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.

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 Saurastra 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 a number of microorganisms. Fagonia species F. schweinfurthii plant extract gel has therapeutic anti-inflammatory and wound healing effects in albino rats.[4] Previous two case studies on this drug in treatment of eczema along with cellulitis showed encouraging results.[5] So considering above facts and traditional knowledge this case was selected to prove healing efficacy of Dhanvayas powder Paste in chronic wound.

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

**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.

![Fig. 2: On 1st Day](image1)

![Fig. 3 After 1st Week](image2)

![Fig. 4: After 3rd Week](image3)

![Fig. 5: After 4th Week](image4)

![Fig. 6: After 5th Week](image5)

![Fig. 7: After 6th Week](image6)
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, parenterally 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 herbal-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 rasra; Sheeta Virya; Kapha- pitta hara, Vrana ropa properties.\[6\]

In this case study on 1\textsuperscript{st} day 8cm x 4cm 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 Doshya 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 (Decocition) 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 x 3cm. [Fig.3]

During 3\textsuperscript{rd} 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 4\textsuperscript{th} week peripheral unwanted tissues were surgically debrided. Wound was approximately healed with pale fibrosed tissues of 1cm x 1cm sized wound. [Fig.4]. In 5\textsuperscript{th} 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 6\textsuperscript{th} 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.

REFERENCES


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