



EVALUATION OF THE EFFECT OF AYURVEDIC DRESSING MATERIAL IN BURN WOUND – A CLINICAL STUDY OF 300 CASES

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ABSTRACT

Purpose of the study In Sushruta Samhita, detailed description of etiopathogenesis, clinical presentation, treatment is found for *Dagdha vrana* (Burn wound), while describing the *agnikarma* in *Agni karma vidhi Adhyaya* in Sutra Sthana. Astanga Samgraha & Astanga Hridaya followed Sushruta Samhita while describing etiopathogenesis, clinical presentation & different modalities of treatment. In this present study the effect of Madhuchistadi Ropan Ghrita in *durdagdha vrana* (2^o burn) is evaluated in eight years duration.

MATERIALS & METHOD: In this study 300 cases of *Durdagdha* types of *Dagdha vrana* were registered from Shalya Tantra department of Govt. Ayurvedic College Hospital, Guwahati and open clinical trial was done depending upon subjective & objective parameters.

RESULT: The result was found satisfactory in term of reduction of discharge, pain & surface area of wound, standard statistical method was followed.

CONCLUSION: Ayurvedic dressing material as local application is found very effective in the management of *Dagdha vrana*.

KEYWORDS : *Dagdha vrana*, Madhuchistadi Ropan Ghrita, 2^o burn.

INTRODUCTION:

Sushruta Samhita is the treasure house of surgical research of ancient Indian civilization where treatment of all types of wound is described vividly. Traumatic wound, infected wound, burn wound etc. are described in details in terms of *Agantuja vrana*, *Nija vrana*, *Dagdha vrana* regarding types, etiopathogenesis, clinical presentation diagnosis & management. *Dagdha vrana* is described in details in Sutra sthan, chapter no. 12, while describing different types of *Agnikarma* & *Agnikarma Vyapatti*. Sushruta Samhita mentioned four types of *Dagdha vrana* depending upon the degree of burn which are –

- i) *Plusta*
- ii) *Durdagdha*
- iii) *Samyak dagdha*
- iv) *Atidagdha*

Depending upon etiology, *Dagdha vrana* is classified into two categories – *Snigdha* & *Ruksha* in Sushruta Samhita.

In Astanga Samgraha & Astanga Hridaya similar description is found and were influenced by the description of Sushruta Samhita. In modern medicine, depending upon the tissue involvement & clinical presentation, burn injury is divided into 4 groups which are –

- i) Epidermal burn – 1^o
- ii) a. Superficial dermal burn – 2^o
b. Deep dermal burn – 2^o
- iii) Full thickness burn – 3^o
- iv) Subcutaneous fat & deeper tissue burn – 4^o

The description of *Plusta*, *Durdagdha*, *Samyak* & *Atidagdha* types of *Dagdha vrana* are identical to 1^o, 2^o, 3^o & 4^o burn in terms of clinical presentation. In this present study, effect of Madhuchistadi Ropan Ghrita (Su.Su.12/27-28) is evaluated as local ointment after surgical debridement of the burnt tissue.

OBJECTIVES:

1. To explore and re-establish the clinical efficacy of Madhuchistadi Ropan Ghrita as described in Sushruta Samhita for the treatment of *Durdagdha vrana*.

MATERIALS AND METHOD:

- 300 cases of burn injury upto 2^o burn were registered from OPD, IPD & Casualty of Govt. Ayurvedic College Hospital, Guwahati, on the basis of history, physical examination & assessment of *Dagdha vrana* based on classical description of *Durdagdha* type of *Dagdha vrana*.
- The present study initiated in the year 2012 and still continued with the financial support of Srimanta Sankaradeva University of Health Sciences, Guwahati.
- Ethical clearance from institutional ethical committee of the same institute.
- Preparation of drug: Rasashala of same institute.
- Analysis of drug : Drug testing laboratory, Govt. Ayurvedic College, Guwahati.
- Study design was randomized open clinical trial following standard inclusion and exclusion criteria.
- Madhuchistadi Ropan Ghrita contained following drugs –
 - a) Madhuchista (Bee's wax)
 - b) Madhuka (Glycyohija glabra)
 - c) Lodhra (Symplecos racemose Roxb.)
 - d) Sarjaras (Resin of vateria Indica Linn)
 - e) Manjista (Rebia cordifolia Linn)
 - f) Chandan (Santalum album Linn)
 - g) Murva (Marsdenia tenacissima)

METHOD OF STUDY:

- All the data of the patients registered for the study were documented in a pre-designed proforma in terms of history, physical examination & local findings.
- After initial surgical debridement of the burnt tissue & irrigation with normal saline, the wound was measured followed by local application of Madhuchistadi Ropan Ghrita & covering of the wound was done with sterile pad & loose bandage. During this procedure all aseptic measures were taken and data of the wound was assessed in seven day's interval for consecutive six weeks maximum. For any complications or unwillingness for the treatment by the patient, alternative management done with the help of other burn surgeon

Statistical Method:

- Mean & standard deviation of all the varieties calculated.

- Paired t test has been done for each parameter.

Inclusion Criteria:

- Age group: 5 years to 60 years.
- Patients of either sex will be selected for the study.
- Both new cases and referred cases considered for the study.
- Patients with up to 30% of burn will be considered for the study.

Exclusion Criteria:

- Patient with more than 30% of burn injury.
- Samyak dagdha*, and *Ati dagdha* type of *dagdha vrana* (or burn injury of third degree or fourth degree).
- Any burn with involvement of vital organs.
- Burn injury involved with eyes, genitalia and inhalation injury.
- Electric burns,
- Chemical burn.
- Age below 5 and above 60 years old are not taken for study.
- Patient with systemic disorders like uncontrolled Diabetes mellitus, HIV positive, HbsAg positive, HCV positive cases and Pregnancy.
- Medico-legal cases.

Criteria for withdrawal:

- Discontinuation of the treatment during trial by the patient.
- Development of any local and systemic complications.
- Aggravation of the disease symptoms.
- Any side effect of the drug.

Assessment criteria:

Assessment was done on the basis of subjective and objective parameters planned for the study.

Subjective Parameters:

Pain

Visual Analogue Scale (VAS), with Numerical Rating Scale that allowed patient to rate pain intensity on a numbered scale, such as 0 to 10

- 0 = No pain
- 1-3 = mild pain
- 4-7 = moderate pain
- 8-10 = severe pain

Burning Sensation:

Visual Analogue Scale (VAS), with Numerical Rating Scale that allowed patient to rate pain intensity on a numbered scale, such as 0 to 10

- 0 = No pain
- 1-3 = mild pain
- 4-7 = moderate pain
- 8-10 = severe pain

Odour:

- 4= odour is evident on entering the room (6-10 feet or 2-3 meters from the patient) with the dressing intact.
- 3= odour is evident on entering the room (6-10 feet or 2-3 meters from the patient) with the dressing material removed.
- 2= odour is evident at close proximity to the patient when the dressing is intact.
- 1= odour is evident at close proximity to the patient when the dressing is removed.
- 0= No odour is evident, even at the patient's bed side with the dressing removed.

Objective Parameters:

1. Size

Size was calculated by taking the highest value of length and breathe in the largest continuous patch.

The percentage of wound contraction (%) = (wound size day 0 – wound size x) ÷ wound size day 0 × 100%

2. Exudates

- No discharge 0
- Scanty and little wet discharge 1
- Seropurulent discharge 2
- Profuse purulent discharge with slough 3

OBSERVATION & RESULTS:

Table 1: Distribution of patients according to age groups.

Age Group (in years)	Total Number of patients	Percentage (%)
5-20	84	28
21-30	114	38
31-40	30	10
41-50	24	8
51-60	48	16
Total	300	100

Incidence of burn found in age group 21-30 is higher compared to the other age group.

Table 2: Distribution of patients according to gender

Sex	Total n=300	
	Number of patients	Percentage (%)
Male	174	58
Female	126	42
Total	300	100

From the study it is found that male 58% burn injuries and female which is 42%. It may be due to males are engaged in different kinds of work whereas female is mostly confined to household work.

Table 3: Distribution of patients according to occupation.

Occupation	Number of patients	Percentage
Home maker	75	25
Factory worker	54	18
Student	45	15
Daily worker	42	14
Service	36	12
Business	30	10
Driver	18	6
Total	300	100

25% are home maker, 18% are factory workers, 15% students, 14 daily workers, 12% service, 10% are business man and 6% driver. Home maker are more prone to burn injury may be due daily kitchen house hold work.

Table 4: Distribution according to habitat.

Habitat	Number of patients	Percentage
Town	288	96
Village	12	4
Total	300	100

96 % are from town area as nearby area of our hospital is taken as urban area by municipality. 4% are from village area nearby.

Table 5: Distribution of patients according to time of arrival

Time of arrival	Total	
	Number of patients	Percentage
0-24	234	78
24-48	60	20
After 48	6	2
Total	300	100

78% arrived hospital within 24 hours, 20% arrived hospital after 24 hours and 2% arrived hospital after 48 hours. As most of the patients are from nearby, they arrived hospital within 24 hours of burn.

Table 6: Distribution of patients according to socio-economic status

Socio-economic status	Number of patients	Percentage
Average	144	48
Good	96	32
Poor	60	20
Total	300	100

48% patient have average in socio economic status, 32% are has good and 20% are poor are having low socio-economic status.

DISCUSSION:

The character of *Durdgdha* types of *dagdha vrana* are similar with second degree burn i.e. superficial & deep dermal burn in term of clinical presentation. The principles of early surgical debridement and application of ointment for the management of burn injury in Ayurveda are identical to modern burn care protocols. The effect of *Madhuchistadi ropan ghrita* is highly significant in terms of the parameters like *Gandha Varna, Srava, Vedana, Akriti*. Most of the patient improved drastically within 42 days of therapy in terms of reduction as Smell, Discharge, Pain, Reduction of size of wound and epithelization.

CONCLUSION:

Sushruta Samhita is the pioneer for describing burn wound care during the time to ancient Indian civilization. Other authors of Ayurvedic treatise followed the basic treatment guideline from Sushruta Samhita. *Madhuchistadi Ropan Ghrita* is found very much effective in the management of *dagdha vrana* and it will give an alternative dressing material to been surgeon of modern era.

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