

**Impact
Factor
3.025**

ISSN 2349-638x

Refereed And Indexed Journal

**AAYUSHI
INTERNATIONAL
INTERDISCIPLINARY
RESEARCH JOURNAL
(AIIRJ)**

Monthly Publish Journal

VOL-IV

ISSUE-II

FEB.

2017

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CHIEF EDITOR – PRAMOD PRAKASHRAO TANDALE

Role Of Neem Oil And Haridra On Non- Healing Wound : A Case Study

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Introduction

Vrana (wound) and its management has been dealt since the period of the *Veda* to current era. It has been a major problem since the early stage of medical science. Chronic nonhealing wounds present serious problems for patients, family, and clinicians. Most are associated with a small number of underlying disorders such as diabetes, leprosy, and peripheral vascular diseases. The development of pharmacological agents (antibiotics, vasodilators, antioxidant, and Vitamins) has enhanced the healing of acute as well as chronic wounds. In spite of all these recent advances lacunae still persists. Wound infection has been one of the major impediments in the process of wound healing and after invention of antibiotics; it was thought that this problem would be conquered. Since then, several antibiotics in the form of systemic and local use have been tried, but problems of chronic wound healing remain as such. Research on wound healing drugs is a potential area in biomedical sciences. Ayurveda, the Indian traditional system of medicine, mentions the values of many medicinal plants for wound healing. Scientists who are trying to explore newer drugs from natural resources are looking towards Ayurveda because phytomedicines are not only affordable, but are comparatively safe also. Several drugs from plant, mineral, and animal origin are described in Ayurveda for their wound healing properties under the term *Vranaropaka* (wound healing agent). Wound healing activities of some plants have been screened scientifically in different pharmacological models and patients, but the potential of most of them still remains unexplored. Some Ayurvedic plants, namely *Vata* (*Ficus bengalensis* Linn.), *Durva* (*Cynodon dactylon* Pers.), *Lodhra* (*Symplocos racemosa* Roxb.), *Manjishtha* (*Rubia cordifolia* Linn.), *Chandan* (*Pterocarpus santalinus* Linn.f.), *Gular* (*Ficus racemosa* Roxb.), *Yashtimadhu* (*Glycyrrhizaglabra* Linn.), *Daruharidra* (*Berberis aristata* DC.), *Haridra* (*Curcuma longa* Linn.), *Mandukaparni* (*Centella asiatica* (Linn.) Urban), *Snuhi* (*Euphorbianerifolia* Linn.), and *Ghrita Kumarai* (*Aloe vera* Tourn. ex Linn.) were found to be effective in experimental models. Among them two drugs *Azadirachta indica* A. Juss and *C. longa* were selected here for clinical assessment in chronic non-healing wounds. Most of the chronic nonhealing wounds are associated with co-morbid conditions such as diabetes, leprosy and peripheral vascular disease. Various topical agents such as growth factors and antigenic factors are gaining importance in wound care and are used for the treatment of underlying comorbidities.

Material and method

Both the drugs were administered, that is, *Neem* oil for topical application and *Haridra* capsule 1g 3 times a day orally. For the present work, the oil is prepared by pressing (cold pressed method) of *Neem* seed kernel. Dressings were changed daily. Duration of treatment considered till

complete healing of wound and 4 th and 8 th week is only for assessment of 50% healing because study sample was small.

Assessment criteria

The subjective parameters of pain, tenderness and objective parameters of size, color, floor, margin, discharge, granulation tissue and swelling were recorded on the basis of the score adopted with grading (0, 1, 2 and 3). After completion of treatment, assessment of scar was done on the basis of gradation (0, 1, 2 and 3).

Clinical case study

Male patient of 50 year old brought by relatives, *Vata-Kaphaja Prakriti* presented to us for treatment of a chronic infected wound that involved entire lateral ankle aspect of the left lower limb. He complained of burning pain in the wound as a result of a drug reaction, foul-smelling pus discharge, difficulty in walking, and occasional fever. On examination (4.5 × 2.5 cm) ugly looking ulcer was present on the lateral aspect of the left leg. There was foul-smelling pus discharge and local swelling. The pus culture report showed presence of *Staphylococcus aureus*.

The patient had no systemic disease. He had been taking treatment for the wound without any relief. He had history of hypersensitivity reactions to ibuprofen and cotrimoxazole. All laboratory investigations were in the normal range. He was admitted in the male *Shalya* ward for further investigations and management.

Treatment

With valid consent of the patient we have selected case of *dushta vrana*. Patients advised to lie in supine position. Wash given with normal saline. Nimb tail apply in adequate amount on wound. Dressing done. Every day dressing will be changed. Patient is advised to take orally *Haridra* capsule thrice a time daily and follow up after every week. *Pathyaapthya* was explained to patients.

Observation and Result

The chief complaints were pain and tenderness, found in the patients. No complaint of swelling and few discharge from the wound was noted. More than 50% healing at 8 weeks was observed. Beneficial effects of therapy were obvious from 4 th week onwards. Among these patients pus and discharge decreased and granulation tissue began to appear by 2 nd week, after 14 th week patient free from symptoms and satisfied with treatment.

Discussion

Wound healing is completed in three phases: Inflammatory, proliferative and remodeling. Granulation, collagen maturation and scar formation are some of the other phases of wound healing which run concurrently but are independent of each other. *Ropana* is always associated with *shodhana* because wound cannot be healed if it is not *shuddha*. In spite of brilliant progress in surgery, wound management still remains a subject of speculation and the early manifestation of unsatisfactory healing poses serious complication leading to prolonged healing and even death in surgical practice. It was already said that non-healing and chronic wounds are mostly concerned with a diabetic condition. In the case of diabetic ulcer the effect of *Neem* oil (*A. indica*) and *Haridra* (*C. longa*), there is a synergetic effect of both drugs, while when they are used alone is not very significant.

This study showed that combined use of *Neem* oil and *Haridra* can be a better option for chronic non healing wound.. Nimbidin, the principal component of *Neem* oil, is highly bitter and contains sulfur and sulfur has antifungal, antibacterial and keratolytic properties. Rhizome of *Haridra* is brownish, yellow in color and powder of *Haridra* is used systemically for wound healing. It possess antibacterial, antifungal and anti-inflammatory activities. It is useful in inflammations, ulcers, wounds, leprosy, skin diseases and allergic conditions. Rhizomes of it contain curcumin (diferuloylmethane), turmeric oil or turmerol and 1,7-bis, 6-hepta-diene-3, 5- dione, proteins, fat, Vitamin A, B, and C. Curcumin has potent anti-inflammatory and analgesic activities. The anti-inflammatory property and the presence of Vitamin A and proteins in turmeric result in the early synthesis of collagen fibers by mimicking fibroblastic activity. Antimicrobial effects of *Neem* extract have been demonstrated against *Streptococcus mutans* and *Streptococcus faecalis*. Similarly, curcumin is an important constituent of turmeric powder, has shown faster wound closure of punch wounds by reepithelialization of the epidermis and increased migration of various cells including myofibroblasts, fibroblasts, and macrophages in the wound bed. Multiple areas within the dermis showed extensive neo-vascularization as well.

Conclusion

To conclude, we can say that on treatment with *nimb taila and haridra capsule* , the process of repair was not complicated by infection with micro-organisms. So, there was no interference with the general health of the patient. The temperature remained normal; the circulatory, gastrointestinal, nervous systems, and other functions were undisturbed; locally, the part was cool, of natural color and free from pain. It can be concluded that the wounds healed within 14 weeks with good results in the form of normal colored scar formation without any complication. Local application of *nimb taila* provided good result by reduction of the wound size and promotion of healing, and it proved to be cosmetically effective with least scar formation also.. No untoward effects were observed during the course of treatment.

Hence, from this clinical study, it can be concluded that the drug *nimb taila and haridra capsule* possesses high efficacy in vran ropan and shodhan with fine scaring without producing any adverse effect. So, it can be recommended as a cost-effective, easy to prepare and effective therapy for wound healing.

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