

Case Report

CLINICAL POTENTIALITY OF *DHANVAYAS (FAGONIA CRETICA LINN.)* PASTE IN THE MANAGEMENT OF CHRONIC WOUND – A CASE REPORT

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ABSTRACT

Management of chronic wound becomes difficult when it overlays by recurrent infection, peripheral tissue oedema or slough/necrotized tissues. Wound debridement provides healthy environment by removing of unhealthy tissues. In practice of Ayurveda, many of herbs or herbo-mineral formulations are being used for wound care. *Dhanvayas*, also known as *Dhamaso*, is an under shrub belongs to Zygophyllaceae family. Traditionally it is being used in fever, hepatitis, boil, skin eruption, tumours and as blood purifier. Animal experimental studies also proves its wound healing properties.

Here a case of chronic wound on left lower limb over anterior aspect of the tibia associated with recurrent cellulitis, serous discharge and itching; attended the OPD of Shalya Tantra Department of IPGT&RA, Jamnagar. On measurement it was 8 cm x 4 cm sized. After taking proper history, clinical examination and necessary investigations this case was successfully treated with local application of *Dhanvayas (Fagonia cretica* Linn.) powder as paste. Wound was daily cleaned with *Dhanvayas kwatha* (Decoction) and then paste was applied over the lesions in the morning and continued till healing of wound. Assessment was done in regular interval. Itching followed by discharge was reduced remarkably within week. Wound was healed completely within six weeks without any complication which showed wound healing activity of *Dhanvayas* powder.

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INTRODUCTION

Wound associated with local infection is troublesome and is difficult to manage in chronic conditions. Recurrent cellulitis ended with superficial fibrosis of epithelial tissues and invade organism to reoccur in suitable environmental situations. Sushruta mentioned in the classic that chronic wounds are *Krichasadhya* (difficult to treat)^[1]. The signs of *Dusta Vrana* (chronic wounds) mentioned in the classics are *Ativivrita* (broad based), *Bhairava* (ugly looking), *Putipuyamansa* (purulent pus discharge), *Gandha* (foul smell), *Vedana* (pain), *Dirghakalanubandhi* (chronic in nature).^[2] According to Sushruta, among 60 measures of comprehensive wound management, *Kalka* (paste) is indicated in cases of chronic wounds.^[3] The paste performs both the functions of cleansing as well as healing of wounds. *Dhanvayas* is an under shrub distributed in the Saurashtra region of Gujarat and all over part of India (Fig-1).

In vitro antimicrobial activity of aqueous extract of *Fagonia cretica* Linn. Showed maximum activity against *S.aureus*, *E.coli* and *P.aureginosa*.^[4] Strong antibacterial effect of plant could be due to flavonoids, Tannins and Saponins present in the plant.^[5] Presence of alkaloids also justifies antimicrobial activity of plant

against a number of microorganisms. *Fagonia* species *F. schweinfurthii* plant extract gel has therapeutic anti-inflammatory and wound healing effects in albino rats.^[6] Previous two case studies on this drug in treatment of eczema along with cellulitis showed encouraging results.^[7] So considering above facts and traditional knowledge this case was selected to prove healing efficacy of *Dhanvayas* powder Paste in chronic wound.



Fig.1: Dhanvayas

Case report

A 65 years old male patient visited outpatient department of IPGT&RA Ayurved Research Hospital, Jamnagar with lower leg wound on anterior aspect of left

leg. Patient presents symptoms with pain, serous discharge, oedematous margins, peripheral cellulitis and fever. Patient was suffering from above complaints since last 4 months. Patient had taken treatment that is local dressing with antiseptic solution from local doctor but didn't get relief so he consulted to Ayurved hospital. As patient was worker in salt production industry in coastal area of Jamnagar. So that due to contamination of salted area which is more prone to retain the moist condition and aggravates the symptoms. On local examination the

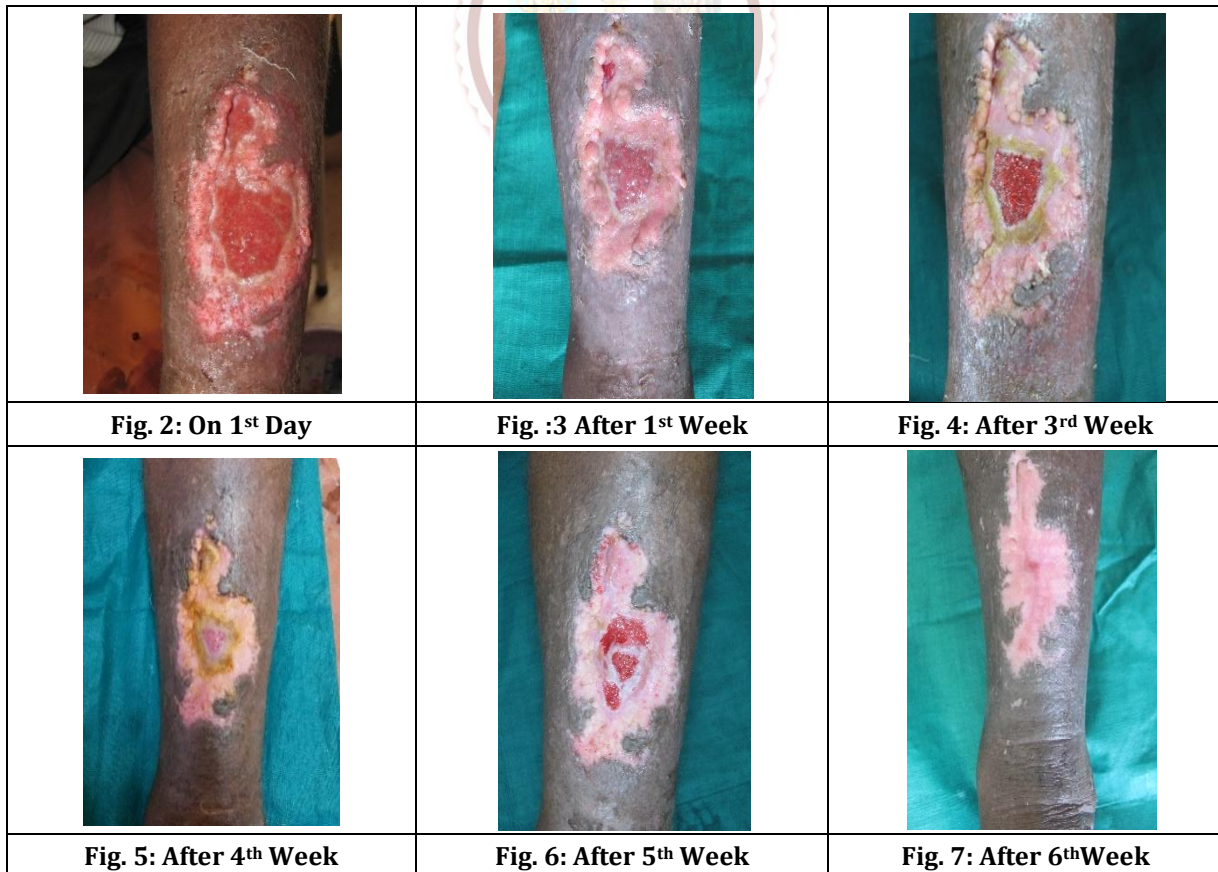
wound measure having length and width of 8cm x 4 cm on tibial region of the left lower leg. Serous discharge with bad odour and surrounding swelling was noticed which is suggestive of local infection. Culture report of discharge showed that presence of pseudomonas and E-coli were isolated from the microbiology lab of the institute. The blood investigations were found within normal limit. (Table-1) Patient had no previous history of diabetes mellitus (DM), hypertension, cardiac disease and familial Tuberculosis.

Table-1: Investigation

Investigation	Values	Investigation	Values	Investigation	Values
Fasting Blood Sugar	101 mg/dl	S.G.O.T.	15 IU/L	WBC	6,000/ Cu.mm.
Post prandial Blood Sugar	88 mg/dl	S.G.P.T.	13 IU/L	Hb	12.3 gm%
S.Cholesterol	176 mg/dl	Alkaline Phosphatase	66IU/L	ESR	10 mm/hr
S.Triglyceride	115 mg/dl	Bilirubin [T]	0.4 mg/dl	Total RBC	4.21 mil./Cu.mm.
HDL Cholesterol	37 mg/dl	Bilirubin [D]	0.2 mg/dl	Platelet count	214 10 ³ /ul
S.VLDL	23mg/dl	Uric Acid	5.4 mg/dl		
S.LDL	116 mg/dl	Total Protein	6.1 gm/dl		
Blood urea	32 mg/dl	Albumin	3.7 gm/dl		
S. Creatinine	1.0 mg/dl	Globulin	2.4 gm/dl		

Dressing of wound

Wound was daily cleaned with *Dhanvayas kwatha* (Decoction) and then applied *Dhanvayas* power mixed with distilled water once in daily morning. Wound was assessed weekly for symptomatic relief in sign and symptoms.



DISCUSSION

Management of *Dusta Vrana* (recurrent cellulitic wound) becomes difficult when it overlays by infection, peripheral cellular infiltration or slough/necrotized tissues. Wound debridement provides healthy environment for wound by removing of unhealthy/slough tissue. Growth of microorganism is suppressed using antibiotic drugs either orally, parentally or as local wound cleaning and dressing. Deal with proper topical wound care and internal medication allow for timely healing. In practice of Ayurveda, many of herbs or herbo-mineral formulations are applying for wound care. At this time among them *Dhanvayas*; a new novel approachable single herb has been attempted for its wound healing activity. *Dhanvayas* possess *Tikta*, *Kashaya*, *Madura rasa*; *Sheeta Virya*; *Kapha-pitta hara*, *Vrana ropan* properties.^[8]

In this case study on 1st day 8cm x4cm sized wound was presented with peripheral erythematous changes, infiltrated, elevated and irregular margins. [Fig.2] Profuse watery discharge was the leading symptom while itching was associated symptom. This reveals that *Kapha* and *Pitta Dosha* were predominantly vitiated. Pain was present only during dressing. As the wound was chronic and symptoms showed infection so swab culture was done which reveals presence of *P. aeruginosa* and *E.coli* infection. Tissue biopsy was also done to exclude malignant changes which revealed pseudo-epitheliomatous hyperplasia with mild dysplasia. So initial 5 days along with local dressing we treated the patient with Inj. Cefoperazone-sulbactam [SKYCEF-SB] and analgesics to control the infection. After application of *Dhanvayas* powder paste itching followed by discharge was reduced remarkably might be due to local effect of *Dhanvayas* powder paste and systematic antibiotic to control microbial growth.

Wound cleaning with *Dhanvayas Kwatha* (Decoction) followed by dressing with *Dhanvayas* powder paste was continued regularly in the morning. After a week of this protocol; wound peripheral erythema was reduced, elevated margins were reduced and wound results in healthy granulation tissue. Wound was inherit into two; upper small and lower large part. Small part was approximately healed and lower part was measured in 3cm x3 cm. [Fig.3].

During 3rd week; wound margins were resulting into small papillomatous changes. Peripheral erythema was almost disappeared. Wound size was not so much reduced [2.8x 2.6 cm] but margins were well established and tissue contraction process was approached. [Fig.4]

During 4th week peripheral unwanted tissues were surgically debrided. Wound was approximately healed with pale fibrosed tissues of 1cm x1cm sized wound. [Fig.4]. In 5th week wound size was increased due to removal of fibrosed tissue but wound was better assessed than earlier. [Fig.6]. Lastly at the end of 6th week of regular dressing with *Dhanvayas* powder paste wound was complete healed with proper contraction and healthy base and healed scar. [Fig.7]

CONCLUSION

This single case study highlighted that *Dhanvayas* powder (*Fagonia cretica* Linn.) possess wound healing activity in chronic infected wound. More number of patients should be treated to validate healing potential of *Dhanvayas* powder paste in chronic wounds.

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