

EFFICACY OF FRONTAL LEAVES OF *SHAAKA* – *TECTONA GRANDIS* L.f. IN THE MANAGEMENT OF BURN WOUND – A CASE REPORT

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ABSTRACT

Introduction: Medicinal plants are the nature's gift to human being to make disease free healthy life. *Tectona grandis* L.f. belonging to the Family Lamiaceae, known as *Shaaka* in Sanskrit and Teak in English, its frontal leaves (*Taruna patra*) are used in folklore practice in the treatment of burn wound. To document the evidence the present work is undertaken. **Methodology:** A male patient with the history of a Burn wound over the dorsal aspect of left hand, proximal to the index finger and thumb, associated with pain and burning sensation. *Shaaka Taruna Patra Taila* (STPT) was applied to the burn wound for 30days. **Results:** After 30days of treatment the wound is completely healed. **Discussion & Conclusion:** Burn wound are of prime concern regarding post healing scar. *Shaaka Patra* being *raktashodhaka* and *pitta-kaphashamaka* helps in *savarnikarana*. STPT demonstrated the textual properties like *raktaprasadana* and *pitta-kaphashamana* by which *Savarnikarana* was achieved by pacifying vitiated *doshas* and *rakta dhatu*. Thus STPT is a safe, simple, cost-effective yet effectual remedy in the management of burn wound.

Keywords: *Shaaka Taruna Patra Taila* (STPT), *Raktashodhana*, Burn wound, *Savarnikarana*.

INTRODUCTION

Plants are the basis of life on earth and are vital to people's livelihoods. Plants have traditionally served as man's most important weapon against a vast variety of disease conditions. Medicinal plants are the nature's gift to human being to make disease free healthy life. They are reservoirs of curative elements and are mines of useful medicaments. In spite of tremendous development in the field of medicine during the 20th century, plant still remains as one of the major sources of drug in modern as well as traditional system of medicine throughout the world. Ma-

jority of the knowledge regarding utility of these plants are undocumented and are transmitted through oral tradition, which is referred to as Folklore medicine or Traditional system of medicine which is the result of centuries of observation, selection and experimentation, it is generally derived from locally available medicinal plants.

Tectona grandis L.f. belonging to the Family *Lamiaceae* also known as *Shaaka* in Sanskrit and Teak in English, its frontal leaves (*Taruna patra*) are widely used in folklore practice for the treatment of

burn wound. Oil prepared out of tender leaves are used to apply over burn wounds, from the first day till healing by traditional practitioners of Udupi district. Literature reveals that almost all parts of this tree possess various medicinal properties, the leaves of which are cooling, hemostatic, depurative, anti-inflammatory and vulnerary.

Burn wound are of prime concern regarding post healing scar. Scars are the fibrous tissue formed on the skin in order to repair broken tissue. When there is an injury, the skin produces more cells in order to re-grow the punctured skin. It is easily visible because the cells that go in making up the scar are of lesser quality than the original cells there by producing discoloration, which is clearly mentioned in Ayurveda that *vaivarnata* (loss of normal colour) is one of the features in *Plushta Dagdha*¹. Scars frequently determine aesthetic impairment and rarely symptomatic causing itching, tenderness, pain, depression, loss of self-esteem and stigmatization leading to a diminished quality of life. Many invasive and non-invasive options are available to treat abnormal scar formation which may not be easily available and few may cost more also. Keeping all these factors in view this case study has been undertaken to evaluate the efficacy of *Shaaka Taruna Patra Taila* (STPT) in Burn Wound Management.

CASE REPORT

A 21 year old male patient presented with the history of Burn wound over the dorsal aspect of left hand, proximal to the index finger and thumb at OPD of SDM Ayurveda Hospital, Udupi on 21st December, 2017. It was associated with pain, burning sensation and watery discharge from the wound.

PAST HISTORY: Patient had no history of any significant illness and was not a k/c/o Diabetes mellitus/Hypertension. Patient was not under any regular medication.

ON EXAMINATION: On 21-12-2017, Inspection of wound :Site of wound- dorsal aspect of left hand and proximal to the index finger and thumb, Number of wound– 2, Size- 1st: 5*2cm & 2nd: 4*3cm, Shape–

Both are oval in shape, Discharge- Serous discharge present, Erythema– present, Degrees of burn/ body surface area- 0.25%, Blisters- slightly present, Swelling- slightly present. Palpation: Induration- not present, Temperature - raised, Tenderness- present, Edge- Sloping. Inspection of scar - Scar type- Superficial second degree burn², Scar colour- Brownish colour.

TREATMENT GIVEN: Wound was cleaned with Normal Saline and dressing was done by application of STPT and sterile gauze covering over the wound. Daily cleaning was done and the scar was applied thrice daily with STPT as a thin film and covered with gauze for 30days. Follow up was done for once in a week.

The Wound was observed for its healing process like Edema around the wound, Discharge from the wound, Granulation tissue.

OBSERVATIONS: Scars were measured and photographed before and after treatment.

On Day 8, 1st wound was brownish in colour and signs of epithelialisation seen at margins, 2nd wound light red colour.

On Day 15, in both the wounds epithelialisation was partially covered. The colour of epithelialisation resembles the surrounding skin colour.

On Day 30, Epithelialisation of wound was completely covered and resembling the normal colour of surrounding skin.

DISCUSSION

Each and every tribal/ethnic community has its own system of traditional medicine and they utilize natural plant based resources around their habitat for their daily use, as a custom and also for various medicinal purposes. This knowledge of utility of medicinal plants in and around their vicinity is handed down orally from one generation to the other³.

There is a great wealth of knowledge present in folklore practices which are undocumented, and are spread through tradition from the ancestors⁴. Many new drugs have been discovered and derived from these Ethnomedicine, still many have to be discov-

ered and yet to prove them as scientific evidences through researches and publications.

Burn wound are coming under *agantuja* type of *vrana* called *viddha vrana*. The Burn wounds are different from other wound with respect to heat generation. These changes are specific to burn injury and are generally not encountered in wound caused by other injuries. There is generalized increase in capillary permeability due to effect and damage which causes plasma leak out from capillaries to interstitial space. This leak persists till 48 hours and is maximum in first 8 hrs. By 48hrs either capillary permeability return back to normal or they are thrombosed and are no more the part of circulation. This heat not only damages the skin locally but also has many generalized effect on the body. The treatment protocol mentioned is, it should be treated as *pittaja vrana* with *Pradeha*, *Parisheka*, *Sarpipaana* and *Virechana* by *Sheetala*, *Madhura* and *Tikta dravyas*. This case has uniform burn injury and mostly superficial with uniform pathology thus will receive single line of treatment that is external application.

The profusely available natural resources can be used for the various ailments which are safe as well as effective. The ingredients of STPT are Tender Leaves of *Shaaka*- *T. grandis* L.f. (50g), *Narikela taila*- Coconut oil (250ml), *Jeeraka*- *Cuminum cyminum* L.(5g). The traditional method of preparation was followed by collecting fresh frontal leaves of *Shaaka* (*T. grandis* L.f.), it was washed and chopped into small pieces and added to the boiling *Narikela taila*. When the colour of the coconut oil turned red, the boiling was stopped and *Jeeraka* (*C. cyminum* L.) was added and stirred. The Oil was filtered and stored.

Shaaka (*T. grandis* L.f.) possesses *kashaya rasa*, *laghu- ruksha guna*, *sheeta veerya*, *katu vipaka* and *pitta-kapha shamaka* as well as *rakta prasadaka* property thus exhibits *ropana*, *shoshana*, *lekhana*, *asravishodhana karma*. The literature survey of *T. grandis* L.f. has revealed that it contains tannins, phenols and flavonoids. According to research stud-

ies frontal leaves of *T. grandis* L.f. promote wound healing activity through several mechanisms which include anti-oxidant, anti-microbial and astringent property and in addition it also contains Phenolic acids which have been reported to possess anti-inflammatory, analgesic, anti-oxidant and wound healing properties. It also suggests that the anti-oxidant property of the leaves is due to the presence of high amounts of tannin which may also be responsible to the post burn scar healing action⁵.

Coconut oil (*Narikela taila*) possesses *kashaya* and *madhura rasa*, *guru* and *snigdha guna*, *sheeta veerya*, *madhura vipaka* and *vata-pittashamaka* property. *Madhura rasa* of *Narikela taila* is *varnya* and *kshata sandhanakara* which adds to the healing and re-epithelialisation of Burn wound.

Jeeraka (*C. cyminum* L.) being *katu rasa*, *laghu ruksha*, *katu vipaka*, *ushna veerya* and possessing *vranahara* property which helps to promote the scar healing by virtue of its *vrananavasadayati* (wound healing) property. Thereby the preparation STPT heals up the burn wound scrapes out unwanted hypertrophied scar thus promoting the complete healing of the scar.

CONCLUSION

This present case study supports the folklore claims of the plant in burn wound management. It provides an environment at the surface of the scar in which healing can take place at the maximum rate. It is easy to prepare, apply and gives cosmetically acceptable results. Thus it can be concluded that STPT is a safe, simple, cost-effective yet effectual remedy in the management of burn wound.

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Fig 1. Shaaka - Tectona grandis L.f.



Fig 2. Method of preparation of Shaaka Taruna Patra Taila (STPT)



Fig 3. Stages of healing



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