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Research Article

MANAGEMENT OF BURN WOUND WITH LOCAL APPLICATION OF JEERAKGHRITA

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ABSTRACT

Cases of burn are difficult to treat among all kinds of injuries. Burns are the most devastating and painful condition causing major physical, mental, emotional and social trauma. Also whatever is the cause; burn injuries cause many more complications like cosmetic disfigurement, permanent physical damage and mental trauma. Treatment of burn is not only expensive but also painful. The management of burn poses a challenge for every member of the burn team. These cases of burns were treated with ayurvedic treatment for local application. Also prolonged external application shows better results according to cosmetic point of view as well.

Keywords: Burn, wound, sushruta, agnidagdhavrana, jeerakghrita.

INTRODUCTION

Pain is any unpleasant and disturbing feeling or sensation due to any physical or mental injury to every living organism. It ranges from mild to severe depending on extent of injury. Injury is damage to the body due to wide range of physical and emotional factors.

Among all kind of injuries burns are most devastating and painful condition causing major physical, mental, emotional and social trauma. Burns are results from thermal, electrical, chemical injuries or due to exposure to radiation. Incident of burns is common from the ages. Whatever is the cause accidental, suicidal or homicidal, burn injuries have high mortality rate in the whole world. Burn injury causes many more complication like cosmetic disfigurement, permanent physical damage and mental trauma. It is one of the immunocompromised state causing high morbidity and mortality. Majority of burns are due to thermal injury like flame, flash, scalds or contact burns.

From ancient age it is a serious health issue. For developing countries like India it is one of the major health problems. Major Burns are very difficult to treat. It is important to have proper infrastructure for treatment. In India burn is common in all ages and gender but children and women are mainly affected. It is very shameful for developing country like India that we are still facing conditions like dowry death, bride burning and domestic violence. Approximately 90 percent of burns occur in low to middle income regions that generally lack the necessary infrastructure to reduce the incidence and severity of burn. These incidences are very common among world mostly in low socio-economic classes; varying from 1% to 100% burn.

Treatment of burn is not only expensive but also very painful. The management of the major burn injury represents a significant challenge to every member of burn team. Major Burns leads to death but superficial burns and minor degree burns leads to contracture, hypertrophic scars, and pigmentation. Post burn complications are contractures, keloid formations which may turn eventually into squamous cell carcinoma though extent is small or irrespective of area. Though the affected area of burn is small, it always disturbs the patient emotionally or psychologically.

In Ayurveda Acharya Sushrut has explained in detail about Agni DagdhaVran.¹ He has mentioned in detail about the types, lakshanas, and the management of Agnidagdha Vrana. Similarly, other Acharyas also mentioned Agnidagdha in there respected samhitas in brief.

Now a day's Silver Sulfadiazine is commonly used as dressing medicine. But this does not avoid post burn complications. Affected patients may land into horribly contracted, pigmented scar. Hence this topic is chosen to find out, eco-friendly, easily available, cost effective way to treat minor burns and to avoid post burn complications.

Jeerakghrita is described by *Bhaishajyaratnavali* as combination for healing of burn wounds reduces the burn discharge and reduces burning sensation of burn area and blister formations.

Application of *Jeerakghrita* quickly relieved pain of burn. *Jeerak ghrita* prepared by *ghrita pakvidhi* contains *Jeerak beej* (cumin seeds), and *prakshepa of siktha* (bee wax) & *sarjarasa* (resin of *shorea robusta*).

Aims

To study effect of *Jeerakghrita* on *agnidagdhavrana* (burn wound)

Objectives

1. To study efficacy of *Jeerak ghrita* on burn wound.
2. To study adverse effects if any.

MATERIALS AND METHODS

Selection criteria

1. Pre-diagnosed 30 patients of burn were selected as per inclusion criteria.
2. Also, they were selected irrespective of gender, religion and occupation.
3. Patient between age group 20-60 years and partial thickness burns were included.

Inclusion criteria

Extent of burn was decided with the help of “Wallace’s Rule of Nine”, through which the percentage of damage of surface area and depth can be estimated.

1. Patients’ up to 15% burns.
2. 1° and 2° burns (according to Wilson’s classification)
3. Partial thickness burns.

Patients with above subjective and objective criteria were included in this study after thorough complete history, physical examinations and necessary investigations. Ethical Clearance no- MUHS/E-3-T/PG/3204/2396/14

Investigation

1. Haemogram, ESR, BSL, HIV, HbsAg.
2. Urine examination
3. Sr. Electrolyte, Serum. protein, BUL, Serum Creatinine (if necessary)

Follow Up

Patients were asked to give follow up daily up to 7th day, then on 10th, 15th, 21th day or up to relief.

Daily assessment of patients included,

1. TPR BP Chart
2. Blood Investigation – if necessary
3. Wound examination
4. Wound cleaning and dressing.

Procedure of *VranaKarma* (wound cleaning and dressing)

1. Sterile instruments and materials were taken as follows kidney tray, swab holding forceps, dissecting forceps, gauze piece, cotton, sterile spatula, dressing table, sterile warm water, *Jeerak ghrita* and inform written consent were taken
2. According to the site of Burn wound suitable position was given, wound was cleaned daily with sterile warm water.
3. All burnt skin and slough was removed as per requirement to keep wound clean.
4. And surrounding area of wound was always dried and kept cleaned.
5. *Jeerak ghrita* was applied over burn wound separately and gauze pieces were kept and dressing was done with autoclaved cotton bandage.
6. Patients were advised with following orders as follows-
7. Do not allow dressings to get wet.
8. Do not allow dressing to get contaminated.
9. Patients were asked for regular follow ups.
10. Patients were asked to follow the diet restrictions.

Duration of Treatment

Total 30 patients with minimum period of follow ups for 21 days with clinical assessment of wound done daily.

Criteria of Assessment

Assessment was based on relief found in the clinical signs and symptoms of the disease. For this purpose, main clinical signs and symptoms were given suitable scores according to their severity before, during and after treatment.

Severity of pain (*shula*) grades

No pain	0
Intermittent pain	1
Continuous pain	2
Unable to do normal activities	3
Disturbed sleep due to pain	4

Discharge

Absence of discharge	0
Serous discharge	1
Blood discharge	2
Sero-purulent discharge	3

Colour

Normal (up to)	0
Changed	1

Swelling

Absent	0
Present	1

Floor

Healed completely	0
Granulation Present	1
Granulation Absent	2
Slough Present	3

Fever

Up to 98.6	0
98.07 to 100	1
above 100	2

Healing

Healed by 76-100%	0
Healed by 51-75%	1
Healed by 26-50%	2
Healed by 0-25%	3
Original Wound	4

Wound area

Surface area of Wound measured by graph paper

Area = length x breadth (cm²)

Healed surface area =

Actual surface area in cm² of wound on Day 0 (A0) – Unhealed surface area remained on day 21 (A21)

% of healed wound area = (healed surface area/Ao) x 100.

Mode of application



burn wound



sterile dressing material



cleaned wound



application of jeerak ghrith



wound after 15days



wound after 21 days

OBSERVATIONS AND RESULTS

Agni dagdha vrana (Burn wound) was healed within 7 days in 4 patients, while it was healed in within 15 days in 11 patients, wound was healed within 21 days in 7 patients, and it was not completely healed after treatment of 21 days in 8 patients.

Percentage test

Color- Percentage relief in Color was 76.67 %
Swelling- Percentage relief in swelling was 100 %

DISCUSSION

Burn is a coagulation necrosis of tissue due to contact with fire, flame, or contact with hot substances. It is commonest type of household injury and industrial injury as well.

Jeerak ghritha is mentioned in *Bhaishajyaratnavali* for *Agnidagdha vrana* (burn wound) as *vedanahar* (pain relieving) and *vranaropaka* (wound healing). 30 patients of superficial to deep partial thickness burn were included in this study. Jeerak ghritha was prepared by *ghritapaka vidhi* according to standard operating procedure mentioned in *Sharangdhar Samhita*.³

Pain

Pain was significantly reduced i.e. complete reduction in pain was seen in 29 patients while 1 patient had mild amount of pain. The probable action due to which pain was reduced in patients could be because *Jeerak* has *ushna* (hot), and *shulahar* (pain relieving) properties⁴ which might have reduced pain in *Agni dagdha vrana* patients. Also *Sheeta* (cooling) property of *sarjarasa*, *siktha* and *ghrita* could have reduced *daha* (burning

sensation) in *dagdha vrana* (wound). *Ghritha* also has *shulahar* (pain relieving) property which reduces pain in *Agni dagdha vrana* (burn wound).

Floor

Floor was significantly reduced i.e. complete reduction in floor was seen in 25 patients while 5 patient had granulation present. The probable action due to which floor reduced in trial group patients could be because *Jeerak* has *ruksha* (dry), *krimihar* (anti-microbial) properties which might have reduced slough in wound. *Sarjarasa* (*resin of shorea robusta*) is said to be *spotnashak* (anti blister property)⁵ which might have reduced the formation of blisters

Discharge

Discharge was significantly reduced i.e. complete reduction in discharge was seen in 28 patients while 2 patient had serous discharge present. The probable action due to which discharge could have reduced in patients could be because *Jeerak* has *ruksha* (dry), *grahi* (astringent) which might have reduced discharge in wound. *Sarjarasa* is of *kashay* (astringent), *ruksha* (dry) and *sthambhak guna* which might have helped to reduce discharge in wound.

Color

Color was significantly reduced in 23 patients while 7 patients had mild discoloration present. The probable action due to which discoloration could have reduced in patients is because *ghrita* has *rasaposhanam*, *twachya* (skin nourishing) and *varna prasadanam* (skin brightening) properties which helps in reducing discoloration of *vrana*.

Healing

Healing was significantly present i.e. 76-100% healing was seen in 22 patients while 8 patient showed 51-75% of healing.

The probable action due to which healing took place in patients could be because of *Vranaropak* (healing), *Sandhankar* (healing) and Bhutaghna (anti-microbial) properties of *sarjarasa*. Also *ghrita* has *snigdha* (moisturising) and has *vranaropak* (healing) property which helps in better wound healing. *Siktha* has *snigdha* (moisturising), *mrudu* (soft) and *vranaropak* (healing) properties which might have helped in better wound healing.

In view of such results it can be said that *Jeerak ghrita* shows equally encouraging results.

CONCLUSION

This study was found very useful in the management of burn wound by application of an ayurvedic preparation *Jeerak ghrita*. *Jeerak ghrita* showed good pain relieving and healing property. Present study proved that *Jeerak ghrita* has effective pain relieving, healing properties and good cosmetic results.

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