

## EFFICACY OF JALAUKAVCHARANA, MARMA CHIKITSA AND ARKA TAILA IN DUSHTA VRANA (Non- Healing Wounds) - A COMPARATIVE CLINICAL STUDY

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### ABSTRACT

*Dusta Vranas* are a commonly occurring problem in this present era which is produced as a complication of pathological disease or due to trauma which at last causes a long agony to the patient. The issue of the management of *Dusta Vrana* with *Ayurveda* is one of the major areas of research and has come under increased scrutiny. In the present study *Arka Taila* alone and along with *Jalaukaavcharan* (Leech Therapy) and *Marma* Therapy is used to evaluate their efficacy in healing of *Vrana*.

In this study 30 patients fulfilling the diagnostic criteria of *Dusta Vrana* were selected from the O.P.D / I.P.D of Gurukul Campus Haridwar. UAU and were randomly divided into three groups A, B and C (10 patients per group), group "A" was treated with *Arka Taila*, in which *Arka* is the main ingredient, it was locally applied once daily for 60 days. group "B" was treated with *Arka Taila* and *Jalaukaavcharan* (Leech therapy), in this along with local application of *Taila*, *Jalauka* was applied in the vicinity to the site of *Vrana*. In group c along with *taila*, *Marma* stimulation of nearby *Marma* was done thrice daily. Significant result was found in all the three groups, we can conclude that combined effect of *Arka Taila* with *Jalaukaavcharan* and *Marma* therapy are much better.

**Keywords:** *Dusta Vranas*, *Arka Taila*, *Jalaukaavcharan*.

### INTRODUCTION

A *vrana* becomes *dushta* if it is not healed up for 1-2 months. There are many factors which convert a *vrana* into *dushtavrana* like nutritional deficiency, improper cleaning and dressing of wound, chronic illness etc.<sup>1</sup>

*Maharshi Sushruta* has mentioned *Jalaukaavcharan* (leech therapy) in parasurgical measures, and it is considered as one of the best para-surgical measure.<sup>2</sup> The saliva of *jalauka* contains various useful bio-

chemicals which possess different properties like anti-coagulants, vasodilators, anesthetics, anti-inflammatory etc. During the process of *Jalaukaavcharan*, it introduces its enzymes in the blood circulation thus helping in the process of wound healing.

*Marmas* are the vital points of our body and are 107 in number. They are considered as energy points in healing. Literally *Marma* means the points which by

hurting can be fatal/or causes deformity in an individual. But in *Marma* therapy we use these points for healing by properly stimulating or massaging them.<sup>3</sup>

Stimulation of *marma* points affects the *chakras* and *doshas*. These energy points profoundly affect the body, mind and spirit as well as facilitate the deepest levels of healing. It also stimulates the various organs and systems of the body thus helping in healing of wound.<sup>4</sup>

The main aim of wound healing is the formation of fine, minimal or no scar with least pain and complications. For successful achievement of the aim, a surgeon should have knowledge of all types of wounds and treatment at all stages of wound.

#### Aim and Objectives

1. To develop a cost-effective treatment for the management of *Dusta Vrana*.
2. To prepare *Arka Taila* and evaluate its efficacy in wound healing.
3. To evaluate the efficacy of *Jalaukavcharan* in wound healing.
4. To evaluate the efficacy of *Marma Chikitsa* in wound healing.
5. To document the changes on subjective parameters.

#### Materials and Methods

##### Selection of patients

1. 30 Patients of non-healing wound were selected from the O.P.D. / I.P.D. of the attached hospital of Uttarakhand Ayurved University, Gurukul Kangri Campus, Haridwar.
2. A detailed proforma was prepared for assessment. Trial drug was prepared in Hans Pharmacy Haridwar.

##### Inclusion criteria

3. The selection of patients was done based on signs and symptoms of *DustaVrana* (non-healing wound) described as per *Ayurvedic* and modern medical science.

##### Exclusion criteria

- Debilitating diseases like HIV, Hepatitis B & C, and malignancy.
- Open fractures burn and acute wound.
- Pregnancy.
- Persons not likely to co-operate with the trial regimen due to personal compulsions.

- Below 10 yrs and above 80 years patients were excluded from the study.

#### Sampling method

Random sampling method

#### Assessment criteria

- The efficacy of the therapy was assessed based on assessment criteria.
- For statistical analysis scoring was designed according to the severity of symptoms.

#### Overall effect of therapy

- Cured: 100% relief in symptoms.
- Marked improvement: 76-99% relief in symptoms.
- Moderate improvement: 51-75% relief in symptoms.
- Mild improvement: 26-50% relief in symptoms.
- Unchanged: Upto 25% relief in symptoms.

#### Group, dose and duration

- Group-A: Patients were treated with *Arka Taila* for local application (approx. 2-3 ml or according to the size of the wound) daily.
- Group-B: Patients were treated with *Arka Taila* and *Jalaukaavcharan*. *Jalaukaavcharan* was done every 7th day with daily application of *Arka Taila*.
- Group -C: Patients were treated with *Arka Taila* and *Marma chikitsa*, 3 times a day and 15-18 times stimulation in each sitting.

**Duration:** -2 Months

#### Follow-up of the treatment

Patients were asked to attend the O.P.D. for 1 month every week after completion of therapy for the follow up.

#### Statistical test

The data obtained based on observations were subjected to statistical analysis in terms of mean, standard deviation and standard error by applying the Wilcoxon test. For comparison of groups ANNOVA test was used. The results were interpreted at the level of

- $P < 0.001$  as highly significant
- $P < 0.05$  or  $P < 0.01$  as significant
- $P > 0.01$  as insignificant

#### Preparation of *ArkaTaila*

The contents of *ArkaTaila* are *Arka Patra* (*Calotropis procera*), *Haridra* (*Curcuma lon-*

ga) and *Sarshapa Taila* *Brassica campestris*).<sup>5</sup> *Arka Taila* was prepared by general method of preparation of *Taila Kalpana* till the achievement of *Kharapaka* stage. *Arka Taila* has *Katu* and *Tikta* *Ra-*  
*sa, Ruksha, Laghu, Tikshna* *Guna, Ushna*  
*Veerya, Katu* *Vipaka,* *and Kapha-*  
*Vatashamaka* properties.

**Source of Jaluka:** The *Jalaukas* were obtained from the Agra biologicals, Agra.

**Design of study:** The study was conducted on 30 diagnosed cases of *Dusta Vrana*. Patients were selected from OPD/IPD, Department of *Shalya tantra*, Gurukul Campus, Haridwar. They were randomly divided into 3 Groups with 10 patients in each group.

**Ethical clearance:** The study was cleared by the institutional ethics committee. Before starting the study, the written consent from each patient study was taken. For those patients who were unable to read or write consent of their relative was taken. Patients were free to withdraw their name from the study at any time without giving any reason.

#### Observations and Results

1. Maximum patient was of 31-40 year of age group (30%).
2. Maximum patient was male (73.33%).
3. Maximum patient was of business occupation (33.33%).
4. 50% patient of each was literate and illiterate.

5. Maximum patient was married (90).
6. Maximum patient was of Hindu religion (90%).
7. Maximum patient was of middle-class status (53.33%).
8. Maximum patient had *Dusta Vrana* on their lower limb (96.66%).
9. Maximum patient showed sloping edge (63.33).
10. Maximum patient has purulent discharge (26.47%).
11. Maximum patient had glossy edematous surrounding skin (33.33%).
12. All patients had *Nija Vrana* (100%).
13. Maximum patient had other diseases associated with *Vrana* (80%).
14. Maximum patient had *samayaka* bowel history (83.33%).
15. Maximum patient had *samayaka* micturition History (86.66%).
16. Maximum patient had *samshanaahara*.
17. Maximum patient was vegetarian (70%).
18. Maximum patient was labor (43.33%).
19. Maximum patient was of *kaphaja* and *vatika prakriti* (36.66%).
20. Maximum patient was of *pravara sara* (40%).
21. Maximum patient was of *samaagni* (33.33%).
22. Maximum patient was of *aanupdesha* (73.33%).

#### Effect of therapy

**Table 1:** Showing the effect of *Arka Taila* in Group A

Symptoms	Mean score BT AT	MEAN Diff	% effect	SD	SE	W Value	N	P value	LOS	
Size	1.9	0.5	2.1	74	0.9661	0.3055	45	10	0.0039	S
Tenderness	1.7	0.2	1.6	88	0.8660	0.2887	36	8	0.0078	VS
Color	2	0.1	2	95	0.7379	0.2333	55	10	0.0020	VS
Margin/surface	2.1	0.1	2.1	95	0.6667	0.2108	55	10	0.0020	VS
Base/floor	2	0.2	2.2	90	0.9189	0.2906	45	9	0.0039	VS
Swelling	1.5	0.1	2.0	93	0.5774	0.2182	28	7	0.0156	S
Discharge	2.4	0.3	2.3	87	0.5000	0.1607	45	9	0.0039	VS
Unhealthy granulation tissue	1.5	0.1	2.0	93	0.5774	0.2182	28	7	0.0156	S
Pain	2.1	0.3	2.6	86	0.5000	0.1667	45	9	0.0020	VS
Burning sensation	1.9	0.3	2.2	84	0.4880	0.2211	28	7	0.0020	S
Itching sensation	1.5	0.1	2.0	93	1.5774	0.2182	28	7	0.0156	S

**SD:** standard deviation, **SE:** standard error, **W value:** wilcoxon value, **S:** significant, **VS:** very significant, **NS:** not significant, **N:** No. of patients, **LOS:** level of significance.

**In Group A:-** The color, margin/surface was reduced 95% in *Arka Taila* treated group which was found statistically very significant. Swelling, unhealthy granulation tissue, itching was reduced 93% which was found statistically significant. Base and floor were achieved 90% which was found 90% statistically significant. Tenderness

was reduced 88% which was found statistically very significant. Discharge, pain and burning sensation was reduced 87%, 86% and 84% respectively which was found statistically very significant. Size was reduced 74% which was found statistically significant (Shown in table 1)

**Table 2:** Showing the effect of *ArkaTaila* and *jalaukaavcharan* in Group B

Symptoms	Mean score BT AT		MEAN Diff	% Effect	SD	SE	W value	P value	N	LOS
Size	1.9	0.3	1.9	84	0.6992	0.2211	55	0.0020	10	VS
Tenderness	1.8	0.1	1.8	94	0.6749	0.2134	55	0.0020	10	VS
Color	2.3	0.1	2.3	95	0.6325	0.2000	55	0.0020	10	VS
Margin/surfaces	1.9	0.1	1.9	95	0.9189	0.2906	55	0.0020	10	VS
Base/floor	2.1	0.3	2.1	86	0.7888	0.2494	55	0.0020	10	VS
Swelling	1.4	0.1	2.2	93	0.6901	0.200	28	0.0156	7	S
Discharge	1.8	0.1	1.8	94	0.6749	0.2134	55	0.0020	10	VS
Unhealthy granulation tissue	2	0.1	2.1	95	0.7817	0.2606	45	0.0039	9	VS
Pain	2.6	0.2	2.6	92	0.5000	0.1666	45	0.0039	9	VS
Burning sensation	2	0.1	2.2	95	0.4880	0.1844	28	0.0156	8	S
Itching sensation	1.9	0.1	1.9	95	0.9189	0.2906	55	0.0020	10	VS

**SD:** standard deviation, **SE:** standard error, **W value:** wilcoxon value, **S:** Significant, **VS:** very significant, **NS:** not significant, **N:** No. of patients, **LOS:** level of significance

**In Group B:-** The margin, color, unhealthy granulation tissue, burning sensation and itching sensation was decreased 95% in *ArkaTaila* and leech therapy treated group which was statistically very significant except burning sensation which was statistically significant. Tenderness and discharge

were reduced up to 94% which was statistically very significant. The swelling was improved up to 93% and statistically significant. Whereas pain, floor and size were reduced up to 92%, 86% and 84% respectively this was very significant statistically. (Shown in table 2)

**Table 3:** Showing the effect of *ArkaTaila* and *marma chikitsa* in Group C

Symptoms	Mean score BT AT		MEAN diff	% effect	SD	SE	W Value	P value	N	LOS
Size	2.2	0.2	2.2	91	0.9428	0.2981	55	0.0020	10	VS
Tenderness	1.7	0.2	1.8	88	0.6409	0.2266	36	0.0078	8	VS
Color	1.5	0.1	2.0	93	0.5774	0.2182	28	0.0156	7	S
Margin/surface	1.5	0.1	2.0	93	0.5774	0.2182	28	0.0156	7	S
Base/floor	2.6	0.1	2.6	96	0.7071	0.2236	55	0.0020	10	VS
Swelling	1.5	0.1	2.0	93	0.5774	0.2182	28	0.0156	7	S
Discharge	2.1	0.4	2.1	80	0.78817	0.2606	45	0.0039	9	VS
Unhealthy granulation tissue	1.5	0.1	2.0	93	0.5774	0.2182	28	0.0156	7	S
Pain	2	0.3	2.3	85	0.9161	0.3239	36	0.0078	8	VS
Burning sensation	1.5	0.6	1.4	80	0.5345	0.2020	28	0.0156	7	S
Itching sensation	1.5	0.1	2.0	93	0.5774	0.2182	28	0.0156	7	S

**SD:** standard deviation, **SE:** standard error, **W value:** wilcoxon value, **S:** significant, **VS:** very significant, **NS:** not significant, **N:** No. of patients, **LOS:** level of significance

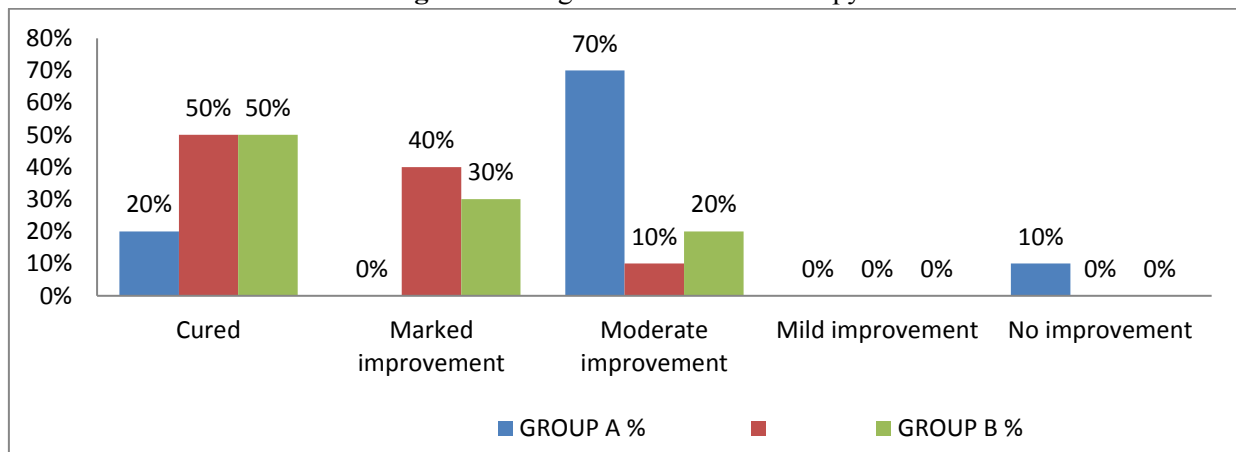
**In Group C:-** The table shows that the base/floor was decreased 96% in *Arkataila* plus *Marma* therapy treated group which was statistically very significant. Itching sensation, unhealthy granulation tissue, swelling, margin, color was reduced up to 93% which was found statistically signifi-

cant. The size, tenderness, pain, discharge was improved 91%, 88%, 85%, 80% respectively which was statistically found very significant. Whereas burning sensation was reduced up to 80% which was significant statistically. (Shown in table 3)

**Pictures:** pre and post treatment wound is as follows



**Fig 1:** Showing overall effect of therapy



Based on the specific scoring pattern adopted, the total effect of therapy had been carried out which shows that in Group A 20% patient were cured, 70% patient had moderate improvement while 10% patient had No improvement. In Group B 50% patients were cured, 40% had marked improvement while 10% showed moderate improvement. In Group C 50% patients were cured, 30% patient had marked improvement while 20% patient had moderate improvement. (Shown in fig.1)

## DISCUSSION

### Probable Mode of Action of Arka Taila

1. *Vatahara (Snigdha, Guru-Guna), Shothahara, Dahashamana (SheetaGuna, Kashaya Rasa)* properties reduced the inflammatory condition and thus relieved the pain / tenderness. *Shothahara* property reduced the swelling in the *Vrana*.<sup>5</sup>
2. *Sthambhana, Shoshana Karma of Tikta Rasa and VishadaGuna* with *Kledahara, Raktasthambhana* and *Chhedana* activities followed by *Krimighna Karma* led to prevention of discharge, slough and secretions.<sup>6</sup>
3. Unhealthy granulation - *Lekhana, Kledahara, Chhedana, Raktashodhaka* actions played an important role in scraping out the debris and slough.
4. *Prinana, Dhaturvardhana, Poshana-* allocations of *MadhuraRasa* helped to reduce the wound size by promoting healing and the rate of contraction of the local tissue.
5. *RaktaShodhana (Tikta Rasa) Pittashamana, Varnya, rakta Prasadana* actions improved the wound colour by improving the local circulation. Infection- was prevented by the *Krimighna, Vishaghna* and *Rakshoghna* properties of the drug.<sup>7</sup>

By virtue of the above said properties, ultimately normal condition of the scar tissue i.e. less size of scar, near to normal skin pigmentation, smooth, even regular surface was observed. *Varnya, Twaka Prasadana, Raktaprasadana* actions of *ArkaTaila* leads to colour like the skin pigmentation.

### Probable Mode of Action of Jalaukaavcharan

1. After leech application expulsion of impure blood takes place due to which local vitiated *Doshas* (toxins and unwanted metabolites) are

removed.<sup>8</sup>

2. *Vrana Ropana* effect: Leech application facilitates fresh blood supply and promotes formation of "healthy tissues".

Salivary gland secretion has anti-edematous, bacteriostatic, analgesic effect, it possesses resolving activity, eliminates micro-circulation disorders, restores damaged vascular permeability of tissue and oxygen, eliminates hypoxia, reduces B.P, increases immune system activity.

### Modern Concept

1. Leech application improves blood circulation and reduces congestion due to presence of carboxypeptidase 'A' inhibitors, histamine like substances and acetylcholine, thus it corrects micropathy.
2. Leech application has peripheral vasodilatation effect due to presence of vasodilators constituent in the saliva which improves blood circulation and corrects ischemia.
3. It has anti-inflammatory action on nerves due to presence of substance like bdellins and Eglin's in the saliva hence corrects neuropathy.

### Probable Mode of Action of Marma Chikitsa

Stimulation of *marma* produces secretion of number of prostaglandin inhibitors, endorphins, interferon and other opioids-like substances which helps in wound healing.

### Role of Marma Therapy<sup>9</sup>

1. Removes blocks in energy channels (*srotas*).
2. Pacifies *doshas* and bringing them to their normal path (especially *vyanyayu* which controls autonomic nervous system).
3. Creates physical, mental and emotional flexibility.
4. Creates an opportunity to experience powerful and dynamic transformation at physical, mental, emotional and spiritual level by building a positive link with the unconscious mind.

## CONCLUSION

On the basis of clinical observations it can be concluded that the trial drug in Group B (*ArkaTaila* and *jalauka*) and Group 'C' (*ArkaTaila* and *marmachikitsa*) showed better results than Group 'A' as *ArkaTaila* and *jalauka* together possess analgesic, anti-inflammatory and anti-bacterial properties. While stimulation of *marma* has helped in healing,



there are no unwanted effects found during treatment. Together effects of the therapies were found better in the management of *DustaVrana*. The present research work was aimed to find out the effective therapy for *DustaVrana* with the help of *Ayurvedic* procedures. Though, the results are very good, but further study on large number of patients with longer duration of therapy is needed to achieve a definite conclusion.

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