		B.T	A.T.	X					
<i>Aruja</i> (mild pain)	7	1.28	0	1.28	100	0.58	0.22	5.89	<0.01**
<i>BahytamShunam</i> (Lid edema)	13	1.31	0	1.31	100	0.53	0.14	8.82	<0.001**
<i>AntahaKlinnam</i> (Palpebral congestion)	14	1.43	0.36	1.07	75	0.38	0.10	10.60	<0.001**
<i>Shotha</i> (inflammation)	5	1.4	0	1.4	100	0.58	0.26	5.42	<0.01**
<i>Kandu</i> (Itching)	13	1.84	0.15	1.69	91.66	0.40	0.11	14	<0.001**
Scaling	14	1.42	0.28	1.14	80	0.37	0.10	11.31	<0.001**
Heaviness in lids	9	1	0	1	100	0	0	0	-
<i>Srava</i>	10	1.3	0.1	1.2	92.30	0.51	0.16	7.34	<0.001**
Burning sensation	6	1	0	1	100	0	0	0	-
Congestion of fornix	10	1.1	0	1.1	100	0.44	0.14	7.77	<0.001**
Dryness	10	1	0	1	100	0	0	0	-
Ant. Lid margin inflammation	9	1	0	1	100	0	0	0	-
Ptylosis	4	1	0.5	0.5	50	0.57	0.28	1.73	>0.05
Madarosis	7	1	0.28	0.71	71.42	0.51	0.19	3.65	<0.05*

\*\*Highly Significant \*Significant B.T.- Before Treatment A.T.-After Treatment 100% relief was found in *Aruja* (mild pain), *BahytamShunam* (Lid oedema), Congestion of fornix, *Shotha* (inflammation), statistically the results were highly significant and clinically also patients got improvement.92.30% relief was found in *Srava*, statistically the results were highly significant.91.66% relief was found in *Kandu* (Itching), statistically the results were highly significant.80% relief was found in Scaling, statistically the results were

highly significant.75% relief was found in *AntahaKlinnam* (Palpebral congestion), statistically the results were highly significant.71.42% relief was found in Madarosis, statistically the results were significant.100% relief was found in Burning sensation, Heaviness in lids, Dryness, and Ant. Lid margin inflammation.50% relief was found in Ptylosis, which is statistically insignificant.

**Table no. - 4 Comparative effect of group JAN and group AN on chief complaint:**

Clinical Features	df	% of relief		Mean Difference	‘t’	P
		Group JAN	Group AN			
<i>Aruja</i> (mild pain)	14	100	100	- 0.161	- 0.738	>0.05
<i>BahytamShunam</i> (Lid edema)	21	100	100	- 0.308	- 1.907	>0.05
<i>AntahaKlinnam</i> (Palpebral	28	94.74	75	0.129	0.985	>0.05

congestion)						
Shotha (inflammation)	9	85.71	100	-0.4	-1.809	>0.05
Kandu(Itching)	28	100	91.66	0.292	1.559	>0.05
Scaling	28	94.12	80	-0.0762	-0.655	>0.05
Heaviness in lids	13	100	100	0	0	-
Srava	14	100	92.30	0	0	-
Burning sensation	12	100	100	0	0	-
Dryness	11	100	100	0	0	-
Ant. Lid margin inflammation	17	100	100	0	0	-
Ptylosis	13	83.3	50	0.333	1.079	>0.05
Madarosis	13	85.71	71.42	0.0357	0.145	>0.05

In the comparative study Group study Group JAN showed better result than Group AN in *AntahaKlinnam* (Congestion), *Kandu*(Itching), Scaling, *Srava*, Ptylosis and Madarosis, but the results were statistically insignificant. Group AN showed better results than Group JAN in *Shotha* (Inflammation) but the results were statistically insignificant. Group JAN and Group AN both showed equal results i.e. 100% in Aruja (Mild Pain), *BahyatamShunam* (Lid oedema), Heaviness in lids, Burning sensation, Dryness and Ant. Lid margin inflammation.

#### Total Effect of Therapy

In both Groups (Group JAN and Group AN) all the patients i.e.100% got marked improvement. None of the patients were completely cured, moderately improved, and mild improved or remained unchanged.

#### Follow up observations in Group - JAN

During follow up period recurrence in Scaling was found in 50% of patients within 10-20 days and in 35.71% within 20-30 days. Remaining patients i.e. 14.29% had no recurrence. The recurrence in *Kandu* was found in 42.86% of patients within 10-20 days whereas no recurrence was observed in remaining 57.14% of patients. The recurrence in Palpebral congestion was found in 21.43% of patients within 20 - 30 days whereas no recur-

rence was observed in remaining 78.57% of patients.

#### Follow up observations in Group - AN

Scaling was found in 92.86% of patients within 10-20 days and remaining patients i.e. 7.14% had no recurrence. The recurrence in *Kandu* was found in 72.43% of patients within 10-20 days whereas no recurrence was observed in remaining 29.57% of patients. The recurrence in Palpebral congestion was found in in 42.86 % patients within 10 – 20 days whereas no recurrence was observed in remaining 57.14% of patients.

#### DISCUSSION

Maximum number of patients i.e. 41.93 % belonged to age group of 1-16 years; it proves that disease occurs in child or begins in childhood age. Maximum number of patients were female i.e.67.74%; it has no significant influence but can be concluded that because of tender nature of skins and/or more involvement in house hold work, so probably they are more prone to develop Blepharitis. Maximum i.e. 45.17% patients were educated up to secondary level;it may prove that lack of proper knowledge or awareness about hygiene and disease may be a reason of more prevalence of disease. Maximum number of the patients were students i.e. 58.06%; this proves that because students are more expose to smoke, dust

and take less care about hygiene and also more indulgence in starchy and fast food make them more prone because this interfere with the immunity of child and in childhood age predominance of *Kapha* is present. Maximum patients i.e. 64.52% belonged to middle class; to some extent poor hygiene and improper nutrition can be considered as responsible for recurrence of disease in these people.

Group A showed better result than Group B in *AntahaKlinnam* (Congestion), *Kandu* (Itching), Scaling, *Srava*, *Ptylosis* and *Madarosis* and during follow up observation late recurrence was found in group A. This is due *shodhana* effect of *jalaukavacharana* in the group A. In other signs & symptoms like mild pain, lid oedema, heaviness of lid, burning sensation etc. both groups have shown equal results. This is due to *kaph-pittahara*, *shothahara*, *lekha* and *krimighna* properties of the anjana drugs.

#### MODE OF ACTION DRUGS & JALAU-KAVACHARANA

##### Probable mode of action of karpuradikuzhampu rasakriyaanjana:

Mode of action of *KarpuradiKuzhampu Anjana* can be understood in following way:

- It has high bioavailability due to thick consistency like honey so it remains in contact to cell/tissue for long time and gives maximum efficacy of of the drugs.
- It has high potency and penetration power because it is a combination of herbo-mineral drugs which make them *Yogavahi* as it is the property property of *Rasau-shadhis*.
- Most of the drugs are having *Tikta*, *Kashaya*, *Madhura* and *Katu Rasa* which pacifies the *Kapha-Pitta Dosha* and *Kashaya Rasa* does *Lekhana* of the *Kapha-Dosha*.
- *Guru* and *SnigdhaGuna* of the drug pacifies the *Vata-Pitta Dosha* and *Tikshna Guna* and *UshnaVirya* increases the penetra-

tion power of drug and do the *Lekhana* of the *KaphaDosha*.

- Ingredients of *KarpuradiKuzhampu* are having *Karmas* (actions) like *Tridosahara*, *NetraRogaNashaka*, *Raktastambhaka*, *Krimighna*, *Kapha-Pittahara*, *Twakadoshahara* and *Raktashodhaka*. So it may act as bacteriocidal or bacteriostatic, detoxifier, blood purifier and anti- inflammatory.
- So by the above mentioned properties drug may help in the management of inflammation, infection and do healing of the tissue.

##### Probable Mode of Action of Jalaukavacharana:

- *Sushrutastated* that *Raktamokshana* not only purifies the channels but also let the other parts becomes free from diseases and action is so fast than other remedies<sup>15</sup>.
- *Sushruta* recommended *Jalaukavacharana* is better for the superficial blood (*Ava-gadha Grathita Rakta*).
- *Jalauka* sucks the impure blood only with ideal example of Swan by *Vagbhata*, Leeches applied on skin sucks the blood at superficial level might be from capillaries or extra-cellular space so it may be more impure than other body channels. *Jalauka* can easily suck impure blood due to superficial distribution of veins.
- By doing so, excess virulence is removed from the site and more pure blood reach at the site of disease which combats the disease condition and reduce the inflammatory reaction locally.

##### Mode of Action leech therapy on Modern point of view:

- Leech application has counter irritant effect on lesion, which creates new cellular division which takes place by removing dead cell layer, and results in reduction of local swelling and lichenification<sup>16</sup>
- In one experiment, the PO<sub>2</sub> of blood in arterial vessels and blood expelled by leech was measured and it was found that

the PO2 of expelled was comparatively less than the arterial blood of human.<sup>17</sup>

The saliva of leech contains following biochemicals:<sup>1</sup>

Hirudin, Calin, Destabilase, Hirustasin – which acts as anti coagulant hence increase the blood circulation locally which helps in combating the inflammation and revitalizes the cells at local site.

Bdellins and Eglins – acts as Anti-inflammatory which reduces the inflammation locally.

Histamine like substance, Acetylcholine enzyme – acts as vasodilator which increases the blood circulation.

Hyaluronidases– increase the permeability and circulation of blood.

Anesthetic substance – acts as local anesthesia so relieve pain locally.

So in nut-shell it acts as anti-inflammatory, analgesic, anti-coagulant, and vasodilators.

## CONCLUSION

*Praklinnavartama* is having close correlation to that of Blepharitis specially with Seborrhoeic blepharitis and ulcerative type. Group A showed better result than Group B in *AntahaKlinnam* (Congestion), *Kandu* ( Itching), Scaling, *Srava*, Ptylosis and Madarosis and Group B showed better results than Group A in *Shotha* (Inflammation) but all the results were statistically insignificant. Group A and Group B both showed equal results i.e. 100% in *Aruja* (Mild Pain), *BahyatamShunam* (Lid oedema), and Heaviness in lids, Burning sensation, Dryness and Ant. Lid margin inflammation. In Both the Groups (Group A and Group B), all the patients got marked improvement. In follow up period, more recurrence in Scaling, *Kandu* and Palpabral congestion was observed in Group B than Group A. No untoward adverse effect was found after application of both *Anjana* and *Jalauka*. Mild irritation and congestion of conjunctiva due to

*Anjana* application were observed. But after a few minutes of application they were gone. So it can be applied for long term. On the basis of observation of Clinical study it can be concluded that *Shodhana Karma (Jalaukavacharana)* prior to local therapy (*Anjana*) is more effective than only local therapy (*Anjana*).

## REFERENCES

1. <http://www.Ingenta.com>, Prevalence of Blepharitis in US by Lemp, Michel A.,Nichols, Kelly K.
2. Kanski J.J. Clinical ophthalmology, Butterworth Heinemann, Elsevier Science Ltd New Delhi, 6th edition 2003. Page no. – 128
3. Kanski J.J. Clinical ophthalmology, Butterworth Heinemann, Elsevier Science Ltd New Delhi, 6th edition 2003. Page no.- 128
4. Sir Stewart Duke-Elder and Kenneth C Wybar. System of ophthalmology. Henry Kimpton Publishers, Great Britian1961-VII volume. Page no. - 205
5. KanskiJ.J.Clinical ophthalmology, Butterworth Heinemann, Elsevier Science Ltd New Delhi, 6th edition 2003., Page no. – 128, Basak S.K.: Essentials of ophthalmology, IIndedi. (1999), Current Books International, Calcutta. Page no. – 85-86.
6. Kanski J.J. Clinical ophthalmology , Butterworth Heinemann, Elsevier Science Ltd New Delhi, 6th edition 2003. Page no. – 130
7. Sir Stewart Duke-Elder and Kenneth C Wybar. System of ophthalmology. Henry Kimpton Publishers, Great Britian1961-VII volume. Page no. – 210-211
8. Sir Stewart Duke-Elder and Kenneth C Wybar. System of ophthalmology. Henry Kimpton Publishers, Great Britian1961-VII volume. Page no. – 208

9. ShastriAmbikadutta ,SusrutaSamhita, 14th Edition,Chaukhamba Sanskrit Sansthan,, Varanasi. Su SaUt – 1/34, Page no. – 13
10. ShastriAmbikadutta, SusrutaSamhita, 14th Edition,Chaukhamba Sanskrit Sansthan,, Varanasi. Su SaUt – 1/34-35, Page no. - 13
11. ShastriAmbikadutta ,SusrutaSamhita, 14th Edition,Chaukhamba Sanskrit Sansthan,, Varanasi. Su SaUt – 8/10, Page no. – 38
12. ShastriAmbikadutta, SusrutaSamhita, 14th Edition,Chaukhamba Sanskrit Sansthan,, Varanasi, Su Sam Ut – 12/47, Page no. - 49
13. MadhavaNidana (Uttarardha) with „Madhukosha“ Sanskrita comm. by Shrivijayarakshita&Shrikanthadatta and „Vidyotini“ Hindi Comm. by ShriSudarshanaShashtri, edited by Prof.YadunandanaUpadhyaya.ChaukhambhaSanskritaBhavana, Varanasi, 31st edition. M. N.49/1-6
14. CharakaSamhita, Comm. Chakrapanidatta Ed. Vd. JadavajiTrikamjiAcharya, ChaukhambaSurbharatiPrakashana, Varanasi, 2008. Ch. Vi. - 3/44, Page no. – 703
15. ShastriAmbikadutta, SusrutaSamhita, 14th Edition,Chaukhamba Sanskrit Sansthan,, Varanasi, Su.Sa.Su.-1/34, Page no. - 54
16. Indian Journal of traditional knowledge,Vol.83, July 2009,pp 443-445
17. Dr. K. K. Sijoria, interaction between student and teacher R AV – New Delhi, 2003)
18. <http://www.leeches.biz/> 2005-2010 Niagara Medical Leeches (Verbana LLC).

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