A Controlled Clinical Study to Evaluate the Efficacy of *VRANAROPANI (HEMIGRAPHIS ALTERNATA (Burm.f)) MALAHARA* in the Management of *SADYOVRANA*

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Abstract - In Ayurvedic classics, Acharya Sushruta has elaborated the varieties of Vrana and its management in eight different chapters. The management of Vrana is evident by the 60 Upakramas (treatment modalities) mentioned by the Acharya. Hemigraphis alternata (Burm.f) T. Anderson (Fam. Acanthaceae) locally known as Murikootti (Malayalam), is a tropical herb used as a folklore medicine for wound healing traditionally. Thus, the study is intended to evaluate the efficacy of Vranaropani Malahara in Sadyovrana by a clinical trial. Methodology:- The outcome of the study is evaluated clinically on a minimum of 60 patients having Sadyovrana divided into two groups A and B. Group A and B patients received Povidone Iodine Ointment and Vranaropani Malahara respectively for application as treatment till the wound healed or a maximum of 15 days. The duration of study was 15 days which included the observations on BT, 1st, 3rd, 5th, 7th, 9th, 11th, 13th and 15th day. Data obtained and statistically analysed. Result:- The result obtained after clinical trials were analyzed statistically and all the observation were subjected to discussions. Overall assessment of the therapy was assessed based on significance of the statistical test value in parameters considered. Conclusion:- Statistically both groups are showing similar effects on Sadyovrana. The treatment with Vranaropani malahara and Povidone Iodine Ointment showed significant changes on some of the clinical features of wound which are subjective and objective parameters. On comparison between 2 groups there is statistically significant difference in all assessment criteria except edema and local rise in temperature. Group-B was more effective than Group-A.

Key Words: Sadyovrana, Povidone Iodine Ointment and Vranaropani Malahara.

INTRODUCTION

In the recent decades humans are facing new challenges day by day with the rapid unplanned mechanization and urbanization especially in developing countries. This mechanization in their busiest life schedules invariably led to the increased accidents and injuries. Starting from a minor cut to grievous road traffic injuries needs utmost care and attention.

According to statistical survey in India, cutaneous wounds have an incidence of 15 per 1000, in which 10.5 corresponds to acute cases while 4.5 are chronic (1).

A very vast description of Vrana and Vranaropaka yogas has been explained in Ayurveda thousands of years ago. Acharya Sushrutha has given a detailed description of Vrana and its management elaborately described in Shashti Upakramas(2). Alepa is ranked second among them with Vranaropana Vranshodhana and Vedanahara action(3)(4).

It is interesting to know in this regard about the ancient methods of wound healing. As we all know, Ayurveda was the mainstream medical science of the ancient era. We are having written evidences of the glorious past of this science. Surgery is not without wounds and trauma. If it was so well developed in that period, they must have effective wound healing measures.

Hemigraphis alternata(5) (Burm.f) T. Anderson (Fam. Acanthaceae), commonly called the Red Ivy or Purple waffle plant, and locally known as Murikootti (Malayalam), is a tropical herb used as a folklore medicine for wound healing traditionally.

Various studies substantiate the wound healing property of H. alternata with analytical and

phytochemical evidences, due to the presence of active components such as phenols, flavonoids, terpenoids, saponins, coumarins, carboxylic acid, cinnamic acid and tannins in H. alternata, which vouches for the wound healing property, the clinical acceptance of H. alternata leaf extract (HALE) in wound closure requires molecular evidence.

Pain is another important element. Every injury involves some degree of pain, for which an oral or conventional parenteral medication is required. This blend doesn't require it. According to the writing, it also possesses pain-relieving properties. Various texts have discussed the analgesic property.

This effort was aimed to build up the adequacy of the blend based on the advanced research boundaries. The goal is to position this medication as a superior choice for current local applicants. It is useful, multifunctional, and easily accessible. It is affordable, widely accessible, and multifunctional. It can meet the needs of antiseptics, cosmetics, and agents that promote healing on its own. Since the chemicals are easily obtained in India, we can produce a wide range of products, including treatments as patches, drops, and tulles. It will be affordable, available for immediate use, and ultimately serve as a gift to humanity.

OBJECTIVES

To evaluate the efficacy of Vranaropani Malahara and its comparison with standard Povidone-iodine ointment.

MATERIALS AND METHOD

Source of data

Literary source

All the available classical *ayurvedic* literature, modern literature, journals and websites about the disease condition, drugs and treatment will be reviewed and documented for the intended study.

Drug source

Raw drugs required for the preparation of *vranaropani malahara* will be collected from reliable source and will be authentically identified from the *rasa shastra and bhaishajyakalpana* department. The preparation of *malahara* will be done according to classical method mentioned in pharmacy attached to the pg studies, *rasashastra* and *bhaishajyakalpana* department, alva's ayurveda medical college moodubidire.

Sample source

60 patients fulfilling the inclusion criteria will be selected from the casualty, opd and ipd of alva's *ayurveda* medical college hospital, moodubidire, and other camps and referrals will be selected.

METHOD OF COLLECTION OF DATA

Study design

A clinical study with pre and post test study design and comparison with standard povidone iodine ointment.

Sample

60 patients with the incidence of sadyovrana irrespective of gender, religion, occupation, marital, socio-economical and educational status, fulfilling the diagnostic and inclusion criteria will be selected and randomly divided into two equal groups, group A (Povidine Iodine ointment) and group B (Vranaropani Malahara).

Diagnostic criteria

Patients with classical signs and symptoms of *sadyovrana*

Inclusion criteria:

➢ Patients of age group between 16 to 70 yrs.

➢ Kshataja vrana, Chinna vrana.

➢ *Sadyovrana* of following dimensions: - Maximum length 5 cm.

Maximum width: 5 cm
Maximum Depth: 0.5 cm.
Patients of either gender.
Wounds within 7 days.

Exclusion criteria:

- Patients with systemic disorders like dm, htn, bleeding disorders and dermatological manifestations.
- Wounds that require suturing.
- Dushta vrana (infected).
- The patients having sadyovrana with other complications like fractures marmaghata etc.
- Medico-legal cases including observation and follow up total 15 days.

Procedure

Informed written consent of the patients will be taken for both groups.

Group A
Povidone iodine ointment dressing will be done on 30 patients of group a.
Materials used: povidone iodine ointment, sterile water, sterilized cotton pad, sterile cotton swab, bandaging material, artery forceps, kidney tray, sterile gloves.
Poorvakarma: vrana will be cleaned with sterile water using sterile gauze.
Pradhanakarma: Povidone Iodine ointment will be applied on the wound by using a sterile gauze.
Paschatkarma : After that, bandage will be applied with sterilized cotton pad.

Group B
Vranaropani Malahara dressing will be done on 30 patients of Group B.
Materials used: *Vranaropani Malahara*, Sterile water, Sterilized cotton pad, Sterile cotton swab, Bandaging material, Artery forceps, Kidney tray, Sterile Gloves.
Poorvakarma: *Vrana* will be cleaned with Sterile water using sterile gauze.
Pradhanakarma: *Vranaropani Malahara* will be applied on the wound by using a sterile gauze.
Paschathkarma:. After that, bandage will be applied with sterilized cotton pad.
Study period : Including observation and follow up total 15 days.

INTERVENTIONS
Group A: Sterile water Cleaning and dressing with Povidone iodine ointment will be done every day till the wound heals or up to 15 days.
Group B : Sterile water cleaning and *dressing* with *Vranaropani Malahara* will be done every day till wound heals or up to 15 days.

FOLLOW UP
Wound cleaning and dressing will be done daily upto a period till the wound heals or to a maximum of 15 days.
• Observations will be made on the 1st, 3rd 5th 7th 9th 11th 13th & 15th day.
• If the wound is not healed in 15 days, then the patient will be referred for further managements.

ASSESMENT CRITERIA
Subjective parameters:
1. Pain (*Vedana*) (MC gills pain score index)
2. Burning sensation (*Daha*).

Objective parameters:
1. Size of the wound.
2. Edema of the surrounding skin.
3. Time taken for wound healing.
4. Local raise of temperature.
5. vrana lakshana

GRADING
Subjective criteria:
I) Grading Of Pain (Mc Gill Pain Score Index):
Grade 0 - None
Grade 1 - Mild
Grade 2 - Discomforting
Grade 3 - Distressing
Grade 4 - Horrible
Grade 5 - Excruciating
II) *Daha*: (Burning sensation)
Grade 0 - No Burning Sensation.
Grade 1 - Mild (Slight Localized Occasional Burning Sensation)
Grade 2 -Moderate (Localized Intermittent Burning Sensation Without Disturbing Daily Routine)
Grade 3 -Severe (Localized Continuous Burning Sensation Which Disturbs Daily Routine)

Objective Criteria:
1. Size of wound:
Length and breadth will be measured with the help of blotting paper which will placed over the wound and uniformly pressed. The impression will be recorded in centimeters.
i. Length
Grade 0 - Complete Wound Healing.
Grade 1 - 1 Cm to 3 Cm
Grade 2 - 3 Cm to 5 Cm
ii. Breadth
Grade 0 - Complete Wound Healing.
Grade 1 - 1 Cm to 3 Cm
Grade 2 -3 Cm to 5 Cm
iii. Depth

The depth was directly measured with the help of sterile probe and recorded in centimetres.

Grade 0 - Complete Wound Healing.

Grade 1 - 1 mm to 3 mm

Grade 2 -3 mm to 5 mm

2.Edema:

Grade 0 - Edema Absent

Grade 1 - Edema Present

3.Time Taken for Wound Healing:

Grade 0 - 0-3 Days

Grade 1 - 4-5 Days

Grade 2 - 6-7 Days

Grade 3 - More Than 7 Days

4.Local Raise of Temperature:

Grade 0 - Absence of Local Raise of Temperature

Grade 1 -Presence of Local Raise of Temperature

5.VRANA LAKSHANA: Table no. 21

AAKRUTI18	*VARNA19*	*SRAVA20*	*VEDANA21*
Aayata (rectangular)	*Vata* – ash, bone of pigeon dark mild red or black	*Vataja* – blackish, fog, curd milk, rice water	*Vata – todana, bhedana, chedana, tadana, aayamana*
Vruta (circular)	*Pitta* and *rakta*- blue,yellow,green,blue black, red brown	*Pittaja* – cow's urine, ash, conchshell, mrudhvika ,tila taila	*Pitta* and *Rakta – osha, chosha, paridhana*, rise in temperature
Chaturasra (square)	*Kapha* – yellowish white, white unctuous	*Kaphaja— kasisa, majja, pishta ,narikela jala*	*Kapha – kandu, gurutwa, suptatwam, alpavedana, shaitya*.
Triputa (triangular)	*Sannipataja* – all colour produced	*Sannipata* – discharge similar to *narikela jala, ervaruka rasa, kanji, Suddha jala, Yakrut.*	*Sannipataja* – characterized by two or more associated *vedanas*.

OBSERVATIONS

1.Age wise distribution of patients:

Among 60 subjects, 43(71.66%) belongs to 16-33yr age, 14(23.33%) belongs to 34-51yr age and 3(5%) belongs to 52-70yr. It might be due to their fast pace of life, and careless activities.

2. Gender wise distribution of patients:

Among 60 subjects, 41(68.3%) were males, 19(31.6%) were females. It suggests that the occurrence of the *Vrana* in male is more when compared to female.

3. Religion wise distribution of patients :

Among 60 subjects, 48(80%) were belonging to Hindu Religion, 10(16.6%) were belonging to Muslims and 2(3.3%) were belonging to others. Maybe the fact that the study was conducted in a Geographical area dominant Hindu religion.

4. Socio-economic status wise distribution of patients:

Among 60 subjects, 5(8.33%) were Upper class, 43(71.6%) were middle class and 12(20%) were poor class. Because to a study conducted on Geographical area predominant of Middle class.

5. Occupation wise distribution of patients:

Among 60 subjects, 31(51.6%) were student, 11(18.3%) were farmer, 8(13,3%) were private job, 5(8.3%) were house wife, 2(3.3%) were mechanic, 1(1.6%) were labour and 2(3.3%) were shopkeeper. No significance to the formation of *Vrana* in either of the occupation except that the data confirms dominance of students in the local area.

6. *Adhisthana* wise distribution of patients:

Among 60 subjects, 60 (100%) were having adhisthana on *Twak. The inclusion criteria had a maximum depth of 5mm*

7. Type of vrana wise distribution of patients:

Among 60 subjects, 25(41.7%) having Ghristha vrana, 22(36.7%) having Kshataja vrana and 13(21.7%) having Chinna vrana

RESULTS

The study was done on 60 Subjects, who were diagnosed as *Sadyovrana* by dividing randomly into 2 groups (30 each) Group A (Povidine Ointment) and Group B (Vranaropani Malahara). Data were collected from the subjects by observations made on the 1st, 3rd, 5th, 7th, 9th, 11th, 13th & 15th day.

The assessment was done based on detailed Case Performa by adopting scores on subjective and objective parameters.

The effect of medicines analysed used by RM ANOVA on rank test for within group and the Rank sum test or Mann-Whitney U test for comparison between 2 Groups.

Table no. 01: Effect of treatment on pain within Group A and B.

There is a statistically significant difference on pain found in Group A and B on comparing different time points with BT vs 5^{th},7^{th}, 9^{th} 11^{th},13^{th},15^{th} day $P < 0.05$.

COMPARISON	q	P<0.05	Q	P<0.05
BT vs 1^{st}	1.695	NO	3.400	NO
BT vs 3^{rd}	2.950	NO	4.233	NO
BT vs 5^{th}	6.136	YES	6.900	YES
BT vs 7^{th}	8.442	YES	9.467	YES
BT vs 9^{th}	10.476	YES	12.000	YES
BT vs 11^{th}	12.273	YES	12.000	YES
BT vs 13^{th}	12.273	YES	12.000	YES
BT vs 15^{th}	12.273	YES	12.000	YES

Table no. 02: Effect of treatment on pain between Group A and B

There is statistically significant difference between Group A and Group B analysis on pain. By comparing mean value of Group A and Group B of different time points with BT. Group B is better than Group A. No difference noted on comparing with BT with 11^{th}, 13^{th} and 15^{th} day suggests both drugs take similar time for significant action.

GROUP	MEAN		MEDIAN		T VALUE	P VALUE	REMARKS
	A	B	A	B			
BT-1^{st}	0.567	1.667	1.000	2.000	550.000	P =< 0.001	YES
BT-3^{rd}	0.967	1.900	1.000	2.000	522.000	P =< 0.001	YES
BT-5^{th}	1.800	2.233	2.000	2.000	744.000	P = 0.011	YES
BT-7^{th}	2.167	2.567	2.000	3.000	732.000	P = 0.007	YES
BT-9^{th}	2.533	2.900	3.000	3.000	750.000	P = 0.015	YES
BT-11^{th}	2.833	2.900	3.000	3.000	885.000	P = 0.661	NO
BT-13^{th}	2.833	2.900	3.000	3.000	885.000	P = 0.661	NO
BT-15^{th}	2.833	2.900	3.000	3.000	885.000	P = 0.661	NO

Table no. 03: Effect of treatment on burning within Group A and B.

There is a statistically significant difference on burning found in Group A and B on comparing different time points with BT vs 5^{th},7^{th}, 9^{th} 11^{th},13^{th},15^{th} day $P < 0.05$.

COMPARISON	q	P=<0.001	q	P<0.05
BT vs 1^{st}	0.000	NO	2.633	NO
BT vs 3^{rd}	3.700	NO	5.567	YES
BT vs 5^{th}	5.800	YES	10.633	YES
BT vs 7^{th}	10.700	YES	10.633	YES
BT vs 9^{th}	10.700	YES	10.633	YES
BT vs 11^{th}	10.700	YES	10.633	YES
BT vs 13^{th}	10.700	YES	10.633	YES
BT vs 15^{th}	10.700	YES	10.633	YES

Table no. 04: Effect of treatment on burning between Group A and B

There is statistically significant difference between Group A and Group B analysis on burning. By comparing mean value of Group A and Group B of different time points with BT. Group B is better than Group A. No difference noted on comparing with BT with 7^{th}, 9^{th}, 11^{th}, 13^{th} and 15^{th} day suggests both drugs take similar time for significant action.

	MEAN	MEDIAN	T	P	

GROUP	A	B	A	B	VALUE	VALUE	REMARKS
BT-1st	0.000	1.000	0.000	1.000	465.000	P =< 0.001	YES
BT-3rd	1.000	1.367	1.000	1.000	750.000	P = 0.015	YES
BT-5th	1.300	2.000	1.000	2.000	600.000	P = <0.001	YES
BT-7th	2.000	2.000	2.000	2.000	915.000	P = 0.994	NO
BT-9th	2.000	2.000	2.000	2.000	915.000	P = 0.994	NO
BT-11th	2.000	2.000	2.000	2.000	915.000	P = 0.994	NO
BT-13th	2.000	2.000	2.000	2.000	915.000	P = 0.994	NO
BT-15th	2.000	2.000	2.000	2.000	915.000	P = 0.994	NO

Table no. 05: Effect of treatment on length of wound within Group A and B.

There is a statistically significant difference on length of wound found in Group A and B on comparing different time points with BT vs 9th 11th,13th,15th day $P < 0.05$.

COMPARISON	q	P=<0.001	q	P<0.05
BT vs 1st	0.000	NO	0.000	NO
BT vs 3rd	0.000	NO	0.000	NO
BT vs 5th	0.000	NO	3.000	NO
BT vs 7th	2.700	NO	6.600	YES
BT vs 9th	6.000	YES	9.000	YES
BT vs 11th	9.000	YES	9.000	YES
BT vs 13th	9.000	YES	9.000	YES
BT vs 15th	9.000	YES	9.000	YES

Table no. 06: Effect of treatment on length of wound between Group A and B

There is statistically significant difference between Group A and Group B analysis on burning. By comparing mean value of Group A and Group B of different time points with BT. Group B is better than Group A. No difference noted on comparing with BT with 11th, 13th and 15th day suggests both drugs take similar time for significant action.

GROUP	MEAN		MEDIAN		T VALUE	P VALUE	REMARKS
	A	B	A	B			
BT-1st	0.000	0.000	0.000	0.000	915.000	P = 0.994	NO
BT-3rd	0.000	0.000	0.000	0.000	915.000	P = 0.994	NO
BT-5th	0.000	0.333	0.000	0.000	765.000	P = 0.026	YES
BT-7th	0.300	0.733	0.000	1.000	720.000	P = 0.004	YES
BT-9th	0.667	1.000	1.000	1.000	765.000	P = 0.026	YES
BT-11th	1.000	1.000	1.000	1.000	915.000	P = 0.994	NO
BT-13th	1.000	1.000	1.000	1.000	915.000	P = 0.994	NO
BT-15th	1.000	1.000	1.000	1.000	915.000	P = 0.994	NO

Table no. 07: Effect of treatment on breadth of wound within Group A and B.

There is a statistically significant difference on breadth of wound found in Group A and B on comparing different time points with BT vs 7th, 9th, 11th, 13th, 15th day $P < 0.05$.

COMPARISON	q	P=<0.001	q	P<0.05
BT vs 1st	0.000	NO	0.000	NO
BT vs 3rd	0.000	NO	0.000	NO
BT vs 5th	0.000	NO	6.000	YES
BT vs 7th	5.400	YES	6.000	YES
BT vs 9th	6.000	YES	9.000	YES
BT vs 11th	9.000	YES	9.000	YES
BT vs 13th	9.000	YES	9.000	YES
BT vs 15th	9.000	YES	9.000	YES

Table no. 08: Effect of treatment on breadth of wound between Group A and B

There is statistically significant difference between Group A and Group B analysis on breadth of wound. By comparing mean value of Group A and Group B of different time points with BT. Group B is better than Group A. No difference noted on comparing with BT with 1st, 3rd, 7th, 11th, 13th and 15th day suggests both drugs take similar time for significant action.

GROUP	MEAN		MEDIAN		T VALUE	P VALUE	REMARKS
	A	B	A	B			
BT-1st	0.000	0.000	0.000	0.000	915.000	P = 0.994	NO
BT-3rd	0.000	0.000	0.000	0.000	915.000	P = 0.994	NO
BT-5th	0.000	0.667	0.000	1.000	615.000	P = <0.001	YES
BT-7th	0.600	0.667	1.000	1.000	885.000	P = 0.662	NO
BT-9th	0.667	1.000	1.000	1.000	765.000	P = 0.026	YES
BT-11th	1.000	1.000	1.000	1.000	915.000	P = 0.994	NO
BT-13th	1.000	1.000	1.000	1.000	915.000	P = 0.994	NO
BT-15th	1.000	1.000	1.000	1.000	915.000	P = 0.994	NO

Table no. 09: Effect of treatment on depth of wound within Group A and B

There is a statistically significant difference on depth of wound found in Group A and B on comparing different time points with BT vs 7th, 9th,11th,13th,15th day P < 0.05

COMPARISON	q	P=<0.001	q	P<0.05
BT vs 1st	0.000	NO	0.000	NO
BT vs 3rd	0.000	NO	0.000	NO
BT vs 5th	0.000	NO	6.000	YES
BT vs 7th	6.000	YES	9.000	YES
BT vs 9th	9.000	YES	9.000	YES
BT vs 11th	9.000	YES	9.000	YES
BT vs 13th	9.000	TES	9.000	YES
BT vs 15th	9.000	YES	9.000	YES

Table no. 10: Effect of treatment on depth of wound between Group A and B

There is statistically significant difference between Group A and Group B analysis on breadth of wound. By comparing mean value of Group A and Group B of different time points with BT. Group B is better than Group A. No difference noted on comparing with BT with 1st, 3rd, 9th, 11th, 13th and 15th day suggests both drugs take similar time for significant action.

GROUP	MEAN		MEDIAN		T VALUE	P VALUE	REMARKS
	A	B	A	B			
BT-1st	0.000	0.000	0.000	0.000	915.000	P = 0.994	NO
BT-3rd	0.000	0.000	0.000	0.000	915.000	P = 0.994	NO
BT-5th	0.000	0.667	0.000	1.000	615.000	P <0.001	YES
BT-7th	0.667	1.000	1.000	1.000	765.000	P = 0.026	YES
BT-9th	1.000	1.000	1.000	1.000	915.000	P = 0.994	NO
BT-11th	1.000	1.000	1.000	1.000	915.000	P = 0.994	NO
BT-13th	1.000	1.000	1.000	1.000	915.000	P = 0.994	NO
BT-15th	1.000	1.000	1.000	1.000	915.000	P = 0.994	NO

Table no. 11: Effect of treatment on edema within Group A and B.

There is a no statistically significant difference on edema found in Group A and B on comparing different time points with BT P < 0.05

COMPARISON	q	P<0.05	q	P<0.05
BT vs 1st	0.000	NO	0.000	NO
BT vs 3rd	0.000	NO	0.000	NO
BT vs 5th	0.000	NO	0.000	NO

BT vs 7th	0.000	NO	0.000	NO
BT vs 9th	0.000	NO	0.000	NO
BT vs 11th	0.000	NO	0.000	NO
BT vs 13th	0.000	NO	0.000	NO
BT vs 15th	0.000	NO	0.000	NO

Table no. 12: Effect of treatment on edema between Group A and B

There is no statistically significant difference between Group A and Group B analysis on edema. By comparing mean value of Group A and Group B of different time points with BT. No difference noted on comparing with BT with different time points suggests both drugs take similar time for significant action.

GROUP	MEAN		MEDIAN		T VALUE	P VALUE	REMARKS
	A	B	A	B			
BT-1st	-1.000	-1.000	-1.000	-1.000	915.000	P = 0.994	NO
BT-3rd	-1.000	-1.000	-1.000	-1.000	915.000	P = 0.994	NO
BT-5th	-1.000	-0.333	-1.000	0.000	615.000	P =< 0.001	YES
BT-7th	-0.333	0.000	0.000	0.000	765.000	P = 0.026	YES
BT-9th	0.000	0.000	0.000	0.000	915.000	P = 0.994	NO
BT-11th	0.000	0.000	0.000	0.000	915.000	P = 0.994	NO
BT-13th	0.000	0.000	0.000	0.000	915.000	P = 0.994	NO
BT-15th	0.000	0.000	0.000	0.000	915.000	P = 0.994	NO

Table no. 13: Effect of treatment on time taken for healing between Group A and B

There is no statistically significant difference between Group A and Group B analysis on time taken for healing. By comparing mean value of Group A and Group B of different time points with BT. No difference noted on comparing with BT with different time points suggests both drugs take similar time for significant action.

GROUP	MEAN		MEDIAN		T VALUE	P VALUE	REMARKS
	A	B	A	B			
BT-1st	3.000	3.000	3.000	3.000	915.000	P = 0.994	NO
BT-3rd	3.000	3.000	3.000	3.000	915.000	P = 0.994	NO
BT-5th	3.000	3.000	3.000	3.000	915.000	P = 0.994	NO
BT-7th	3.000	3.000	3.000	3.000	915.000	P = 0.994	NO
BT-9th	3.000	3.000	3.000	3.000	915.000	P = 0.994	NO
BT-11th	3.000	3.000	3.000	3.000	915.000	P = 0.994	NO
BT-13th	3.000	3.000	3.000	3.000	915.000	P = 0.994	NO
BT-15th	3.000	3.000	3.000	3.000	915.000	P = 0.994	NO

Table no. 14: Effect of treatment on local rise of temperature within Group A and B.

There is a no statistically significant difference on local rise of temperature found in Group A and B on comparing different time points with BT $P < 0.05$

COMPARISON	q	P<0.05	q	P<0.05
BT vs 1st	0.000	NO	0.000	NO
BT vs 3rd	0.000	NO	0.000	NO
BT vs 5th	0.000	NO	0.000	NO
BT vs 7th	0.000	NO	0.000	NO
BT vs 9th	0.000	NO	0.000	NO
BT vs 11th	0.000	NO	0.000	NO
BT vs 13th	0.000	NO	0.000	NO
BT vs 15th	0.000	NO	0.000	NO

DISCUSSION

Discussion on Disease

"Vrana Gaatra Vichurnane, Vranayati Iti Vranaha" "Gaatra" means tissue (body tissue or part of body). "Vichurnane" means destruction, break, rupture and discontinuity (of the body or tissue). "The destruction / break / rupture / discontinuity of body tissue / part of body, is called Vrana. 28

Classification of vrana According to causes: Nija and Agantuja. Nija vranas can be further devided into, Aharaja Vrana and Viharaja Vrana. It is further classified into 16 subtypes- 15 Doshaja Prakaras and Shuddha Vrana.

Agantuja Vrana is classified in to 6 types by Acharya Sushrutha based on the type of wound caused by particular weapons and also as per site of injury. Again, classified according to Avastha, healing, prognosis.

Chikitsa done according to saptopakrama and Shashti upakrama. In modern can be corelated to wound or ulcer.

DISCUSSION ON RESULTS

A result has been drawn after statistical analysis in two sections as within group comparison i.e. effect of drug as before and after treatment. Between group comparison, to compare the efficacy of one drug over other.

The effect of the treatment was assessed as follows:

- Before and After Treatment was done by RM ANOVA on rank test.
- Comparison between the groups was done by the Mann-Whitney test.

1. Effect of treatment on pain:

There is a statistically significant difference on pain found in Group A and B on comparing different time points with BT vs 5th,7th, 9th 11th,13th,15th day $P < 0.05$. There is statistically significant difference between Group A and Group B analysis on pain. By comparing mean value of Group A and Group B of different time points with BT. Group B is better than Group A.

2. Effect of treatment on burning

There is a statistically significant difference on burning found in Group A and B on comparing different time points with BT vs 5th,7th, 9th 11th,13th,15th day $P < 0.05$. There is statistically significant difference between Group A and Group B analysis on burning. By comparing mean value of Group A and Group B of different time points with BT. Group B is better than Group A.

3. Effect of treatment on length of wound

There is a statistically significant difference on length of wound found in Group A and B on comparing different time points with BT vs 9th 11th,13th,15th day $P < 0.05$. There is statistically significant difference between Group A and Group B analysis on burning. By comparing mean value of Group A and Group B of different time points with BT. Group B is better than Group A.

4. Effect of treatment on breadth of wound within Group A

There is a statistically significant difference on breadth of wound found in Group A and B on comparing different time points with BT vs 7th, 9th, 11th, 13th, 15th day $P < 0.05$. There is statistically significant difference between Group A and Group B analysis on breadth of wound. By comparing mean value of Group A and Group B of different time points with BT. Group B is better than Group A.

5. Effect of treatment on depth of wound

There is a statistically significant difference on depth of wound found in Group A and B on comparing different time points with BT vs 7th, 9th,11th,13th,15th day $P < 0.05$ There is statistically significant difference between Group A and Group B analysis on breadth of wound. By comparing mean value of Group A and Group B of different time points with BT. Group B is better than Group A.

6. Effect of treatment on edema within Group A

There is a no statistically significant difference on edema found in Group A and B on comparing different time points with BT $P < 0.05$ There is no statistically significant difference between Group A and Group B analysis on edema. By comparing mean value of Group A and Group B of different time points with BT. Group B is better than Group A.

7. Effect of treatment on time taken for healing between Group A and B

There is no statistically significant difference between Group A and Group B analysis on time taken for healing. By comparing mean value of Group A and Group B of different time points with BT. No difference noted on comparing with BT with different time points suggests both drugs take similar time for significant action.

8. Effect of treatment on local rise of temperature within Group A

There is a no statistically significant difference on local rise of temperature found in Group A and B on comparing different time points with BT $P < 0.05$

DISCUSSION ON THE MODE OF ACTION OF THE DRUG

Hemigraphis alternata, commonly known as Red Ivy or Metallic Plant, is a medicinal plant used in Ayurveda and traditional medicine.

Rasa Panchaka

1. Rasa (Taste) – Primarily Tikta (Bitter) and Kashaya (Astringent).
2. Guna (Qualities) – Laghu (Light) and Ruksha (Dry).
3. Veerya (Potency) – Sheeta (Cooling).
4. Vipaka (post-digestive effect) – Katu (Pungent).
5. Prabhava (Special effect) – Known for its wound healing, anti-inflammatory, and anti-ulcer properties.

CONCLUSION

The conclusion was done based on literature, observation, and results obtained from the research work. Povidine ointment and vranaropini malahara both were effective in treating sadyovrana with statistically significant result of $P<0.05$. On comparison between 2 groups there is statistically significant difference in all assessment criteria except edema of wound and local rise in temperature which Group-B was more effective than Group-A.

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