



## Research Article

**TO EVALUATE THE EFFECT OF YASHTI-MADHU-GHRITA APPLICATION IN POST-OPERATIVE MANAGEMENT OF AGNIDAGDHA VRANA IN ARSHAS****Mayur V. Shiralkar<sup>1</sup>, Devata M. Shiralkar<sup>2</sup>, Shende Krushnadev<sup>3\*</sup>, Vishal Tamhane<sup>4</sup>, Rupesh Wagh<sup>5</sup>**<sup>1</sup>Associate. Professor, Dept. of Shalaky Tantra, Dr. D.Y. Patil College of Ayurved, Pimpri, Pune, M.S., India.<sup>2</sup>Associate. Professor, Dept. of Shalya Tantra, K.P.S.V.S. College of Ayurved, Manavi, Karnataka, India.<sup>3</sup>Associate. Professor, Dept. of Kayachikitsa Dr.D.Y. Patil Ayurved College, Pune, M.S. India.<sup>4</sup>Associate. Professor, Dept. of Shalya Tantra, Ashwin Rural Ayurved College, Manchi Hill, India.<sup>5</sup>Associate. Professor, Dept. of Shalya Tantra, SMBT Ayurvedic Medical College, Nandi Hills, Igatpuri, Nasik, M.S., India.**KEYWORDS:** *Arsha, Agnidagdha Vrana, Yashti-Madhu-Ghrita, Post-operative management.***ABSTRACT****Aim:** To evaluate the effect of *Yashti-Madhu-Ghrita* application in post-operative management of *Agnidagdha Vrana* in *Arsha*.**Objective:** The effect of *Yashti-Madhu-Ghrita* in the post operative management of *Agnidagdha Vrana* in *Arsha* with regards to see its effect in pain, burning sensation & wound healing.**Method:** It is an observational study of selected 20 patients with pre test and post- test design**Types of study:** Clinical Study**Assessment criteria:** criteria were used to assess the *Vedana, Daha, Vrana Varna, Vrana Srava, and Vrana Akruiti*.**Follow Up:** is done on post – operative 1<sup>st</sup> day, 2<sup>nd</sup>, 3<sup>rd</sup> day, 7<sup>th</sup> day, 14<sup>th</sup> day, 21<sup>st</sup> day, 28<sup>th</sup> day, 60<sup>th</sup> day and 90<sup>th</sup> day to assess the pain (both the pathological and procedure induced), wound healing, relief from the associated complaint, complications of *Agnikarma* This was noted with the help of the self- gradation of the assessment criteria in the proforma of case sheet of *Arsha* designed for the study.**Results:** *Yashti-Madhu-Ghrita* application in post-operative management of *Agnidagdha Vrana* in *Arsha* showed a significant result.**Statistical Analysis:** The Statistical Analysis reveals that *Yashti-Madhu-Ghrita* application is effective in post-operative management of *Agnidagdha Vrana* in *Arsha*.**Conclusion:** *Yashti-Madhu-Ghrita* application is effective in post-operative management of *Agnidagdha Vrana* in *Arsha*.**\*Address for correspondence****Dr. Shende Krushnadev Laxman**

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**INTRODUCTION**

The disease that is troubling the human beings since the time immemorial is the *Arsha* because of its manifestation at the *Guda Bhaga*, the *Moola* of the *Shareera*.<sup>1</sup> The *Chirakari Vyadhi* because of the *Mamsapradooshana* presents with the *Pratyatma Lakshana* of *Kilaka* or *Ankura* at the *Guda Bhaga* when it becomes *Drushya* (visible). The classical approach towards the *Arsha* treatment is the correction of the *Agni (Pachakagni)* and *Vatanulomana* along with the removal of the *Vyakta Ankura* either by *Shastra, Kshara* or *Agnikarma*.<sup>2</sup> The *Bheshaja Chikitsa* is more concerned with the correction / removal of the *Sannikrushta Nidana* i.e., vitiated *Dosha* and *Agnimandhya*. But the other three modalities concerned with the removal of the *Ankura* have got their specific indications of time and type of *Ankura*. *Agnikarma* is one of the important modality among these three.

As the use and importance of *Agnikarma* is increasing day by day, its post-operative management is also becoming important. The patient suffers from burning sensation and pain at the site of *Agnikarma*. Hence there is a need to pay special attention towards the post-operative management of *Agnidagdha Vrana*. *Yashti-Madhu-Ghrita* is one of the preparation mentioned in our classics for effective control of pain and burning sensation of *Agnidagdha Vrana*. The contents of *Yashti-Madhu-Ghrita* are safe and easily available. So the outcome of the clinical study on selected 20 patients of *Agnidagdha Vrana* in *Arsha* treated with *Yashti-Madhu-Ghrita* is compiled in the form of this dissertation with the following sections, to give complete picture of the study.

## Aim & Objective

**Aim:** To evaluate the effect of *Yashti-Madhu-Ghrita* application in post-operative management of *Agnidagdha Vrana* in *Arsha*.

## Objectives

The effect of *Yashti-Madhu-Ghrita* in the post operative management of *Agnidagdha Vrana* in *Arsha* with regards to see its effect in pain, burning sensation & wound healing.

## Materials and Methods

Among the 4 fold treatment of the *Arsha*, the *Agnikarma* is one. As the use and importance of *Agnikarma* is increasing day by day, its post-operative management is also becoming important. The patient suffers from burning sensation and pain at the site of *Agnikarma*. Hence there is a need to pay special attention towards the post-operative management of *Agnidagdha Vrana*. Hence the study is planned to assess the effect of *Yastimadhu Ghrita* application in the post operative management of *Agnidagdha Vrana* in *Arsha*. So before taking up the clinical study, the thorough evaluation is made regarding the study design, selection of patients depending upon the inclusion / exclusion criteria; the instrument to be used for and the criteria to be taken up to assess the effect of therapy as following.

**Study design:** It is an observational study of selected 20 patients with pre test and post- test design.

**Source of data:** Patients who are treated by *Agnikarma* in *Arsha* will be selected from the in-patient and out-patient department of P.G. Studies in Shalya Tantra, S.D.M. College of Ayurveda & Hospital, Hassan.

## Inclusion criteria

1. Patients that are treated with *Agnikarma* in *Arsha*.
2. Patients having symptoms like *Daha, Vedana*.

## Exclusion criteria

- 1) *Plusta Dagdha*
- 2) *Durdagdha*
- 3) *Atidagdha*
- 4) *Sheeta Dagdha*

**Diagnostic criteria:** All the wounds formed due to thermal cauterization in *Arsha* and patient having symptom like *Daha, Vedana*.

**Examination:** Each case was thoroughly examined and investigated by detailed proforma designed for the present clinical study on *Arsha*. Each patient was examined under the following headings.

**1. History of the Patient:** Complete history of the patients with presenting complaints like discharge, pain onset, and duration and bowel habit was noted. History of associated diseases of tuberculosis, diabetes mellitus, cardiac disease, malignancy, chronic renal failure etc was tried to trace out, to exclude the conditions from the present study. History of previous treatment

particularly previous surgery, number of operation, type of operation and also family history, occupation, personal history and dietic habits were taken into consideration to relation to the occupation, recurrence of the disease and habit etc. assess the incidence of its relation to the occupation, habit etc.

**2. Systemic examination:** Each patient was examined systematically under different systems like digestive, cardiovascular, respiratory, nervous and genito-urinary. If any system was found diseased, then the specific investigations were used to confirm, so as to assess whether it falls in inclusion criteria / exclusion criteria.

**Local examination:** It was done under following headings:

- a) Inspection:** First patient was made to lie down in lithotomy position. After this a detailed examination of the wound was carried out and the measurements and findings were noted on the case paper.
- b) Palpation:** The palpation of the wound was done to assess local temperature, tenderness.
- c) Digital rectal examination** – The tone of sphincter, tenderness noted by digital examination and are documented.
- d) Proctoscopy:** Presence or absence of internal pile masses and their nature, growth or ulcer, condition of rectal mucosa, hypertrophied anal papillae etc were noted, to take appropriate measure.

## Investigation

- a) Routine:** Blood for Total count, Differential count, Erythrocyte sedimentation rate, Hemoglobin percentage, Random blood sugar, Bleeding time, Clotting time, Blood urea, Urine routine and microscopy, stool for ova & cyst and were carried out to know any infection and systemic diseases.
- b) Specific:** The VDRL, Culture & Sensitivity of wound discharge & Histo-pathological examination of wound used only when required.

## Materials:

- 1) Anorectal examination table
- 2) Torch
- 3) Sterile cotton gauze pieces
- 4) Tray with sterile gloves
- 5) *Ghrita*
- 6) *Madhu*
- 7) *Yashtimadhuka choorna*
- 8) Kidney Tray

## Methodology

- Patient was put into lithotomy position
- Then the wound was cleaned using sterile water and gauze.
- The *Ghrita* & honey was took in equal quantity in Kidney Tray & mixed.

-The application of that mixture over wound was done.  
 -The *Yashtimadhu choorna* was mixed in *Ghritha*.  
 -Now formed paste was applied over the wound.  
 -The wound was then covered with sterile gauze.

All the patients were advised to follow the following treatment.

**1) Ushnodaka Awagaha (Hot sitz bath):** Patients were advised to have hot sitz bath after defecation. It keeps wound clean as well as reduces pain and inflammation.

**2) Shatsakara Churna:** It was given at bed time in all chronic constipated patients. This induces clear movement of the bowels early next morning (5gm HS).

**3) Ambulation of the patient:** Patients were allowed to do normal routine works.

**4) Diet:** High nutritional light diet, green leafy vegetables, fruits, *Takra Sevana* and *Ushna Jala Pana*.

**5) Avoid:** Consumption excessive use of coffee, tea and alcohol, spicy fried food, constipating diet, riding, cycling, prolonged sitting, excessive indulgence in coitus etc.

**Follow up:** is done on post – operative 1<sup>st</sup> day, 2<sup>nd</sup>, 3<sup>rd</sup> day, 7<sup>th</sup> day, 14<sup>th</sup> day, 21<sup>st</sup> day, 28<sup>th</sup> day, 60<sup>th</sup> day and 90<sup>th</sup> day to assess the pain (both the pathological and procedure induced), wound healing, relief from the associated complaint, complications of *Agnikarma*. This was noted with the help of the self- gradation of the assessment criteria in the proforma of case sheet of Arsha designed for the study.

**Assessment criteria:** The following criteria were used to assess the *Vedana*, *Daha*, *Vrana Varna*, *Vrana Srava*, and *Vrana Akruti*.

**Vedana ( pain)**

No pain = 0  
 Pain relived without using analgesics = 1  
 Pain relived with using analgesics = 2  
 Pain not relived even after using analgesics = 3

**Daha**

No *Daha* = 0  
*Daha* relived without using analgesics = 1  
*Daha* relived with using analgesics = 2  
*Daha* not relived even after using analgesics = 3

**Vrana Varna**

Skin colour = 0  
 Pale pink granulation = 1  
 Red granulation = 2  
 Blackish white / grey = 3

**Vrana Srava**

No discharge = 0  
 Serous discharge = 1  
 Mucous discharge = 2  
 Mucopurulent discharge = 3

**Vrana Akruti**

Healed *Vrana* = 0  
*Vrana* within 1 cm. = 1  
*Vrana* within 1-2 cm. = 2  
*Vrana* within 2- 3 cm. = 3

Total duration of the study was 3 months that included the total duration taken for healing of post operative wound and followed up on 60<sup>th</sup> and 90<sup>th</sup> day to note if any problem was there.

**Overall effect of therapy**

Complete remission= Reduction in all 5 symptoms  
 Marked improvement = Reduction in 4 symptoms  
 Moderate improvement = Reduction in 3 symptoms  
 Mild improvement = Reduction in 1or 2 symptoms  
 Unchanged = Not a single symptom reduce

**Observation and Results**

The clinical study of *Post operative management of Agnidagdha Vrana in Arsha with Yashti-Madhu-Ghritha* was carried out on the 20 patients. The observation recorded in all the 20 patients of *Agnidagdha Vrana* in *Arsha* pertaining to their general data such as age, sex, economical status, *Prakruti*; signs and symptoms like *Vedana*, *Varna*, *Srava*, *Daha*, *Akruti* etc, are being presented as hereunder in the tabular forms along with brief description of each finding. Thereafter the effects of the treatment on the signs and symptoms of the patients will be presented.

**Table 1: Distribution of 20 patients on the Basis of Age**

Age group (in Years)	Number of patients	Percentage
10-20	01	5%
21-30	11	55%
31-40	03	15%
41-50	05	25%

**Table 2: Distribution of 20 patients on the Basis of Sex**

Sex group	Number of patients	Percentage
Male	13	65%
Female	07	35%

**Table 3: Distribution of 20 patients on the basis of religion**

Religion	Number of patients	Percentage
Hindu	19	95%
Muslim	01	05%

**Table 4: Distribution of 20 patients on the Basis of Prakruti**

Prakruti	Number of patients	Percentage
Vatapittaja	05	25%
Vatakaphaja	08	40%
Kaphapittaja	07	35%

**Table 5: Distribution of 20 patients on the Basis of Economical status**

Economical status	Number of patients	Percentage
Low income	05	25%
Middle income	12	60%
High income	03	15%

**Table 6: Distribution of 20 patients on the Basis of Nature of Work**

Nature of work	Number of patients	Percentage
Sedentary	04	20%
Moderate	09	45%
Strenuous	07	35%

**Table 7: Distribution of 20 patients on the Basis of Food Habit**

Food habit	Number of patients	Percentage
Vegetarian	06	30%
Mixed	14	70%

**Table 8: Distribution of 20 patients on the Basis of Bowel Habit**

Bowel habit	Number of patients	Percentage
Constipation	05	25%
Pain & burning after defecation	08	40%
Burning sensation & mixed with blood	07	35%

**Table 9: Distribution of 20 patients on the Basis of No of Vrana**

Number of Vrana	Number of patients	Percentage
One	07	35%
Two	07	35%
Three	05	25%
Four	01	05%

**Table 10: Severity of Vedana Reported by 20 Patients**

Grades of Vedana	No of patients	Percentage
Grade 0	00	00
Grade1	0	00
Grade2	15	75
Grade3	05	25

**Table 11: Vikriti of Varna Recorded in 20 Patients**

Grades of Varna	No of patients	Percentage
Grade 0	00	00
Grade1	00	00
Grade2	00	00
Grade3	20	100

**Table 12: Severity of Srava Reported by 20 Patients**

Grades of Vedana	No of patients	Percentage
Grade0	02	10
Grade1	18	90
Grade2	00	00
Grade3	00	00

**Table 13: Severity of *Daha* Reported by 20 Patients**

Grades of <i>Daha</i>	No of patients	Percentage
Grade 0	00	00
Grade 1	00	00
Grade 2	07	35
Grade 3	13	65

**Table 14: *Akruti* (in Grade) of *Vrana* Recorded by 20 Patients**

Grades of <i>Akruti</i>	No of patients	Percentage
Grade 0	00	00
Grade1	00	00
Grade2	14	70
Grade3	06	30

**RESULTS**

**Effect of *Yashti-Madhu-Ghrita* in Healing of *Agnidagdha Vrana* of *Arsha*:** 20 patients of *Arsha* were treated with *Agnikarma* and the wounds thus produced were treated with local application of *Yashti-Mdhu-Ghrita* twice a day to see its effect on the wound healing. The effect on various parameters recorded during this study is being presented under the separate headings.

**Table 15: Showing the course of *Vedana* in 20 patients of *Agnidagdha Vrana***

Post op. day	Mean score	Percentage	S.D (±)	S.E (±)	't' Value	'p' Value
Procedure day	2.25	-	-	-	-	-
1 <sup>st</sup> day	2.2	2.22	0.22	0.05	1	>0.01
3 <sup>rd</sup> day	1.75	22.22	0.51	0.11	4.36	<0.001
7 <sup>th</sup> day	1.1	51.11	0.67	0.15	7.67	<0.001
14 <sup>th</sup> day	0.8	64.44	0.51	0.11	12.70	<0.001
21 <sup>st</sup> day	0.2	91.11	0.39	0.09	23.27	<0.001
28 <sup>th</sup> day	0.05	97.78	0.41	0.09	23.97	<0.001

**Effect on *Vedana*:** Table 15 shows the relief in the intensity of the pain provided by the procedure. The initial mean of pain was 2.25, which after the one day of the treatment decreased to the mean score of 2.2 with 2.22% of relief. After the 3 days of the application of *Yashti-Madhu Ghrita*, the pain further relieved to 22.22%, which was statistically highly significant ( $p < 0.001$ ). After the one week of the application the patient got 51.11% of relief. After 14 day of the treatment the patient got 64.44% of relief, on 21<sup>st</sup> day 91.11% of relief and on 28<sup>th</sup> day 97.78 % of relief was got.

**Table 16: Showing the changes of the *Vrana Varna* (wound colour) in *Agnidagdha Vrana***

Post op. day	Mean score	Change Percentage	S.D(±)	S.E(±)	't' Value	'p' Value
Procedure day	3.0	-	-	-	-	-
1 <sup>st</sup> day	3.0	0	0	0	0	0
3 <sup>rd</sup> day	2.05	48.78	0.22	0.05	19	<0.001
7 <sup>th</sup> day	1.55	51.11	0.51	0.11	12.70	<0.001
14 <sup>th</sup> day	0.75	75	0.55	0.12	18.29	<0.001
21 <sup>st</sup> day	0.25	91.66	0.44	0.10	27.68	<0.001
28 <sup>th</sup> day	0.05	98.33	0.22	0.05	59	<0.001

**Effect on *Varna*:** Table 16 shows that the change of *Vrana Varna*. The initial mean of *Vrana Varna* was 3 and there was no change of mean seen after one day of treatment. 3 day after treatment 48.78% relief was observed. Similarly after 7 day 51.11 %, 14 day 75%, 21 day 91.66% and after 28 day 98.33 % relief was observed which was statistically highly significant at  $P < 0.001$ .

**Table 17: Showing the changes in the *Vrana Srava* in *Agnidagdha Vrana***

Post op. day	Mean score	Percentage	S.D (±)	S.E (±)	't' Value	'p' Value
Procedure day	1	-	-	-	-	-
1 <sup>st</sup> day	1.85	15	0.37	0.08	10.38	<0.001
3 <sup>rd</sup> day	1.55	45	0.51	0.11	4.82	<0.001
7 <sup>th</sup> day	0.90	70	0.47	0.11	2.85	<0.01
14 <sup>th</sup> day	0.30	30	0.47	0.11	6.66	<0.001
21 <sup>st</sup> day	00	100	0.00	0.00	0.00	0

**Effect on Srava:** Table 17 shows the changes in the wound discharge after the treatment. The wound which was dry immediately after the procedure presents with the serous discharge after the 1 day which has got a mean score of 1.85, which is statistically insignificant. After the 3 days of the treatment the mean score was 1.55 and after 7 day it was 0.90. 30% of relief got 14 day after treatment and 100 % relief was observed after 21 day.

**Table 18: Showing the course of *Daha* in 20 patients of *Agnidagdha Vrana***

Post op. day	Mean score	Change Percentage	S.D(±)	S.E(±)	't' Value	'p' Value
Procedure day	2.65	-	-	-	-	-
1 <sup>st</sup> day	2.25	15.09	0.50	0.11	3.56	>0.001
3 <sup>rd</sup> day	1.35	49.05	0.57	0.13	10.18	<0.001
7 <sup>th</sup> day	0.45	83	0.52	0.12	18.81	<0.001
14 <sup>th</sup> day	0.05	98.11	0.50	0.11	23.13	<0.001

**Effect on *Daha*:** Table 18 shows the change in the intensity of the *Daha* provided by the procedure. The *Daha* on the procedure day with a mean score of 2.65 has noticed a little decrease with the mean score being 2.25 on the first post-operative day by 15.09% of relief. After 3 days of treatment the *Daha* further relieved by 49.05%, which was statistically significant ( $p < 0.001$ ). After 7 day of the treatment the patient got 83% of relief from the *Daha* and after 14 day 98.11% of relief got from *Daha*.

**Table 19: Showing the course of *Akruti* in 20 patients of *Agnidagdha Vrana***

Post op. day	Mean score	Change Percentage	S.D(±)	S.E(±)	't' Value	'p' Value
Proced. day	2.3	-	-	-	-	-
1 <sup>st</sup> day	2.3	0	0	0	0	>0.50
3 <sup>rd</sup> day	2.1	8.69	0.41	0.09	2.18	<0.050
7 <sup>th</sup> day	1.25	45.65	0.22	0.05	21	<0.001
14 <sup>th</sup> day	0.9	60.68	0.50	0.11	12.46	<0.001
21 <sup>st</sup> day	0.25	89.13	0.39	0.09	23.27	<0.001
28 <sup>th</sup> day	0.05	97.83	0.44	0.10	22.65	<0.001

**Effect on *Akruti*:** Table 19 shows the change in the *Akruti* (size) of *Vrana*. The *Akruti* on the day of the procedure with a mean score of 2.3 has noticed a little decrease with the mean score being 2.1 on the third day by 8.69% of relief. After 7 day, the change in *Akruti* was by 45.65%, which was statistically significant ( $p < 0.001$ ). 14 day after the treatment the change in *Akruti* was found to be 60.68%, 21 day the *Akruti* change was noticed by 89.13% and after 28 day it was 97.83 %.

**Table 20: Showing the Overall Effect of Treatment**

Improvement	1st Day		3rd Day		7th Day		14th Day		21st Day		28th Day		60th Day	
	No. of Patients	%	No. of Patients	%	No. of Patients	%	No. of Patients	%	No. of Patients	%	No. of Patients	%	No. of Patients	%
Complete Remission	0	0	0	0	0	0	5	25	15	75	19	95	20	100
Marked Improvement	0	0	0	0	0	0	1	5	0	0	0	0	0	0
Moderate Improvement	0	0	0	0	4	20	1	5	0	0	0	0	0	0
Mild Improvement	0	0	2	10	8	40	12	60	5	25	1	5	0	0
Unchanged	20	100	8	90	8	40	1	5	0	0	0	0	0	0

**Overall effect of treatment:** Table 20 shows the overall effect of the treatment. On the first day the result is unchanged. After 3 day 10 % patients shows mild improvement and 90% are unchanged. 7 day after the treatment the results observed are, 20 % moderate improvement, 40 % mild improvement and 40 % are unchanged. The complete remission was observed in 25 % of the patients, marked improvement in 5 % patient, moderate in 5 %, mild in 60 % and the improvement is unchanged in 5 % patient after the 14<sup>th</sup> day. 75% patients got complete remission and 25 % patients shows mild improvement after 21 day. The result after 28 day was 95 % complete remission and mild improvement in 5 % patient. The complete remission of 20 patients means 100 % result was seen after 60 day of the treatment.

## DISCUSSION

This chapter is presented with a motto of critical discussion on the literature review, materials and methods, observation and results that are achieved. Brief discussion is done on the literature of *Agnikarma* and

*Agnidagdha Vrana* as much has been reviewed in the context of review of literature. Whereas the most of the points are discussed on clinical study for to understand the results obtained.

### Discussion on review of literature

The *Agnikarma* is considered as the best treatment modality for *Vataja* and *Kaphaja Arsha* because of the opposite property. The *Arsha* in the *Vyaktavasta* requires *Vyadhi Pratyanyika Chikitsa* as *Chedana*. *Agnikarma* dose the *Chedana* of the *Arsha*. The *Agni* because of its *Ushna* property subsides both *Kapha* and *Vata*. It also removes the *Ankura* which is of *Mamsadhatu* (*Prithvi Mahabhutha Pradhana*) from its root. Moreover, the pile mass consisting of venous plexus along with arterial twig from superior haemorrhoidal artery and certain amount of loose sub mucous and sub cutaneous areolar tissue surrounding the vessel has got the tendency to bleed on excision. The *Agnikarma* ultimate one among the *Raktasthambana* measures. It does both the *Chedana* of the *Ankura* and at the same time, *Raktasthambhana*. The external piles, which bear the features as like the features indicated for the *Agnikarma* i.e., *Karkasha*, *Sthira*, *Pruthu* and *Kathina*, can be considered as *Vataja* and *Kaphaja Arsha*. Hence they can be treated by *Agnikarma*. The wound formed after *Agnikarma* is due to *Agni* only so it can be called as *Agnidagdha Vrana*. Though the clinical feature like *Varna*, *Srava* and *Gandha* are not mentioned specially for *Agnidagdha Vrana*, we can consider those with reference to *Vrana*. The types of *Agnidagdha* like *Twaka Dagdha*, *Mamsa Dagdha* helps to understand the depth of burn, involve *Dhatu* and the further line of treatment. The types like *Plusta Dagdha*, *Durdagdha* and *Atidagdha* though formed due to *Agnikarma* shows separate clinical feature and require *Sheeta* and *Ushana Chikitsa* accordingly.

### Discussion on materials and methods

The main clinical features of *Agnidagdha Vrana* due to *Agnikarma* in *Arsha* are pain and burning sensation. These features might be due to *Prakopa* of *Pitta Dosha* which is because of *Agnikarma*. The *Yashtimadhuka* by its *Madhura Rasa*, *Madhura Vipaka*, *Sheeta Veerya* and *Dahashamaka* properties helps in the reduction of burning sensation and because of its *Vedanashamaka* property helps in relieving pain. The *Vranashodhana*, *Vranaropana*, *Lekhana*, *Sandhana* and *Varnya* properties of *Madhu* helps in wound healing. *Madhu* helps in sloughing out the dead necrosed tissue and cleans the wound. It also helps in reducing the burning sensation by its *Pittaghna* Properties. *Ghritha* is considered as one of the best *Pittaghna Dravya*. It reduces the burning sensation by its *Madhura Rasa*, *Madhura Vipaka*, *Sheeta Veerya* and also acts as *Shoolahara* and *Vedanaprasadana*. From the above information it is clear that all the three drugs have got *Pittaghna* and *Shoolahara* properties. These when used together gives good result in *Agnidagdha Vrana*. The application of *Ghritha* and *Madhu* was therefore done first on the wound after which *Pradeha* of *Yashtimadhuka* and *Ghritha* was done and the wound was covered by gauze piece.

### Discussion on Observation

Majority of the patients (55%) were 'Yuva' i.e., 21-30 years of age group. Since *Yuvavastha* is *Pitta*

*Pradhana Kala*, any slight change in the *Ahara* and *Vihara* that are *Pittaprapakopa* in nature will aggravate the *Pitta*. So further *Nidana* will increase the *Pitta* by *Dravaguna* and decrease it by its *Guna* and *Karma*. Thus resulted *Agnimandhya* might have caused the *Arsha*. This formed *Arsha* when treated with *Agnikarma* leads to the formation of *Agnidagdha Vrana*. Majority of the sufferers (65%) were male. This may be because of the more exposure to the *Nidana* of *Arsha* as compared to females. Majority of the sufferers (75%) were having the *Kapha Pradhana* or *Kapha Anubandha Prakruti*. This may be attributed to the *Sheeta Kala*, *Sheeta Desha*, *Kapha Prakruti* and *Vata Dosha* which are in *Samana dharma* to each other by the *Sheeta Guna* to vitiate each other and to produce the *Agnimandhya*; thus causing *Arsha*. Majority of the patients were of mixed dietary habit (70%), who prefers the pork (*Varaha*), chicken (*Kukkuta*) and mutton (*Avi*). These *Mamsa* are *Guru*, *Sheetala* and *Alpabhishtandhi* in nature to cause *Kapha Vriddhi* and *Agnimandhya* to produce *Arsha*. More over the vegetarians who prefer *Ragi* balls and *Shali* in Hassan district do suffer from *Arsha* because of vitiation of *Vata* and *Koshtabaddata* (constipation) that was noticed in majority of the patients (30%).

The pain in relation to defecation is observed in all the patients (100%). It might be due to the applied pressure of faecal matter over the formed wound at the time of defecation.

### Discussion on Results

As the patients complained of *Vedana*, *Varna*, *Srava*, *Daha* and *Akruti*, the effect of therapy was mainly concentrated on these signs and symptoms. Even though it was an observational study the assessment of change in the intensity of the post operative pain, *Vrana Srava*, *Vrana Varna*, *Daha* was made to draw some of the conclusions regarding the time taken for subsiding of the pain and wound healing.

#### Effect of therapy on *Vedana* (post-operative pain)

The post operative pain immediately after the procedure was more with the mean score of 2.25, that reduced to a mean of 1.75 with a relief of 22.22%, which was statistically significant ( $p < 0.001$ ) after 3 days of treatment. After 7 days, the pain showed a mean score of 1.1 and a relief of about 51.11% from pain, which is statistically significant ( $p < 0.001$ ). Further after 14 days and 21 days relief was 64.44% and 91.11%, which is also statistically significant ( $p < 0.001$ ). The increase in the pain immediately after procedure was due to burning of the tissues that resulted in necrosis. And further reduction of pain might be due to the *Vedanasthapaka* property of *Yashtimadhuka* and *Shoolahara* property of *Ghritha*.

#### Effect of therapy on *Vrana Varna*

The procedure results in the formation of blackish white coloured necrosed wound tissue with mean score of 3.00 that turns to red colour with granulation after 7 days with a mean score of 1.55 ( $p < 0.001$ ) and a relief of 51.11%, after 14 days mean

score was 0.75 with a relief of 75%. Wound colour changed to pale pink after 21 days (mean score 0.25). After 28 days the colour almost completely changed to skin colour with mean score of 0.05 with a relief of 98.33 %, which is statistically significant. This indicates that the wound almost completely heals by 28 days. The change in *Varna* is due to the changed condition of *Vrana*. On the procedure day, due to application of Agni, the tissue burns and becomes blackish-white / grey in colour. After the application of *Yashti-Madhu-Ghrita*, the colour of *Vrana* gradually changes to normal. This might occur due to *Vrana shodhana* and *Vranaropana* properties of *Madhu* and *Vranaprasadana* property of *Ghrita*, which helps in removing dead and necrosed tissue and also helps in the development of healthy granulation.

#### Effect of therapy on *Vrana Srava*

The *Vrana* has got minimal *Srava* on the procedure day with mean score of 1. The *Srava* increases after the day of procedure with the mean score of 1.85, as the necrosed tissue gets separated from the healthy tissue in the form of liquefied brownish black discharge. But the discharge reduces completely to nil after 21 days with a mean score of '0' resulting into 100% change in the *Srava* compared to the procedure day. The minimal *Srava* on the procedure day is because of the *Shushka Sankuchita Vrana (Samyakdahana)*. But as the healing starts, the discharge increases from the next day onwards for a short period and gradually decreases after the 7<sup>th</sup> day to complete cessation upto 21<sup>st</sup> day.

#### Effect of therapy on *Daha*

*Daha* immediately after the procedure was more with the mean score of 2.65, which reduced to a mean of 1.35, with a relief of 49.05 %, which was statistically significant ( $p < 0.050$ ) after 3 days of treatment. After 7 days *Daha* was almost negligible with the mean score of 0.45 and about 83 % of relief, which is statistically significant ( $p < 0.001$ ). After 14 days *Daha* showed a mean score of 0.05 and about 98.11 % of relief, which is also statistically significant ( $p < 0.001$ ). 100 % relief was observed after 21 days with mean score of 0.00. Patient's complaint of *Daha* can be attributed to *Rakta* and *Pitta Prakopa* because of Agni. But application of *Yashti-Madhu-Ghrita* which are having *Madhura Rasa*, *Madhura Vipaka* and *Sheeta Virya* relieves the *Daha* by the *Rakta* and *Pitta Prasadana*.

#### Effect of therapy on *Vrana Akruti*

The *Akruti* on the day of the procedure with a mean score of 2.3 has noticed a little decrease with the mean score being 2.1 on the third day by 8.69% of relief. After 7 day, the change in *Akruti* was by 45.65%, which was statistically significant ( $p < 0.001$ ). 14 day after the treatment the change in *Akruti* was found to be 60.68%, 21 day the *Akruti* change was noticed by 89.13% and after 28 day it was 97.83 %. By seeing the changes in *Akruti* we can say that the application of *Yashti-Madhu - Ghrita* helps in wound healing. *Madhu* is a know healer of wound and also plays a role in the initial debridement. It

has antimicrobial capability against gram positive and gram negative organism. It signifies that *Madhu* is a beat agent which does *Vranashodhana*, *Lekhana*, *Ropana* and is a best tissue healing promoter which helps in fast wound healing.

#### Overall effect of therapy

On the first day the result is unchanged. After 3 day 10 % patients shows mild improvement and 90% are unchanged. 7 day after the treatment the results observed are 20 % moderate improvement, 40 % mild improvement and 40 % are unchanged. The complete remission was observed in 25 % of the patients, marked improvement in 5 % patient, moderate in 5 %, mild in 60 % and the improvement is unchanged in 5 % patient after the 14<sup>th</sup> day. 75% patients got complete remission and 25 % patients shows mild improvement after 21 day. The result after 28 day was 95 % complete remission and mild improvement in 5 % patient. The complete remission of 20 patients means 100 % result was seen after 60 day of the treatment. The gradual increase in relief gives idea about the wound healing. But it is observed that some patients got relief earlier and some took more period. It may be due to the initial size of wound. The patients having big size wound took more time to heal while small wound took less time. At the end of the 60<sup>th</sup> day, it was found that all the 20 patients were free from the *Veadan*, *Varna*, *Srava*, *Daha*, *Akruti*. This confirms that there is 100% cure i.e., complete remission in all the 20 patients.

#### Probable mode of action of drug according to Ayurveda

*Agnidagdha Vrana* is formed because of *Agni* which leads to the vitiation of *Pitta* and *Rakta*. This vitiated *Pitta* and *Rakta* causes pain and burning sensation at the *Dagdha* site. *Yashtimadhuka* and *Ghrita* are having *Gunas* like *Madhura Rasa*, *Madhura Vipaka* and *Sheeta Veerya*. These properties help in the reducing the vitiated *Pitta* and *Rakta* and further reduces pain and burning sensation. Discharge and slough are main problems for wound healing. For the removal of slough and discharge, the drugs should have the qualities of *Laghu*, *Rooksha*, and *Kashaaya Rasa*. *Madhu* is having all these requisite qualities. *Madhu* by its "*Lekhana*" and "*Shodhana*"<sup>182</sup> property may stop the unhealthy granulation tissue development and remove the slough in the ulcer. By its *Ropana*<sup>180</sup> property may help in the development of healthy granulation tissue.

#### Probable mode of action of drugs according to modern

1. *Yashtimadhuka* is one of the ingredients of *Yashti-Madhu-Ghrita* which is having anti-inflammatory and analgesic property, this may relieve the pain.
2. In *Madhu*, Vitamin-C and calcium are the important chemical ingredients. In wound healing, for the maturation of collagen, Vitamin-C is important factor. For example in Scurvy, though vascular granulation tissue is formed, yet there is failure of collagen formation. Instead there are reticulin fibres.



Maturation of collagen does not occur in the absence of vitamin-C.<sup>59</sup>

Calcium is considered as important factor for the granulation tissue development.

3. As infection is one of the important factors which is responsible for the delay of wound healing. The Gram positive and Gram negative bacteria are the main micro organisms for infection. *Madhu* has anti-microbial capability against gram positive and gram negative organism. It also does the initial wound debridement and thus may enhance tissue repair and wound healing.
4. Application of *Ghritha* on *Agnidagdha Vrana* creates a moist atmosphere in the wound which helps in mild vasodilatation of constricted vessels caused because of *Agnikarma*. This vasodilatation might help in maintaining tissue perfusion. This may help in enhancing tissue repair and wound healing.

### CONCLUSION

On the basis of the review of literature and observations made by this clinical study, the following conclusions can be drawn.

1. The *Nidana* that are mentioned for *Arsha*, remain same till today with a little bit of modification like bike riding and distant travelling instead of *Prishtayana* etc.
2. *Agnikarma* happens to be the ultimate treatment modality for the *Vataja* and *Kaphaja Arsha* that present with *Kathina*, *Parusha*, *Sthira* and *Karkasha Lakshana*.
3. Majority of the sufferers happen to be young and middle aged; non-vegetarian; males and of middle income group.
4. The application of *Yashti-Madhu-Ghritha* can be use as analgesic in *Agnidagdha Vrana*.
5. *Yashti-Madhu-Ghritha* application is very helpful for reducing burning sensation in *Agnidagdha Vrana*.
6. *Yashti-Madhu-Ghritha* application also helps in wound healing by removing the slough and keeping the wound clean.
7. The establishment of the obtained results requires the study on large number of sample with long term follow up.

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#### Cite this article as:

Mayur V.Shiralkar, Devata M. Shiralkar, Shende Krushnadev, Vishal Tamhane, Rupesh Wagh. To Evaluate the Effect of Yashti-Madhu-Ghritha Application in Post-Operative Management of Agnidagdha Vrana in Arshas. AYUSHDHARA, 2015;2(5):315-323.

**Source of support: Nil, Conflict of interest: None Declared**