WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 5.045
Volume 4, Issue 4, 660-669. Research Article ISSN 2277 – 7105

STUDY OF EFFICACY OF ERANDTAIL (CASTOR OIL) ASHCHOTANA (EYE DROPS) IN DRY EYE SYNDROME.

***Dr.Chandana A. Virkar**

M.S. (Shalakya), D.O., B.A.M.S. Professor, College of Ayurveda & Research Centre, Nigdi, M.S., India.

Article Received on
22 Jan 2015,

Revised on 15 Feb 2015,
Accepted on 09 March 2015,

***Correspondence for Author**
Dr.Chandana A. Virkar
M.S. (Shalakya), D.O., B.A.M.S. Professor, College of Ayurveda & Research Centre, Nigdi, M.S., India.

ABSTRACT

Dry Eye Syndrome is one of the most common problems treated by ophthalmologists especially nowadays i.e. in the era of computerization. It is usually caused by a problem with quality or quantity of the Tear Film that lubricates the eye. Dry Eye is most distressing syndrome which endangers eye if present in extreme degrees. Main symptoms of Dry Eye are Irritation, burning, tired feel, dryness of eyes etc. Erandtail (castor oil-Ricinus communis) is easily available, cost effective, herbal folk medicine. Ashchotana is a procedure described in Ayurveda in which medicine is instilled drop by drop in the eye. **Aim:** To study the efficacy of Erandtail (Castor oil) in Dry Eye syndrome. **Methodology:** Clinical trials were conducted by single blind method. Total 50 patients of Dry Eye were divided in to 2 groups. Group A was treated with Erand tail (Castor oil-Ricinus communis) Eye Drops. Group B was treated with Hydroxypropyl Methyl Cellulose eye drops (artificial tear drops) for duration of one month. **Conclusion:** Erand tail eye drops were effective in Dry Eye.

KEYWORDS: Dry Eye Syndrome, Erand tail, Aschotana.

INTRODUCTION

Dry eye Syndrome is one of the most common problems treated by ophthalmologists especially nowadays in the era of computerization. Dry eye is distressing syndrome which endangers the eye if present in extreme degrees. The cornea is usually covered by pre corneal tear film. The tear film consists of(1)the superficial lipid layer derived from the meibomian glands;(2)the middle aqueous layer consisting of salts and proteins derived from the lacrimal secretions and (3)deep mucinous layer composed of glycoprotein and mucin derived as

secretions from the goblet cells of the conjunctiva.Deficiency in one or more of the layers of tear film can lead to "Dry Eye Syndrome." [1]

Excessive use of computers, A.C. atmosphere, pollution significantly contribute towards "Dry Eye Syndrome "The most common symptoms are irritation, a foreign body sensation ,stingy mucus ,burning sensation of eyes, dryness, tired heavy feeling to the eyelids etc.[2]

Though it is the disease of 21st century, Ayurvedic Treatment can definitely be tried.
Since main symptoms of "Dry Eye" show vata & pitta vitiation, snehdyavya with pitta vataghna property can be helpful in "dry eye".[3]

Ashchotana i.e. instilling medicated drops in the eye is relatively easier for patients.[4] Erandtail(castor oil-Ricinus Communis) is well known ancient medicine, a folk medicine [5] being used for pricking sensation. It has "Vataghna, Picchil (viscous) & Dahaprashamana" properties (reduces burning sensation).[6]

AIMS & OBJECTIVES

To study the efficacy of erandtaila ashchotana(castor oil eye drops) in Dry Eye Syndrome

STUDY DESIGN

Project Study was Totally Based on Clinical observations and narration of the Patients.
Clinical Trials were conducted by Single Blind Method.

MATERIALS & METHODS

Patients for the Project Study were from daily Outpatient Department [Eye O.P.D.]

Preparation of Erandtail Eye Drops

Standard preparation of Erandtail, available in the market was obtained.
It was kept in sterilizer at a pressure of 20 LB/IN^2. Glass vials were also kept in sterilizer. Glass vials filled with 10 ml of Erandtail & sealed packs with sterilized dropper were provided.

Design of study

Total 50 patients were selected for drug trial. They were divided into 2 groups.
1) Trial group: Total 25 patients were included in this group. These patients were treated locally with "Erandtail ashchotana".

Dose – 1 to 2 drops instilled in conjunctival sac three times a day.

Duration – 1 Month

Follow up study - Every week for 1 month.

2) Control Group**:** Total 25 patients were included in this group. These patients were treated with "Hydroxy propyl methyl cellulose "(H.P.M.C.)eye drops.(artificial tear drops) Dose – 1 to 2 drops instilled in conjunctival sac three times a day.

Duration - 1 month.

Follow up study - Every week for 1 month.

Selection criteria

Inclusion criteria

1. Patients complaining of 3 or more symptoms of "Dry eye" viz. Irritation, F.B. sensation, Burning, Stingy mucus, Itching, Tired heavy feel ,Dryness etc .were selected.
2. Patients with Schirmer's Test[7] findings less than 10 mm wetting in 5 minutes were selected on priority.

Exclusion criteria

1. Patients not ready for drug trial & follow up.
2. Patients with severe or complicated 'Dry eye' such as Sjogren's syndrome, Stevens Johnson syndrome etc, patients with gross corneal ulceration were excluded from the study .
3. Patients who failed to attend regular follow up were excluded from the study.

OBSERVATIONS & RESULT

Observations were noted at the start of the study. Follow up study was done after every 7 days for one month.

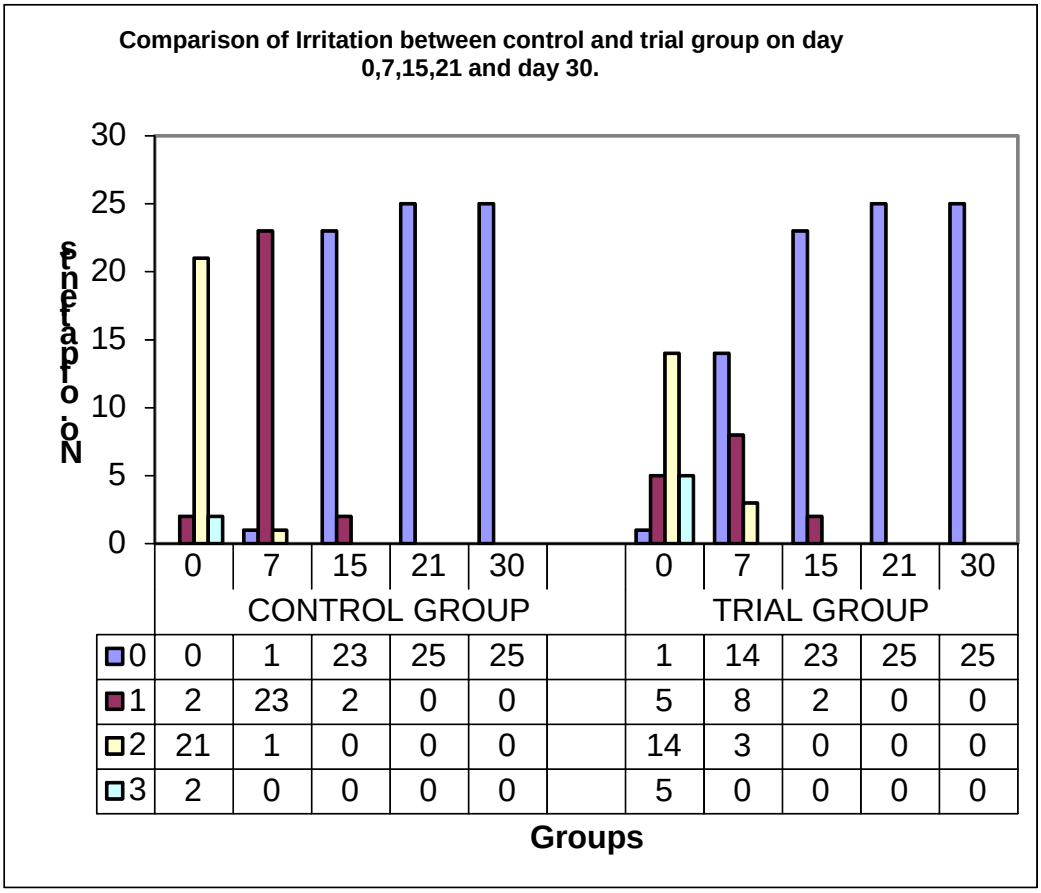
All the Observations were recorded in the tabular from as follows: Observation Table:

Symptoms	0^{th} Day	7^{th} Day	15^{th} Day	21^{st} Day	30^{th} Day
Irritation					
FB sensation					
Burning					
Stingy mucus					
Itching					
Tired heavy feel					
Other					
Adverse effect					

Subjective gradation of symptoms was done as follows

0 - normal 1 - mild 2 - moderate 3 - severe

After completion of the work, the data analysis shows the following facts: Effect of Therapies was assessed on the basis of changes observed in cardinal symptoms and statistical analysis. (Test of proportion is used.).Test used for comparative study of proportion of patients free from symptoms in specified period of Control group & Trial group.

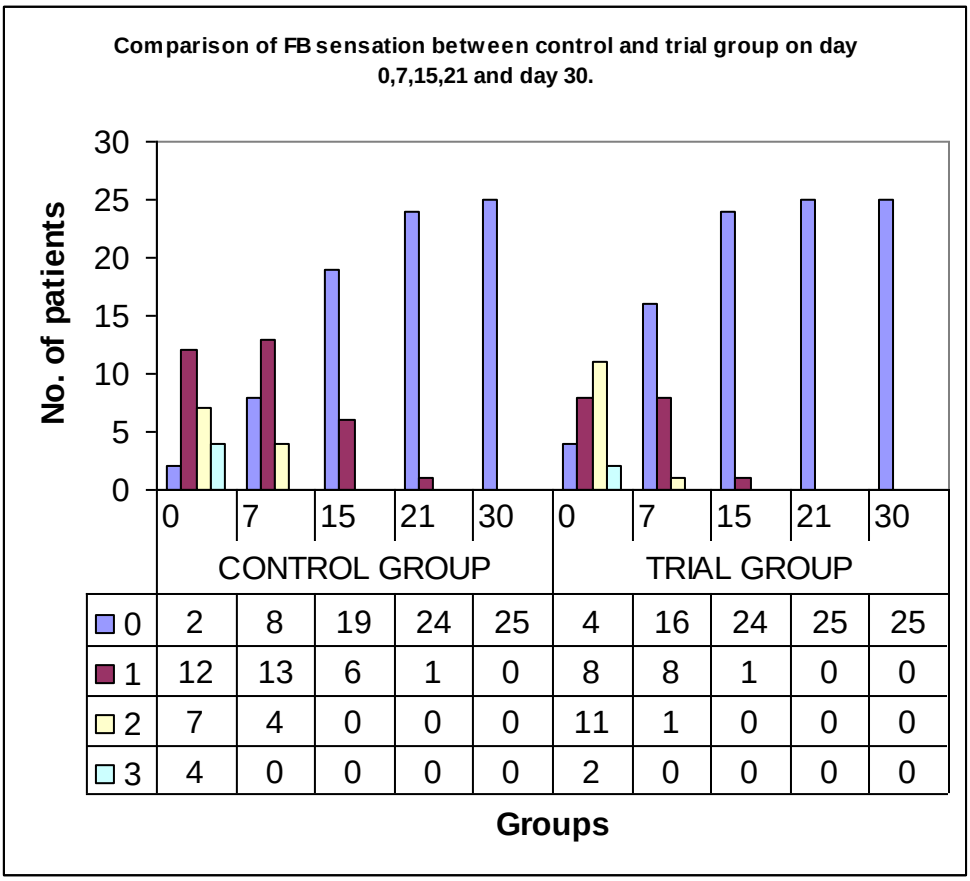


GRAPH-1:

Table 1: Comparison of two groups according to level of grades and number of days required for symptom irritation.

	Day 7		Day 15		Day 21	
	Control	Experimental	Control	Experimental	Control	Experimental
Z calculated	2.42		0.09		0	
Z table	2.326		2.326		2.326	
Result	Reject Ho.		Accept Ho.		Accept Ho.	

From above table it is we conclude that in trial group reduction in grade on 7th day is more significant than control group but on 15th and 21st day proportion does not vary significantly i.e. reduction in grade is same.

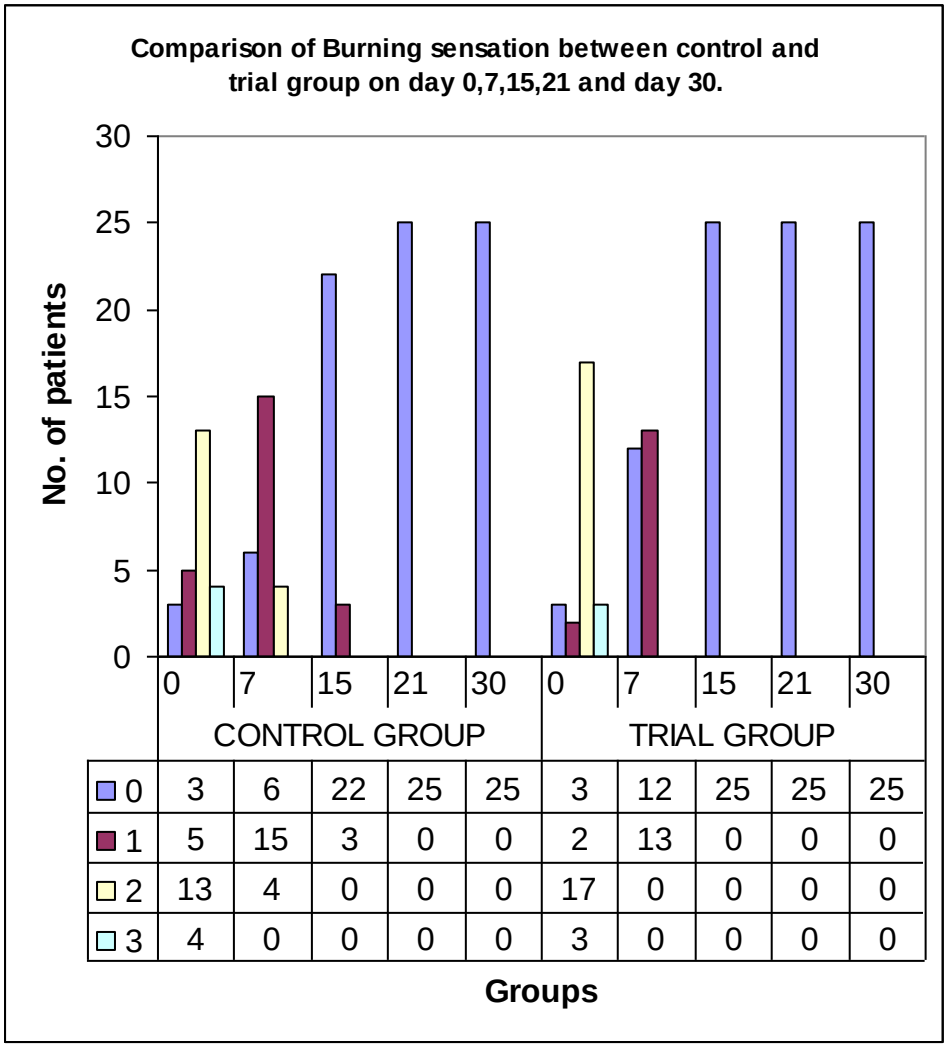


GRAPH 2

Table 2: Comparison of two groups according to level of grades and number of days required for symptom FB Sensation.

	Day 7		Day 15		Day 21	
	Control	Experimental	Control	Experimental	Control	Experimental
Z calculated	1.36		1.06		0.30	
Z table	2.326		2.326		2.326	
Result	Accept Ho.		Accept Ho.		Accept Ho.	

From above table it is we conclude that in control group reduction in grade on 7th,15th and 21st day proportion does not vary significantly i.e. reduction in grade is same.

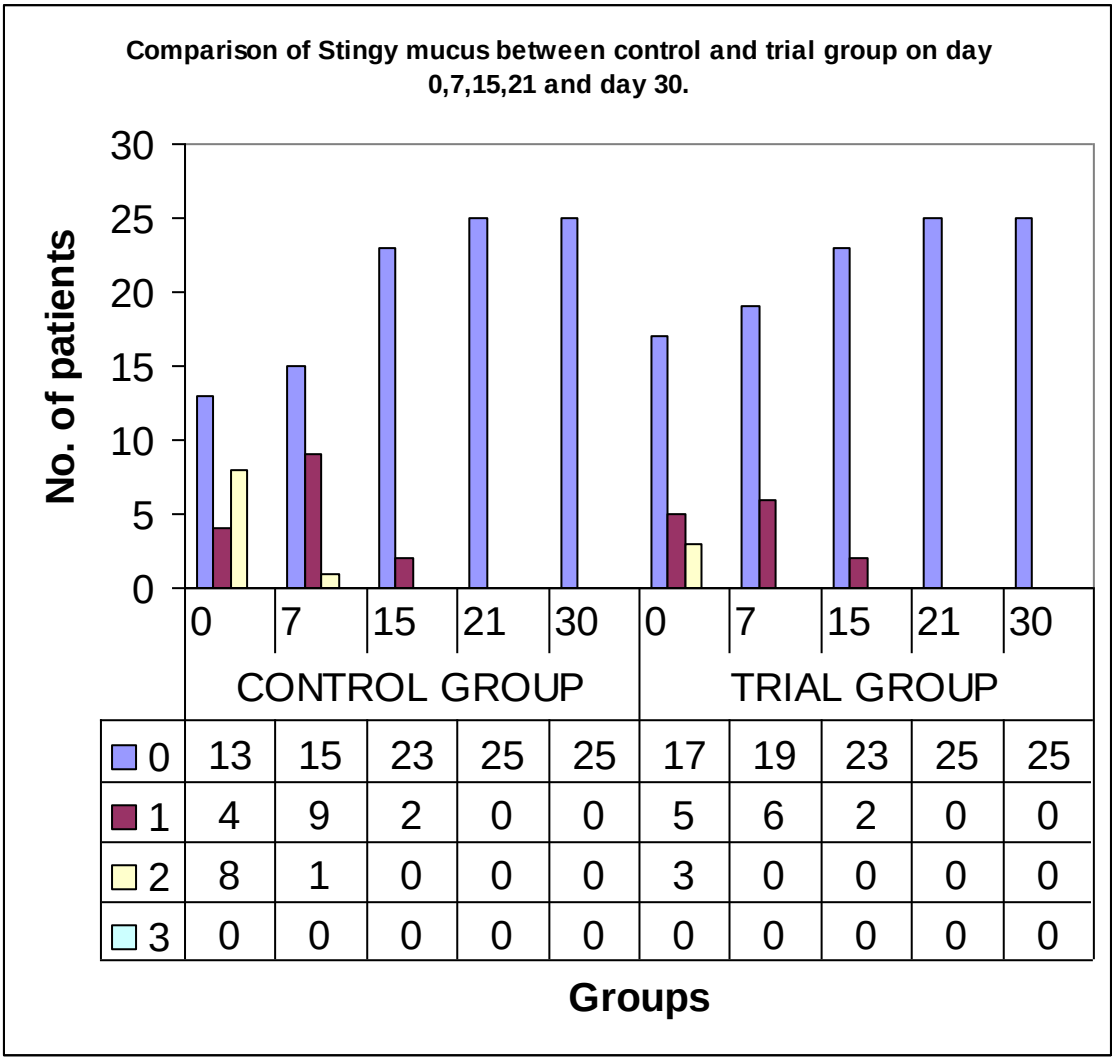


GRAPH 3

Table 3: Comparison of two groups according to level of grades and number of days required for symptom Burning.

	Day 7		Day 15		Day 21	
	Control	Experimental	Control	Experimental	Control	Experimental
Z calculated	3.61		1.28		1.01	
Z table	2.326		2.326		2.326	
Result	Reject Ho.		Accept Ho.		Accept Ho.	

From above table it is we conclude that in trial group reduction in grade on 7th day is more significant than control group but on 15th and 21st day proportion does not vary significantly i.e. reduction in grade is same.

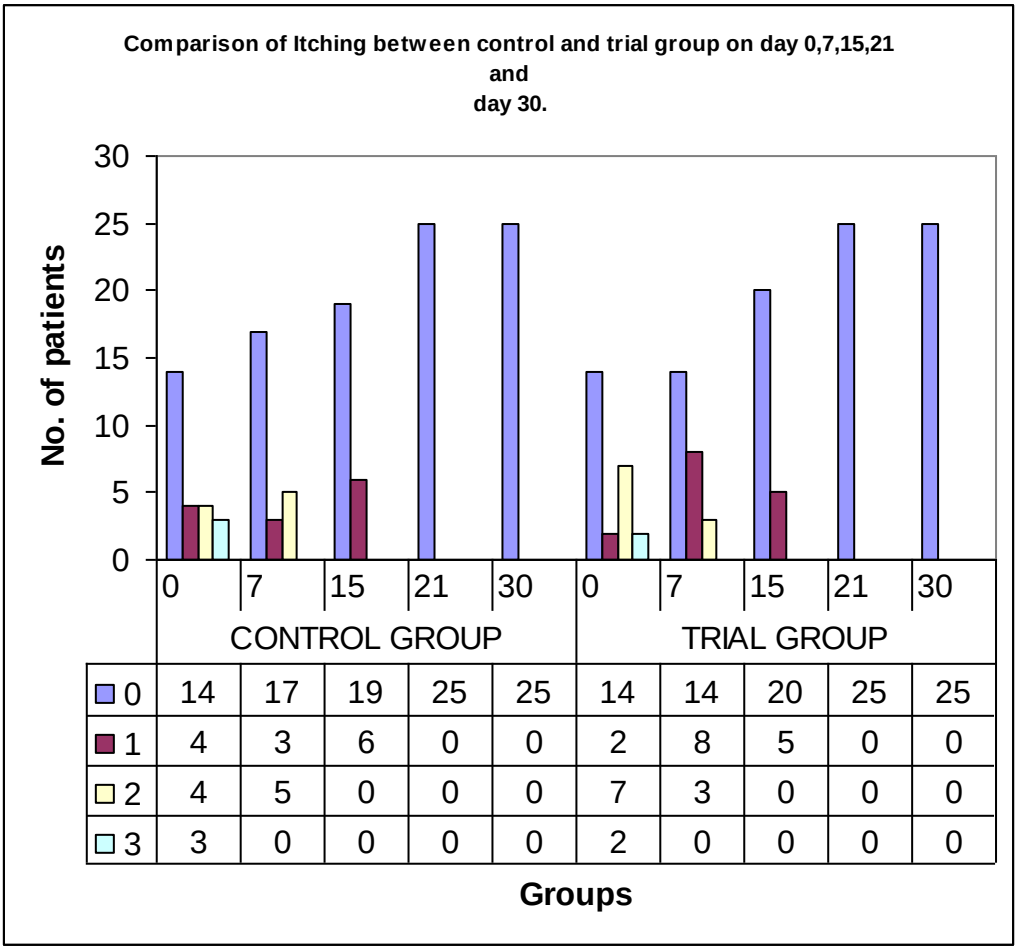


GRAPH 4

Table 4: Comparison of two groups according to level of grades and number of days required for symptom Stingy mucus.

	Day 7		Day 15		Day 21	
	Control	**Experimental**	**Control**	**Experimental**	**Control**	**Experimental**
Z calculated	1.28		0.58		0	
Z table	2.326		2.326		2.326	
Result	Reject Ho.		Accept Ho.		Accept Ho.	

From above table it is we conclude that in control group reduction in grade on 7^{th},15^{th} and 21^{st} day proportion does not vary significantly i.e. reduction in grade is same.

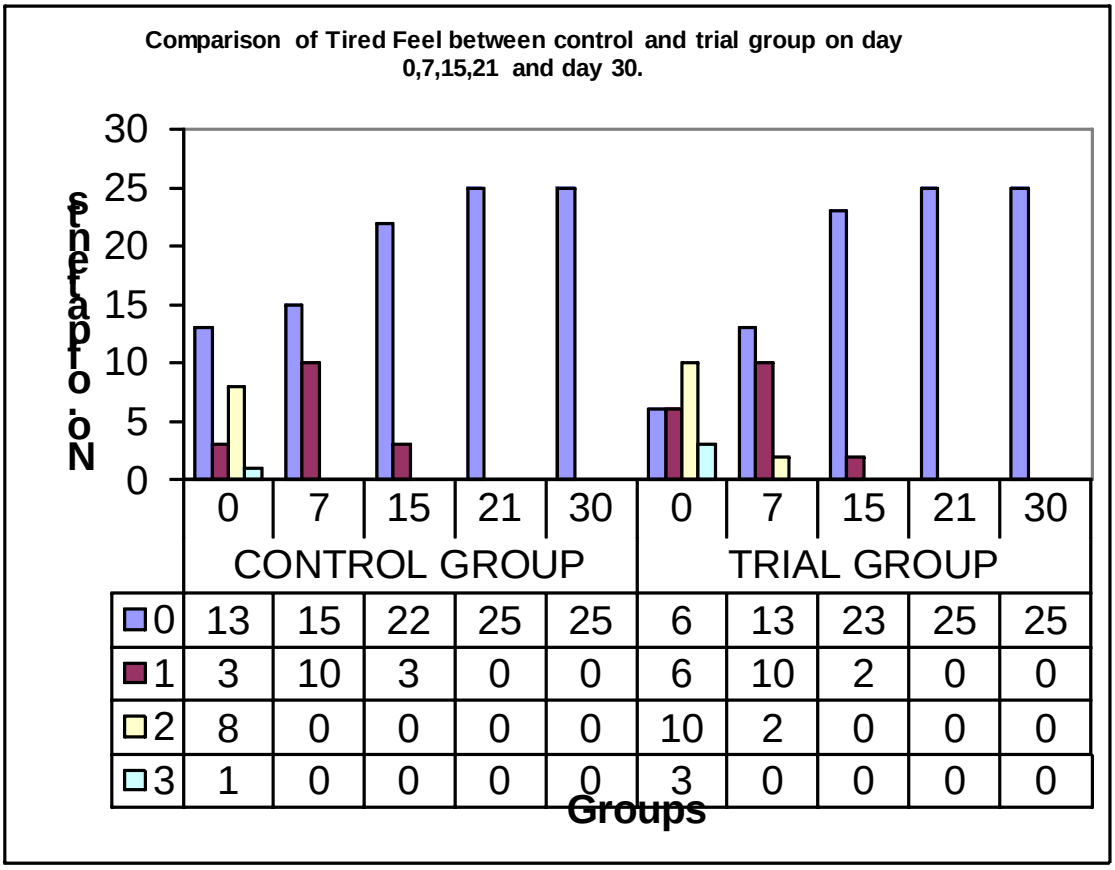


GRAPH 5

Table 5: Comparison of two groups according to level of grades and number of days required for symptom Itching :-

	Day 7		Day 15		Day 21	
	Control	**Experimental**	**Control**	**Experimental**	**Control**	**Experimental**
Z calculated	1.48		0.23		0	
Z table	2.326		2.326		2.326	
Result	Reject Ho.		Accept Ho.		Accept Ho.	

From above table it is we conclude that in control group reduction in grade on 7^{th},15^{th} and 21^{st} day proportion does not vary significantly i.e. reduction in grade is same.



GRAPH 6

TABLE 6: Comparison of two groups according to level of grades and number of days required for symptom Tired heavy feel.

	Day 7		Day 15		Day 21	
	Control	**Experimental**	**Control**	**Experimental**	**Control**	**Experimental**
Z calculated	1.87		0.66		0.04	
Z table	2.326		2.326		2.326	
Result	Reject Ho.		Accept Ho.		Accept Ho.	

From above table it is we conclude that in control group reduction in grade on 7^{th},15^{th} and 21^{st} day proportion does not vary significantly i.e. reduction in grade is same.

DISCUSSION

The data analysis showed the following facts: Amongst all the commonly observed 6 symptoms, reduction in grade on 15^{th} and 21^{st} day is same.

Hence we can conclude that, trial drug is as effective as control drug. Moreover, in symptoms like irritation and burning sensation, reduction in grade in trial group is more significant on 7^{th} day. In both groups no patient has shown deterioration during the trial.

Castor oil spreads rapidly on the tear film to fortify the lipid layer. This reduces evaporative tear loss. Main ingredient of castor oil is ricinoleic acid [8]. Castor oil decreases lid inflammation after repeated use over a week. Hence it helps in Dry Eye where meibomian gland dysfunction causing abnormal oily secretions is the cause.

SUMMARY AND CONCLUSION

1. Erandtail Eye Drops are well accepted by the patients and did not show any adverse effects.
2. Even though from PH point of view; Erandtail is slightly acidic(pH 5.83), it did not show any adverse effects. On the contrary, it was seen to be more effective than control drug in symptoms like irritation and burning.
3. Although statistically, both the drugs i.e. "Erandtail" and "HPMC Eye Drops", were equally effective; the comfort level reported by the patients was quite high in case of Erandtail than HPMC Eye Drops.
4. Besides its moistening effect, being anti-inflammatory, Erandtail is more effective in "Dry Eye Syndrome". Erandtail is a proven safe folk medicine. Also, it is cost effective and easily available.
5. Being a preservative free, untowards effects of preservatives can also be avoided in 'Erandtail'. Hence long term use of Erandtaila may be possible.

REFERENCES

1. Dr.Agarwal, Agarwal's Eye Diseases –ed page 316 & 484.
2. Jack j..Kanski- Clinical ophthalmology,4th ed. 1999.
3. Vd. B.V.Gokhale - Chikitsa Pradeep.
4. Sushrut samhita: with Ayurved Tattava Snadipika commentary by Kaviraj Ambika Dutta Shatri Choukhamba Sanskrit Prakashan, uttartantra 18.11th Edition 1997
5. P.H.O'connor Davies,G.A.Hopkins,R.M.Pearson -The actions & uses of ophthalmic drugs- -3rd ed.pg166.
6. Bhav Prakasha: of Shri Bhava Mishra with hindi commentary by Pt. Shri Bhrama Shankar Mishra Choukhamba Sanskrit Prakashan, 4th ed. 1977.
7. BhavPraksh Nighantu – Tail varga page 781.
8. Jack j..Kanski- Clinical ophthalmology,4th ed. 1999.
9. Dr. A K Nadkarni - Indian Materia Medica Volume I - page 1065.