

TO STUDY THE EFFECT OF *SAINDHAV LAVAN* AS *PRATISARAN* IN COMPARISON
TO *CHLORAMPHENICOL* AND *POLYMYXIN-B* EYE OINTMENT APPLICATION ON
KUMBHĪKA.

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Abstract-

Kumbhīka is an inflammatory condition, papule originate in eyelid margin, suppurates, discharges and bulges again which is caused by *pitta* predominant vitiated *tridoshas*. *Kumbhīka* is treated with *Lekhan* and *Pratisaran* of *Saindhav lavan* on affected area, which scrapes out the pus, dead cells and tissues of lesion, also improves the blood circulation at that site which helps in early wound healing.

In spite of being a common ocular disorder, it has been somehow neglected from research point of view. Also *Saindhav lavan pratisaran* easy to perform at home and cost effective. So it has been decided to research on this alternative effective remedy for patient's compliance. 60 patients of *Kumbhika* were randomly selected; Trial group 30 patients were treated with *Saindhav lavan Pratisaran* once daily and Control group 30 patients were treated with Chloramphenicol and Polymixin B eye ointment application twice daily, for 7 days. Assessment was done on 4th, 7th and 15th day to see the effect of treatment and on 30th day to see recurrence in both the groups. In results, out of 30 patients, 25 (i.e. 83.33percent) patients got relief in Trial group and in Control group, out of 30 patients, 26 (i.e. 86.67percent) patients got relief in all signs and symptoms of

Kumbhika. By statistical analysis, no significant difference in both the treatments. So *Saindhav lavan Pratisaran* is as effective as Chloramphenicol and Polymyxin-B eye Ointment application on *Kumbhika* and it is safe, cost effective, easily available and applicable treatment for *Kumbhika*.

Key words- kumbhika, lekhan and pratisaran, pidaka, vartmashotha

INTRODUCTION

Kumbhika is one of the *Vartmamandalgata netraroga* explained in various Ayurvedic *samhitas*. Many *vartmarogas* explained in *Samhitas* which shows *Pidakas*, but *Kumbhika* can differentiate well because of its peculiar signs and symptoms. *Kumbhika* is an inflammatory condition, *Pidaka* resembling the seed of pomegranate fruit originate in eyelid margin, suppurates, discharges the fluid and bulges again which is caused by vitiated *tridoshas*. But *Vagbhatta* said that vitiated *Pitta dosha* is main causative factor. *Kumbhika* is treated with *Lekhan* and *Pratisaran* of *saindhav lavan* on affected area. Because of this karma the pus, dead cells and tissues etc materials of lesion scraped out, also the blood circulation gets improved at that site which helps in early wound healing. *Saindhav lavan* has been selected on the basis that it having properties like *chakshushya*, *avidahi*, *tridoshaghna*, locally *vranadosahar* and pacifies the *shotha*, *shoola* etc as explained in various ayurvedic *samhitas*.

Kumbhika can be correlate with External *Hordeolum* (*Stye*). The External *Hordeolum* is a common disorder of the eyelid. It is suppurative inflammation of the glands of *Zeis* and or *Moll*.

The symptoms are acute pain, watering and photophobia and the signs are;

- 1) Stage of cellulitis:- localized hard swelling at lid margin with oedema.
- 2) Stage of abscess formation:- visible pus point at lid margin.

Treatment:- According to modern ophthalmology it can be treated with hot compression, systemic and local broad spectrum antibiotics and anti-inflammatory drugs. Surgical incision is required for large abscess.

OBJECTIVES OF THE STUDY:

- 1) To assess the effect of *Saindhav lavan* as *Pratisaran* on *Kumbhika*.
- 2) To assess the signs & symptoms of *Kumbhika* before treatment.
- 3) To assess the changes in signs & symptoms of *Kumbhika* after treatment.

MATERIALS AND METHODS:

MATERIALS:-

❖ SAINDHAV LAVAN:-

Chemical Formula: NaCl

Latin Name: Sodii chloridum

Properties- *Avidahi* (does not cause burning), *Netrya* (eye tonic), *Hridya* (cardiac tonic), *Lavanottam* (best among all salts), *Shuddha* (pure), *Madhura* (sweet), *Snigdha* (oily), *Laghu* (light), *Sookshma* (minute), *sheeta* (cold), *Vyavayi* (immediately spreads through minute channels). Due to *snigdha*, *laghu* and *sheeta* *guna* it is *chakshushya*.

Rasa panchaka:

Rasa : *Lavana*

Guna : *Laghu, Snigdha, Sookshma*

Virya : *Sheeta*

Vipaka : *Madhura*

Doshagnata : *Tridosha shamak* (pacifies all 3 doshas).

Rogagnata:

Netrarogahar, Vranadoshanashak, Aruchinashak, Vibandhahar, Hridrogahar, Mukharoganashak, Krimiroganashak, Vishanashak, Chhardihar in low dose.

DETAILS OF MATERIAL (SAINDHAV LAVAN) -

1. Collection- *Saindhav lavan* were obtained from reputed *Ayurvedic* drug store.

2. Authentication and Standardization- Authentication and standardization tests done at Vasantidevi Pharmacy College, Kodoli.

3. Preparation-

- Then *Saindhav lavan* was purified by dissolving in clean water, filtering through clean cloth and then evaporation of water by heating. Then *Saindhav lavan* was regained in pure

form. Then sample from that material sent for standardization. Then it was packed in sterile small plastic airtight containers in sufficient amount.

- The pH of Saindhav lavan sample was 7.1

CONTROL DRUG INFORMATION:

1. CHLORAMPHENICOL:-

- Chloramphenicol is an antibiotic, isolated from streptomyces vanezuelae.
- It is a bacteriostatic antimicrobial.
- Chloramphenicol has a very broad spectrum of activity. It functions by inhibiting bacterial protein synthesis.
- It is active against Gram-positive bacteria, Gram-negative bacteria and spirochaetes, rickettsiae, chlamydiae and neoplasms.
- Preparations - 10 mg/ gm eye ointment.

2. POLYMYXIN- B (AEROSPORIN):

- It is derived from the bacterium Bacillus polymyxa.
- Polymyxin-B is an antibiotic primarily used for gram-negative infections.
- Preparations- 10000 Units eye ointment.

METHODOLOGY:

The whole study was divided into,

- 1) Conceptual study
- 2) Clinical study

1) CONCEPTUAL STUDY:-

Detailed review of *Ayurvedic* and modern literature was carried out to know about the disease entity and treatment etc. and also information & updates from internet websites related to this subject were taken.

2) CLINICAL STUDY:-

Patients from *Netraroga* OPD of *Yashwant Dharmarth Rugnalay, Kodoli* having characteristic features of *Kumbhika* i.e. External Hordeolum were selected for the present study. 60 patients of *Kumbhika* were randomly selected for present study irrespective of sex, caste, creed, race and religion.

Inclusion Criteria:

1. Patients of age group 5 - 50 yrs.
2. Patients irrespective of sex, educational status, socio-economical status, marital status, caste etc.
3. Patients having signs and symptoms of *Kumbhika*.
4. Patients having single or multiple *Kumbhika* in one or both the eyes.

Exclusion Criteria:

1. Patients having eyelid diseases other than *Kumbhika* like *Anjananamika, Utsangini, Lagan, Ulcerative Blepharitis, Trachoma, Lid Tumours* etc.
2. Patients of major eye diseases like corneal ulcers, malignant eye diseases, major intraocular infections etc.
3. One eyed patients.
4. Patients suffering from local and systemic contagious diseases and allergic conditions.
5. Patients having H/O major systemic diseases like Hypertension, Autoimmune diseases, Diabetes mellitus etc.

METHOD OF STUDY:

Clinically study has accomplished in three phases,

1. Diagnostic Phase.
2. Interventional Phase.
3. Assessment Phase.

1.Diagnostic Phase:

The patients were diagnosed & selected on the basis of signs and symptoms of *Kumbhika*. All the patients selected for trial were explained the nature of the study.

Consent- Written and informed consent was obtained from patient or his/ her legal guardian after explaining details about the study.

Criteria adopted for present study as under:

A. Signs :

- Size of *Kumbhika* (*Aakar*)
- Colour of *Kumbhika* (*Varna*)
- Lid oedema (*Vartmashotha*)

B. Symptoms :

- Pain (*Toda*)
- Watering (*Netra srava*)

2.Interventional Phase:

The study was intervened by the treatment with *Saindhav lavan pratisaran* and Chloramphenicol & Polymyxin-B eye ointment application.

Drug Schedule:

Group–A (Trial group): was treated with *Saindhav lavan Pratisaran* on affected part of eyelid twice daily for 7 days.

Administration –

- Thorough cleaning of eyelid done and *swedana* (hot compression) to the lid given with cotton dipped in warm water.
- Then *Saindhav lavan Pratisaran* done on affected part of lid in sufficient quantity i.e. 500 mg with the finger tip, under all aseptic precautions for 4 – 5 mins and then lid washed with warm water.

Group–B (Control group): was treated with *Chloramphenicol - 10 mg & Polymixin B10000 units* eye ointment local application for 7 days.

Administration–

- Local Application under all aseptic precautions at bedtime.
- Hot compression twice daily given.

Follow up- Follow up was done on 4th, 7th and 15th day to see the effect of treatment and on 30th day to see recurrence in both the groups.

3. Assessment Phase:

The effect of the treatment (results) was assessed on 4th, 7th and 15th day in regards to the clinical signs and symptoms on the basis of grading and scoring system and overall improvement.

OBSERVATIONS AND RESULTS :

1) Location wise distribution of patient :(Location of *Kumbhika*):

Table No.1:

Location	No. of patient		Total	Percentage (%)
	Trial group	Control group		
Upper lid	11	12	23	38.33
Lower lid	16	14	30	50
Both lids	3	4	7	11.67
Total	30	30	60	100

(Source:Primary Data)

Higher incidence of patients i.e. 50percent was suffering from lower lid *Kumbhika* than upper lid i.e. 38.33percent & both lids i.e.11.67percent.

2) General features wise distribution of 60 patients:

Table No.2:

Signs & Symptoms	Trial Group	Control Group	Total	Percentage
Pain (Toda)	30	30	60	100
Watering (Netra srava)	28	27	55	91.67
Lid oedema (Vartmashotha)	30	30	60	100
Colour of Kumbhika (Varna)	30	30	60	100
Size of Kumbhika (Aakar)	30	30	60	100

(Source:Primary Data)

In the present study watering i.e. *netrasrsva* found in 91.67% patients while rest signs and symptoms found in all patients i.e.100%.

(B) CLINICAL PROFILE

The clinical data presented here is based on 60 patients 30 in Trial Group and 30 in Control Group.

1. Size of Kumbhika (Aakar):Effect of treatment

Table No.3:

Effect of Treatment							
	Groups	Relief	No	Total	Relief %	χ^2	p
			relief				
4th day	Trial Group	4	26	30	13.33	0.13	>0.05
	Control Group	5	25	30	16.67		
7th day	Trial Group	19	11	30	63.33	0.3	>0.05
	Control Group	21	9	30	70		
15th day	Trial Group	25	5	30	83.33	0.131	>0.05
	Control Group	26	4	30	86.67		

(Source:Primary Data)

On 4th day 13.33percent patients got relief in Trial group and 16.67percent patients got relief in Control group.On 7th day 63.33percent patients got relief in Trial group and 70percent patients got relief in Control group. On 15th day 83.33percent patients got relief in Trial group and 86.67percent patients got relief in Control group.

3. Colour of Kumbhika (Varna):

Table No.4:

Effect of treatment							
	Groups	Relief	No relief	Total	Relief %	χ^2	p
4th day	Trial Group	6	24	30	20	0.372	>0.05
	Control Group	8	22	30	26.67		
7th day	Trial Group	19	11	30	63.33	0.693	>0.05
	Control Group	22	8	30	73.33		
14th day	Trial Group	27	3	30	90	0.218	>0.05
	Control Group	28	2	30	93.33		

(Source:Primary Data)

On 4th day 20percent patients got relief in Trial group and 26.67percent patients got relief in Control group.On 7th day 63.33percent patients got relief in Trial group and 73.33percent patients got relief in Control group.On 15th day 90percent patients got relief in Trial group and 93.33percent patients got relief in Control group.

4. Lid oedema (Vartmashotha):

Table No.5:

Effect of treatment of							
	Groups	Relief	No relief	Total	Relief %	χ^2	P
4th day	Trial Group	6	24	30	20	0.111	>0.05
	Control Group	5	25	30	16.67		
7th day	Trial Group	20	10	30	66.67	0.077	>0.05
	Control Group	21	9	30	70		
15th day	Trial Group	26	4	30	86.67	0.162	>0.05
	Control Group	27	3	30	90		

(Source:Primary Data)

On 4th day 20percent patients got relief in Trial group and 16.67percent patients got relief in Control group.On 7th day 66.67percent patients got relief in Trial group and 70percent patients got relief in Control group.On 15th day 86.67percent patients got relief in Trial group and 90percent patients got relief in Control group.

5. **Pain (Toda):Table No.6**

Effect of treatment of							
	Groups	Relief	No relief	Total	Relief %	χ^2	p
4th day	Trial Group	9	21	30	30	0.077	>0.05
	Control Group	10	20	30	33.3		
7th day	Trial Group	20	10	30	66.7	0.739	>0.05
	Control Group	23	7	30	76.7		
15th day	Trial Group	28	2	30	93.3	0.351	>0.05
	Control Group	29	1	30	96.7		

(Source:Primary Data)

On 4th day 30percent patients got relief in Trial group and 33.33percent patients got relief in Control group.On 7th day 66.67percent patients got relief in Trial group and 76.67percent patients got relief in Control group.On 15th day 93.33percent patients got relief in Trial group and 96.67percent patients got relief in Control group.

6. Watering of eyes (Netrasrava):

Table No.7:

Effect of treatment							
	Groups	Relief	No relief	Total	Relief %	χ^2	P
4th day	Trial Group	8	20	28	28.57	0.447	>0.05
	Control Group	10	17	27	37.03		
7th day	Trial Group	19	9	28	67.86	0.257	>0.05
	Control Group	20	7	27	74.07		
15th day	Trial Group	26	2	28	92.86	0.315	>0.05
	Control Group	26	1	27	96.3		

(Source:Primary Data)

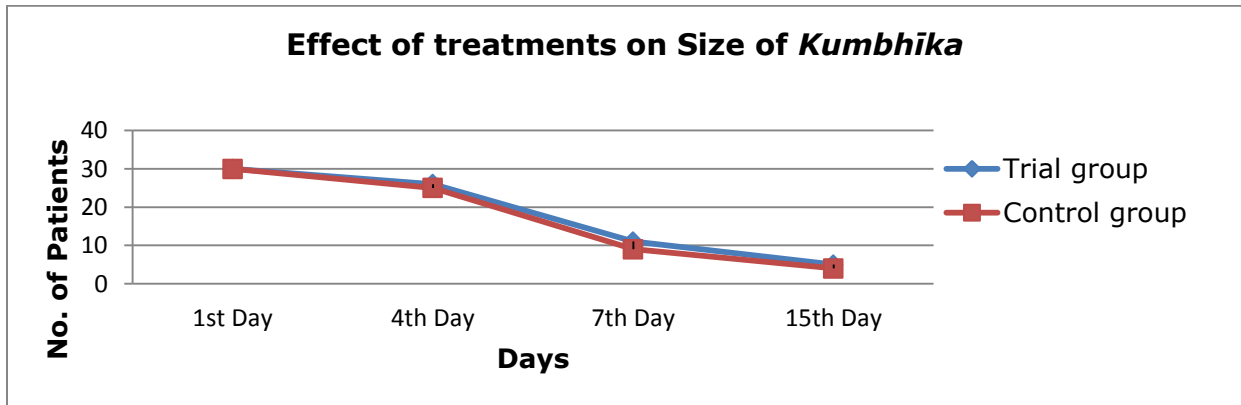
On 4th day 28.57percent patients got relief in Trial group and 37.03percent patients got relief in Control group.

On 7th day 67.86percent patients got relief in Trial group and 74.07percent patients got relief in Control group.

On 15th day 92.86percent patients got relief in Trial group and 96.30percent patients got relief in Control group.

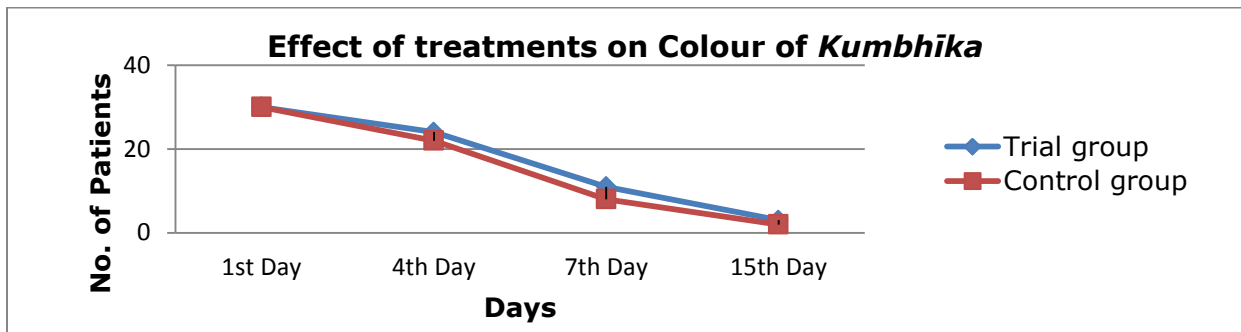
Day wise relief in Signs & Symptoms by treatments of both groups:

Graph No.1:



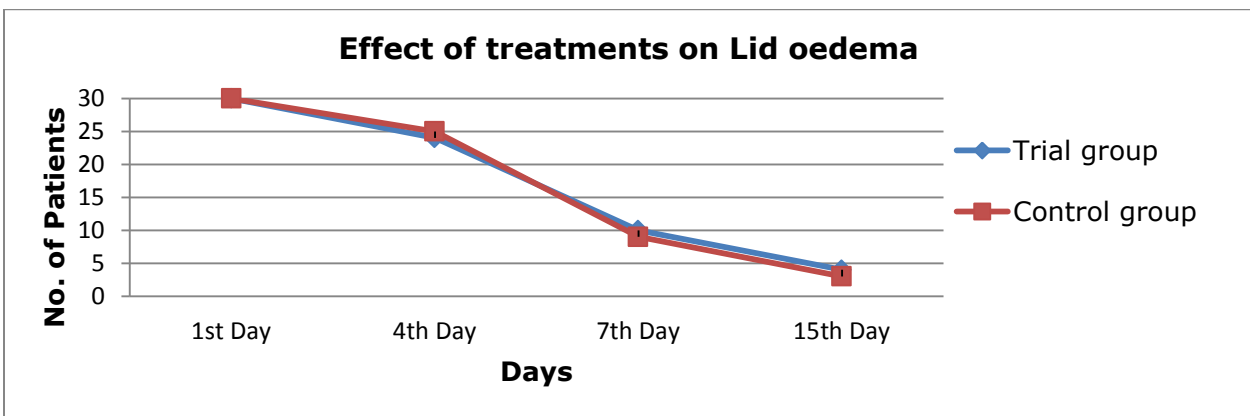
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Graph No.2



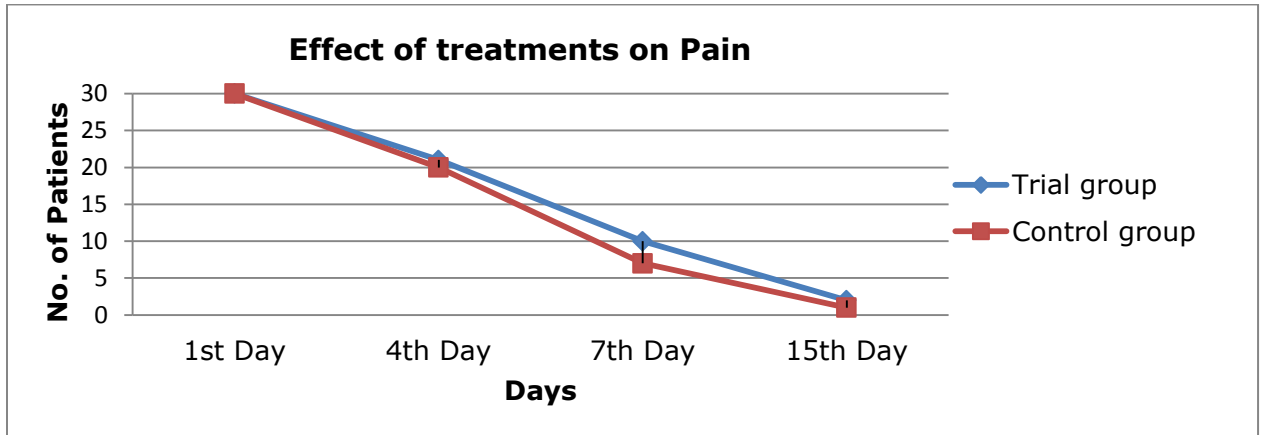
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Graph No.3



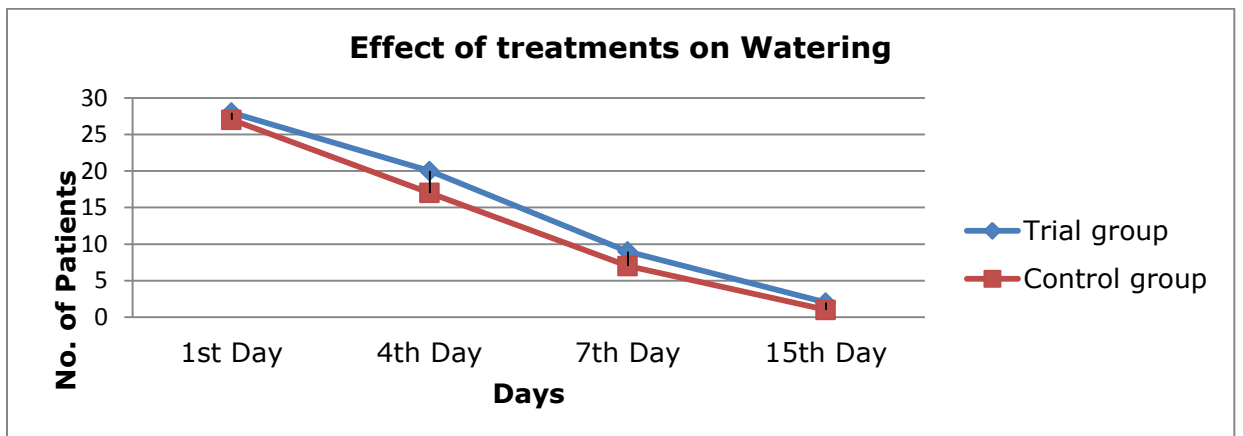
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Graph No.4



(Source:Primary Data)

Graph No.5



(Source:Primary Data)

❖ Overall effect of Treatments in both the groups-

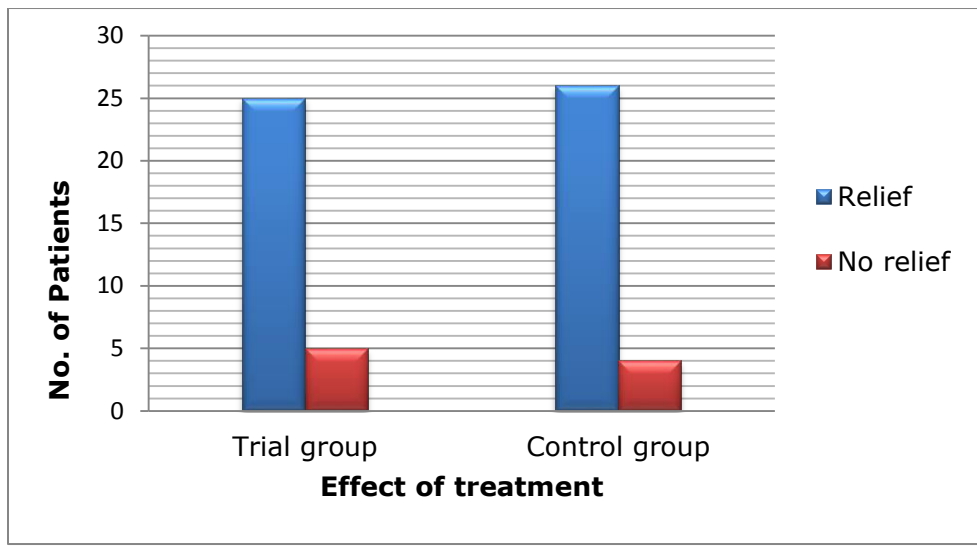
Table No.8

Group	Relief	No	Total	Relief %	χ^2	P
		Relief				
Trial Group	25	5	30	83.33	0.131	>0.05
Control Group	26	4	30	86.67		
Total	51	9	60			

(Source:Primary Data)

By statistical analysis χ^2 value is 0.131 which is lower than p table value (3.84) at 5percent level of significance. So no significant difference in both the treatment.

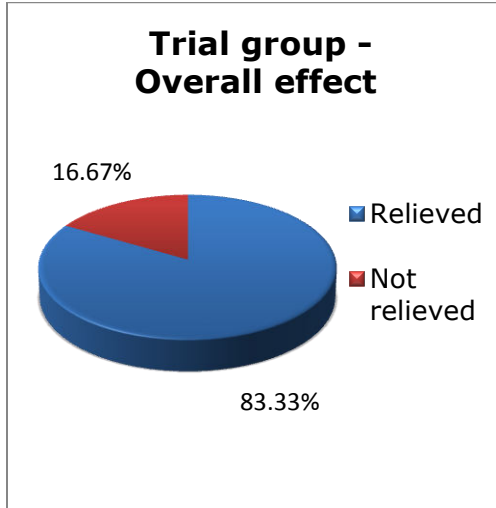
Graph No.6



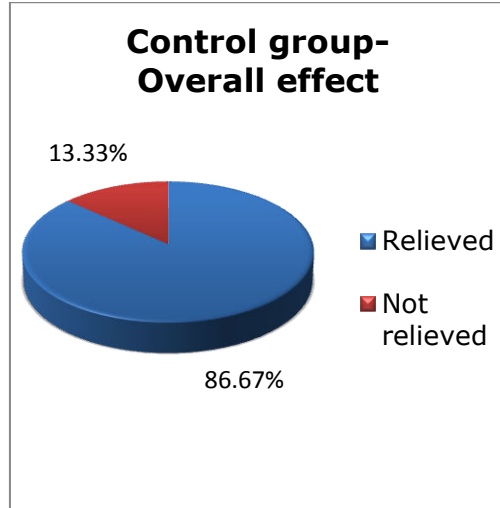
(Source:Primary Data)

Pie diagrams showing overall effects of treatments-

Graph No.7



Graph No.8



(Source:Primary Data)

EFFECT OF THERAPY:

Effect of therapies were assessed in total 60 patients of both the groups (Control Group-30 patients and Trial Group-30 patients) on the basis of changes observed in cardinal signs & symptoms and statistical analysis.

Overall effect of treatment of both groups-

This observation is based on table no. 25 and graph no. 24 and pie diagram no. 2 & 3. These graph and diagrams shows, out of 30 patients of *Kumbhika* 25 (i.e. 83.33percent) patients got relief in all signs and symptoms in Trial group and out of 30 of patients of Control group 26 (i.e. 86.67percent) patients got relief in all signs and symptoms of *Kumbhika*. By statistical analysis χ^2 value is 0.131 which is

lower than p table value (3.84) at 5percent level of significance. So no significant difference in both the treatment.

DISCUSSION

The cardinal sign of *Kumbhika vyadhi* is *Pidaka*, which originates in eye lid due to the vitiated *tridoshas* and *rakta, mamsa dhatu*. *Acharyas* correlated the appearance of *pidaka* with pomegranate fruit seeds. This *pidaka* can originate at lid margin or inner side of lid, but *Madhavakar* have explained by the word ‘*Vartmante*’, that it originates mainly at lid margin. Then that *pidaka* gets suppuration and discharges the pus or fluid and bulges again. *Acharya Vagbhatta* said that, vitiated *Pitta* is main causative factor in the pathogenesis of *Kumbhika* and also thrown light on its recurrence by the words ‘*adhmayante punarbhinna*’.

The description about *Kumbhika* not found in elaborate manner in classics. Only explanation about *pidaka* is there but associated signs and symptoms not explained in classics. But because of *pidaka, pitta* predominant *tridosha dushti* and *rakta- mamsa dushti*, the signs and symptoms like *vartmashotha* (lid oedema), *toda* (pain), *netrasrava* (watering) etc may be there which are mentioned as *samana lakshanas* in first *adhyaya* of *Sushruta Uttar Tantra*.

As per signs and symptoms explained by *Acharyas*, *Kumbhika* can correlate with External Hordeolum which is a suppurative inflammation of gland of the Zeis or Moll. The causative organism commonly involved is *Staphylococcal aureus*. The symptoms are acute pain associated with swelling of lid, watering and photophobia and signs show localized hard, red, tender swelling at the lid margin associated with marked oedema. Then abscess gets formed with visible pus point on the lid margin in relation to the affected cilia and which gets burst and discharges the pus. It is recurrent lid disease.

So all these signs and symptoms closely correlate with signs and symptoms of *Kumbhika*.

Sushruta and *Vagbhatta* explained *Lekhana* and *Pratisaran* with *Saindhav lavan* as treatment for *Kumbhika*. So it is *Lekhana sadhya vyadhi*. *Saindhav lavan* is having *laghu, snigdha, sookshma, sheeta, avidahi & vyavayi guna*; *lavan rasa* and *madhura vipaka*. It has *tridoshahar* property and locally acts as *vranadoshanashak, vishnashak, shothahar and shoolahar*. As the *Saindhav lavan* is very cheap and also readily available in home also and the *pratisaran* procedure is easy to perform; *Saindhav lavan pratisaran* was selected for this study.

The present study has involved 60 patients of *Kumbhika*, who have completed treatment satisfactorily. The diagnosis was made on the basis of signs and symptoms described in *Ayurvedic* and Modern texts.

The selected patients were randomly categorized into two groups:-

Group A- TRIAL GROUP:

30 patients were included in this group. They were treated with *Saindhav lav Pratisaran* twice daily for 7 days.

Group B- CONTROL GROUP:

30 patients were included in this group. They were treated with *Chloramphenicol - 10 mg & Polymixin B - 10000 units* eye ointment local application at bedtime for 7 days.

For the assessment of results *Ayurvedic* and Modern parameters were followed. The results obtained were statistically analyzed and significance of difference between both groups was assessed by applying Chi-square test.

EFFECT OF THERAPY:

Effect of therapies was assessed on the basis of changes observed in cardinal signs & symptoms and statistical analysis.

Discussion on clinical study:

EFFECT OF THERAPY:

Effect of therapies was assessed on the basis of changes observed in cardinal signs & symptoms and statistical analysis.

1. Effect on Size of *Kumbhika* (Aakar): Size of *Kumbhika* reduced in 83.33percent patients of Trial group and in 86.67percent patients of Control group. χ^2 value of this is 0.131 which is statistically insignificant at $p > 0.05$. That means treatment of both groups shows similar effect on Size of *Kumbhika*.

2. Effect on Colour of *Kumbhika* (Varna): In Colour of *Kumbhika* 90percent patients got relief in Trial group and 93.33percent patients got relief in Control group. χ^2 value of this is 0.218 which is statistically insignificant at $p > 0.05$. That means treatment of both groups shows similar effect on Colour of *Kumbhika*.

3. Effect on Lid oedema (Vartmashotha): Lid oedema relieved in 86.67percent patients of Trial group and in 90percent patients of Control group. χ^2 value of this is 0.162 which is statistically insignificant at $p > 0.05$. That means treatment of both groups shows similar effect on Lid oedema.

4. Effect on Pain (Toda): Pain relieved in 93.33percent patients of Trial group and in 96.67percent patients of Control group. χ^2 value of this is 0.351 which is statistically insignificant at $p > 0.05$. That means treatment of both groups shows similar effect on pain (Toda).

1. Effect on Watering (Netrasrava): Relief from Watering found in 92.86percent patients of Trial group and in 96.30percent patients of Control group. χ^2 value of this is 0.315 which is statistically insignificant at $p > 0.05$. That means treatment of both groups shows similar effect on watering (*netrasrava*).

Overall effect of treatment in both group-

In Trial group 83.33percent patients got relief and in Control 86.67percent patients got relief in all signs and symptoms.

This analysis shows there was 3.34percent more relief in Control group patients which statistically insignificant. So no significant difference in treatments of both groups.

The follow up on 30th day of treatment did not shown any incidence of recurrence of *Kumbhika*.

So the efficacy of *Saindhav lavan Pratisaran* is nearly same as efficacy of Chloramphenicol and Polymyxin-B eye ointment application on *Kumbhika*.

There was no side effect of *Saindhav lavan Pratisaran* although patients told that there was irritation of eye and mild burning probably due to entry of *Saindhav* in the eye. Then after watering there is cooling effect which was due to *srotoshodhan*. Even that was managed safely by eye wash with clean water.

Probable mode of action of *Saindhav lavan Pratisaran*-

Kumbhika is a *tridoshaj Vyadhi* i.e. caused by vitiated *vata*, *pitta* and *kapha* as said by *Sushruta*. *Saindhav lavan* is having *laghu*, *snigdha*, *sookshma*, *sheeta*, *avidahi* & *vyavayi guna*; *lavan rasa* and *madhura vipaka*. By the action of *Pratisaran* and due to *sookshma* and *vyavayi gunas* *Saindhav lavan* penetrates in minute channels and spreads immediately in *Vartma*. Then by its *madhura* & *snigdha guna* it pacifies *Vata dosha* where as by its *avidahi*, *madhura*, *sheeta guna* it

pacifies *Pitta dosha*. By *laghu* & *sookshma guna* it pacifies *Kapha dosha*. So by these properties it pacifies all the three *doshas* which involved in pathogenesis of *Kumbhika*.

Saindhav lavan pratisaran does *lekhana karma* i.e. scraping action. This scraping effect clears *sthanik* (local) *rakta dushti* by draining *ashuddha rakta* and pus. Also removes *mamsa dushti* i.e. dead cells and tissues etc materials of the lesion by scraping effect and clears the surface. *Vranashodhak*, *vishanashak* & *shothahar* actions of *saindhav lavan* and improved blood circulation to the *vrana* site due to the action of *Pratisaran*, helps in early *vrana ropan* i.e. healing process by new granulations. Because of all these actions, *Saindhav lavan Pratisaran* pacifies all the *tridoshas* and local *rakta*, *mamsa dushti* which reduces the size of *Kumbhika*, *vartmashotha* (lid oedema), *toda* (pain) (due to *shoolahar* property) and *netrasrava* (watering) etc symptoms.

So *Saindhav lavan* by its *guna* (properties), *karma* (actions) and due to local scraping effect of *Pratisaran* gives relief in *Kumbhika vyadhi*.

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