Conceptual study on efficacy of Lajjalu Moola Taila in Sadhyovrana

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ABSTRACT

A surgeons' initial challenge is management of Vrana (wound). Vrana is the one which does the Gatravichurnana (disruption of tissues) and produces Vivarnata (discolouration) of the defected body part. Sadhyovranas are those which are caused by trauma and exogenous factors. Sadhyovrana encompasses various types of fresh wounds, including traumatic wounds, burn wounds, animal bites, and post-operative wounds. The aim of wound care is to promote wound healing in the shortest time possible, with minimal pain and scarring. While promotion of wound healing still remains a topic of discussion in modern science, the ancient system of Ayurveda has described concept of Vrana Ropana and is elaborated in the treatise Sushruta Samhita under Shashti Upakrama.[1] There is a need to explore this unique concept of Vrana Ropana under which many formulations have been mentioned in various classics which aids in early healing of the wounds. In the context of Sadhyovrana, Acharya Shodala, as cited in the Gadanigraha, refers the use of Lajjalumoolataila especially in shastraghata Vrana.[2] He particularly emphasises on its Ropanakarma function, which accelerates wound healing by preventing Paka thus, ensuring a quick recovery. Hence, an effort has been undertaken to explore the effectiveness of Lajjalumoola Taila in promoting wound healing, with a particular focus on its application in Sadhyovrana.

Key words: Vrana, Sadhyovrana, Vrana Ropana, Lajjalumoola Taila.

INTRODUCTION

Wound is described as ‘a break in the continuity of tissue’ and is regarded as healed if there is a restoration of the wounded or inflamed tissue to normal condition. Retrospective analysis of Medicare beneficiaries reveals that 8.2 million people had wounds with or without infections in 2018.[3] Wound Healing is the interaction of a complex cascade of cellular events that generates resurfacing, reconstitution and restoration of the tensile strength of injured skin. It is a systematic process, traditionally explained in terms of three classic phases’ viz. inflammation, proliferation, and maturation. The major aspect of the management of the fresh wound is prevention of the infection and speedy healing. Hence, the proper initial care of the fresh wound is necessary to assure timely healing.

Even though there are many advents in the field of wound management in modern system the quest to explore new drugs or formulations which promotes wound healing is accelerating due to the problem of resistance exhibited by microbes against many topical and oral antimicrobial agent which hinders proper healing.

Sadhyovranas are those which are caused due to exogenous factors. All the fresh wounds like traumatic...
wounds, burn wounds, animal bites, and post operative wounds can be considered under Sadhyovrana. Numerous formulations have been mentioned in context of Sadhyovrana which accelerates wound healing. Acharya Shodala in the book of Gadanigraha mentions the use of Lajjalumoolataila in the context of Shastraghata Sadhyovrana. He states that this Taila ensures quick healing of fresh wounds especially those which are inflicted by Shastra (instruments), by avoiding Paka. So, the study has been taken up to evaluate the wound healing property of Lajjalumoolla Taila.

**DISEASE REVIEW**

**Nidana:**

Fresh wounds known as Agantuja Vrana results from diverse external factors such as animal bites, sharp or blunt objects, cautery or fire, Kshara, Visha, and more.

**Types:**

6 types of Sadhyovrana are explained in Sushrutha Samhita which is elaborated in table 1:

**Table 1: Types of Sadhyovrana according to Acharya Sushrutha**

<table>
<thead>
<tr>
<th>SN</th>
<th>Type</th>
<th>Lakshana</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chinna Vrana</td>
<td>Extensive wounds either oblique or straight associated with separation of body parts</td>
</tr>
<tr>
<td>2</td>
<td>Bhinna Vrana</td>
<td>Injury to body cavities with pointed objects resulting in discharge of fluids</td>
</tr>
<tr>
<td>3</td>
<td>Viddha Vrana</td>
<td>The wound in which any part other than body cavities gets pierced by sharp pointed weapon</td>
</tr>
<tr>
<td>4</td>
<td>Kshataja Vrana</td>
<td>It is neither cut nor perforated but is in between Chinna and Bhinna Vrana</td>
</tr>
<tr>
<td>5</td>
<td>Picchitha Vrana</td>
<td>Due to severe pressure, a part of body along with bone gets flattened and is covered with marrow and blood</td>
</tr>
<tr>
<td>6</td>
<td>Ghrista Vrana</td>
<td>When the skin gets peeled off due to rubbing injury, associated with burning sensation and discharge</td>
</tr>
</tbody>
</table>

**Treatment**


**Drug review**

*Mimosa pudica* L. is a diffuse, thorny under shrub that belongs to the Mimosaceae family. The plant originates from tropical America and has become naturalized in almost all tropical and subtropical regions of India. It is commonly distributed in open-spaces, especially road side, cultivated land, and waste area.

**General description**

It is a small, prostrate or ascending, short-lived shrub. The reddish-brown, woody stems are sparsely or densely armed with curved prickles. The root system consists of a taproot and extensive fibrous roots with nodules. The twigs are fine and flexible. Leaves are compound, sensitive, sessile, linear oblong. The flowers are pink and clustered in globose heads. The legume (pod) is linear-oblong. *Mimosa pudica* is famous for its swift plant movements, exhibiting a distinctive ‘nyctinastic motion’. This involves the leaflets folding together in the evening, and the entire leaves drooping downward. The leaves can also close in response to various stimuli, including touch, warmth, or shaking. This particular type of movement is referred to as ‘seismonastic movement’. The parenchymatous motor cells in the pulvini are responsible for the contractibility. It is widely acknowledged that these movements result from the reduction or sudden loss of turgor in the motor cells.
In Ayurveda, the herb Lajjalu is recognized by various synonyms, including Namaskari, Samangaa, Samokchini, Shamipatra, Khadira Patrika, as well as Raktapadi. It has been traditionally used to treat several diseases including bleeding disorders such as menorrhagia, dysentery, piles, and in wound healing.

Acharya Charaka categorises the drug in Sandhaneeya (group of drugs used in quick wound/ fracture healing) and Pureesha Sangrahaneeyana Gana (group of drugs helpful in increasing bulk of feces).

- **Rasa** - Kashaya, Tiktha
- **Guna** - Sheeta, Ruksha Guna
- **Veerya** - Sheetha
- **Vipaka** - Katu
- **Karma** - Kaphapittha Hara
- **Therapeutic indications** - Yoniroga, Atisara, Bhagandara, Shopha, Vrana.
- **Parts used** - root, whole plant.
- **Chemical composition** - Phytochemical studies on M. pudica have revealed the presence of alkaloids, non-protein amino acid (mimosine), flavonoids C-glycosides, sterols, terpenoids, tannins, and fatty acids.

**Research works on wound healing activity of Lajjalu**

By adding the methanolic and total aqueous extracts to simple ointment base B.P. at concentrations of 0.5% (w/w), 1% (w/w), and 2% (w/w), the wound healing efficacy of M. pudica roots was investigated. Three different rat models were used to study the healing activity of wounds: excision, incision, and biochemical parameter measurement. Significant (P < 0.001) results were observed when wounds were treated with ointment containing 2% (w/w) methanolic and 2% (w/w) total aqueous extract. It showed a notable incisional wound tensile strength. The phenolic components in the methanolic extract are likely what caused the good wound healing action.[8]

A second study was done on webster albino rats to assess the effect of Mimosa pudica on wound healing. Methanolic extract of the root and shoot were used. From Day 1 of the treatment to Day 9, contraction of the excision wound was encouraged. The epithelization of wound in case of mice treated with extracts was found to be quite earlier than control. It implies that Mimosa pudica extracts from the shoots and roots aided in the healing of wounds.[9]

**Impact on burn wound model:** topically applied formulations of M. pudica leaves extract (5% & 10%) and mupirocin standard medication considerably decreased the time required for epithelialization and generated a significant 50% (days) reduction in wound contraction when compared to control.[10]

Wound healing evaluation of chloroform and methanolic extracts of M. Pudica roots in rats resulted in significant reduction in wound contraction (50%) when compared to control (P<0.001). The decline in period of epithelization and wound contraction with Methanolic and chloroform Extract of M. pudica formulations at both high and low doses were found to be significant compared to their respective emulsifying bases. High doses were found to be more effective than their lower doses.[11]

Using the zone of inhibition, the antimicrobial activity of successive extracts of the whole plant of M. pudica in petroleum ether, chloroform, ethyl acetate, methanol, and water was investigated against a variety of Gram positive and Gram-negative bacterial strains. The result of the study showed that the M. pudica whole plant extract had good antibacterial activity.
against the pathogens utilized for screening in 7–18 mm range.[12]

1) Preparation of *Lajjalu Moola Taila*

**Ingredients:**
- *Kalka Dravya*: Ardra Lajjalu Moola Kalka - 1 part
- *Sneha Dravya*: Moorchitha Tilataila - 4 parts
- *Dravadravya*: Water - 16 parts.

**Method of preparation:**

*Moorchitha Tila Taila* is taken in a thick bottomed vessel and is heated over *Mandagni*. To this specified quantity of *Ardra Lajjalu Kalka* is added followed by water. It is heated till the *Taila Siddhi Lakshanas* are observed. When the *Taila* attains room temperature, it is filtered and stored in a clean, sterile container.

**DISCUSSION**

**Probable mode of action of Lajjalumoola Taila**

*Lajjalu* contains *Tiktha, Kashaya Rasas*, *Sheeta Guna* which favours *Vranaropana*. It possesses *Shophagna, Dahaghna* and *Vranahara* properties i.e., it aids in alleviating inflammation and burning sensations, thereby expediting the healing of wounds.
Phytochemical studies on *Lajjalu* (*Mimosa pudica*) shows it contains chemical constituents such as alkaloids, flavonoids, phenols, tannins, tarpenoids etc., which promote wound healing. Wound healing activity of the root of *Mimosa pudica* was studied in three types of model in rats viz. excision, incision, and estimation of biochemical parameters. The methanolic extract exhibited good wound healing activity. It was proposed that, the high content of tannins in the roots of *Mimosa pudica* may be responsible for wound healing activity, probably due to astringent property of tannins. Antimicrobial and haemostatic properties of *Lajjalu* have already been proved.

**CONCLUSION**

*Lajjalu* (*Mimosa pudica*) is a very common shrub, the properties of which mentioned in the treatise of Ayurveda points towards wound healing potential of the drug. Moreover, the availability of this medicinal plant is abundant in India. Therefore, it emerges as a favourable option for the assessment of the drug in subsequent studies. Hence, the use of *Lajjalu Moola Tails* is anticipated to be a safe, effective, and cost-efficient approach for the treatment of recent wounds.

**REFERENCES**


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