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Non-healing ulcers treated with Unani formulation: A case series

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Abstract
Non healing ulcers are those which do not heal by conservative therapy within six weeks. The clinically most significant chronic wound in terms of epidemiology and health economics are venous stasis ulcer, wound and wound healing disorders in diabetes mellitus and pressure ulcers in immobile patients with reduced general condition. The treatment of the non-healing ulcers involves treatment of the cause, wound cleaning and dressing properly, maintenance of the personal hygiene, management of the infection and wound closure. The present article reports the wound healing properties and efficacies of the Unani formulation (*Kundur, Mur, Aelwa, and Dam-ul-Akhwain*) in non-healing ulcers.

Keywords: Non-healing Ulcers, Unani, *Kundur, Mur, Aelwa, Dam-ul-Akwain*

Introduction

Case 1

Presentation

A patient, 46 years male, resident of Bangalore, visited NIUM surgical OPD with complaints of wound on bilateral lower limb since 2 years and discharge from wound since 4 months.

Medical history

According to patient he was apparently well 2 years back and then he developed a wound on bilateral lower limbs due to RTA. Wound gradually increases in size and does not healed with conventional conservative treatment. There is no history of pain. Patient also has complaint of serous discharge from the wound. Discharge was not foul smelling.
Patient is known case of rheumatoid arthritis.
History of bilateral short saphenous varicose vein ligation is present
There is no history of Diabetes Mellitus, Hypertension, IHD, and PTB.

Table 1: Wound profile of bilateral lower limbs wound

Characteristics	Findings	
Inspection	**Right foot**	**Left foot**
Site	One at medial malleolus and other just left to it	One at dorsum of the foot and other just above medial malleolus.
No. of wounds	Two	Two
Size of wound	5x5x1cm and 3x2x0.3 cm.	15x10x0.5 cm. and 3x2x0.3 cm.
Edges	Large wound having sloping edges and small one punched out.	Large wound having sloping edges and small one punched out.
Floor	Slough with unhealthy granulation tissues.	Slough with unhealthy granulation tissues
Discharge	Thin serous discharge.	Serous discharge.
Surroundings	Black pigmented	Black pigmented.
Palpation		
Local temperature	Not raised	Not raised
Tenderness	Mild tenderness	Mild tenderness
Margins	Indurated	Indurated
Base	Not defined	Not defined
Bleeding on touch	Absent	Absent
Other findings	All pulsations are present	All pulsations are present

Case 2

Presentation

The patient was 50 years old man with no DM no HTN. He was married and had a personal history of smoking of 10 bidis per day since last 30 years.
The patient presented to NIUM with an ulcer on the outer aspect of the left heel below and posterior to the lateral malleolus that had been present for 2 months. He visited NIUM on 30-12-15. The ulcer had shown variations in severity over the period of 2 months. The ulcer was rapidly deteriorating after the recent debridement by a regional clinician.

Table 2: Wound profile of left lower limb.

Characteristics Inspection	Findings
Site	Below and posterior to the left lateral malleolus
No. of wounds	One
Size of wound	5x4 cm.
Edges	Sloping edges
Floor	Yellowish fibrous slough
Discharge	Slight and scanty purulent discharge
Surroundings	Slightly pigmented
Other findings	
Palpation	
Local temperature	Not raised
Tenderness	Present
Margins	Indurated
Base	Heel of the left foot.
Bleeding on touch	Absent
Other findings	All pulsations present.

Medical history

The patient did not have any extensive medical illness like T.B, HTN, Bronchial asthma and DM. The patient observed a small pin point black spot on the lateral aspect of the left heel 4 months ago which increased in size with the passage of time. It was situated 5 cm below and posterior to the lateral malleolus. Initially it was not associated with pain but after 2 months of appearance of it, the patient felt pain which increased while walking and standing and reduced on rest. Then the patient visited nearby hospital. According to the patient, doctor excised the black dot and dressed the site. After that the patient visited the same hospital 3 to 4 times for dressing but the wound did not heal. After excision, the wound rapidly increased in size with association of pain despite having been dressed for 3 to 4 times. Medications being taken by the patient were some analgesics and antibiotics. The patient was amputated at right knee joint 2 years back for spreading ulcer. The patient does not have any drug allergy.

Wound profile

The patient presented at NIUM for the management of his ulcer. He was found to have an ulcer which was located on the lateral and outer aspect of the heel of left foot 5 cm below and posterior to the lateral malleolus. The local examination of the ulcer is being described below. The main purpose of the initial examination of the wound was to establish the assessment parameters of wound and then response to Unani formulation (Kundur, Mur, Aelwa, and Dam-ul-Akhwain). The aim of the treatment was to safely administer the Unani formulation to the wound under proper aseptic precautions on every 3rd day for 1 month in order to facilitate the wound healing and assess the wound healing property of formulation.

Procedure

The treatment was commenced on the day the patients were admitted to the hospital. The patients were also educated how to keep the affected part clean, hygienic and elevated as advised. The wound was first cleaned with normal saline and sterile gauze piece. Debridement of the yellowish unhealthy tissue and slough was done. After that the wound was again washed with N.S and dried with sterile dry gauze piece. Dressing with Unani formulation *Kundur* (*Boswellia serrarta)*, *Mur (Commiphora myrrh)*, *Aelwa* (*Aloe barbadensis)*, and *Dam-ul-Akhwain* (*Pterocarpous marsupium)* was done with full aseptic precaution. Dressing was changed on every 3rd day and wound was assessed by assessment parameters on every 12th day along with photographs of the affected part.

Discussion

Non healing ulcers are those which do not heal by conservative therapy within six weeks and has failed to achieve the anatomic as well as functional integrity over a period of 3 months. The cause of the chronicity varies depending upon the genesis of the wound, depth, involvement of underlying structures and wound care. However the basic reason is inadequate circulation. Many a time's improper primary handling leads to complications. Therefore, all these factors must be kept in mind while assessing the wound to plan future management of the wound. The etiologies in order frequency are trauma, infections, postoperative dehiscence and electrical burn, secondary to varicose vein, trophic changes and peripheral nerve involvement. India has a population of 42 million of diabetic patients and annual incidence of foot ulcer is around 4%. 75 to 80% of all non-traumatic amputations are done per year in diabetic patients. The vascular ulcer and diabetic ulcer in the foot account for 98% of the lower extremity wound.[1] the incidence of the pressure ulcer ranges from 2.7% to 9% in acute care setting in comparison to 2.4% to 23 % in long term care facilities [2].

It is essential to know that the term *Qarha (Ulcer)* is concerned with the term *Jarahat (wound)* which are associated with pus within it. And the *Jarahat (wound)* is defined as *Tafarruk-e-ittesal (damage)* of the *lahem (muscles)*. The causative factors of the *Jarahat (wound)* may be *berooni (external)* and *androoni* (*internal)*. Therefore any *Jarahat* in which there is pus formation is called as *Qarha*.

There are three types of *Qurooh* in *Unani* literature.

1. *Qurooh-e-baseet* (*Simple Ulcer)*: Those ulcers which are free from those factors which delay in wound healing.
2. *Qurooh-e-murakkab* (*Compound Ulcers)*: Those ulcers which are associated with blackening of tissues, pain and suppuration.
3. *Qurooh-e-asratul indamaal* (*Non Healing Ulcers)*: Those ulcers whose healing is delayed and associated with more damage and destruction of the local part having different types of causes [3].

In Unani system of medicine there are many drugs which show wound healing properties like *Mujaffiff*(desiccant), *Mundamil-e-Qurooh*(healing drugs) and *Khatim* (cicatrizant). All these properties are found in *Kundur, Mur, Aelwa, Dam-ul-Akhwain*. [4, 5, 6, 7] On the basis of these properties these Unani drugs have been selected to explore the efficacy in non-healing ulcers.

Case 1

Discharge from wounds decreases in 3-6days of dressing and there was no discharge after 20 days. There was growth of red healthy granulation tissues within two weeks and on right foot large wound was about to heal completely after 2 months of dressing with Unani formulation.

In left foot ulcer the exposed tendon was completely covered with red healthy granulation tissue following good healing with epithelial covering in 2nd week. Right foot small wound was healed completely in comparison to left side which was larger in size.

Left foot ulcer

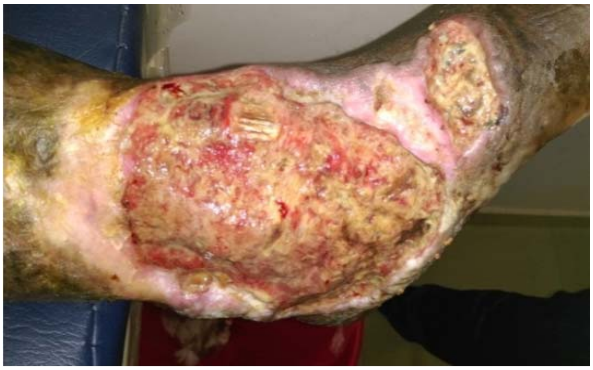

Fig 1: State of wound before treatment

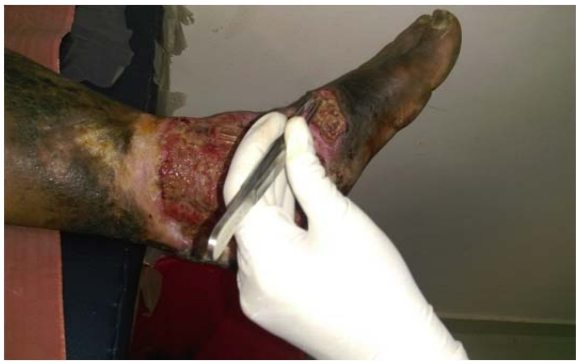

Fig 2: Debridement on the day of treatment

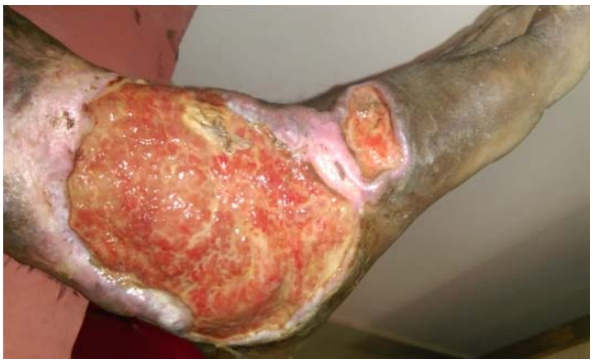

Fig 3: Wound at 12th day of treatment

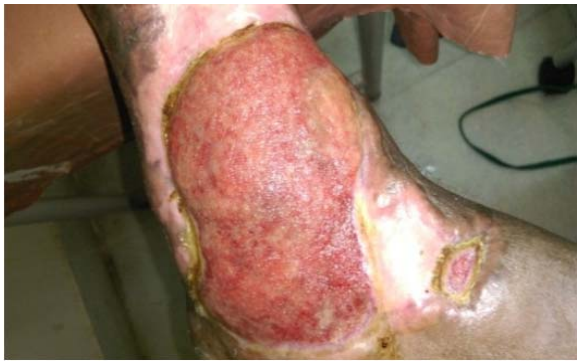

Fig 4: Wound at 24th day of treatment

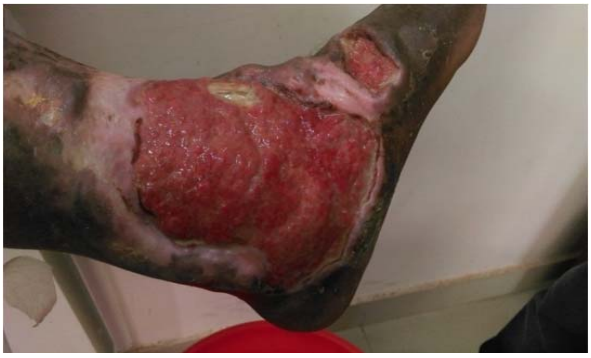

Fig 5: Wound at 36th day of treatment

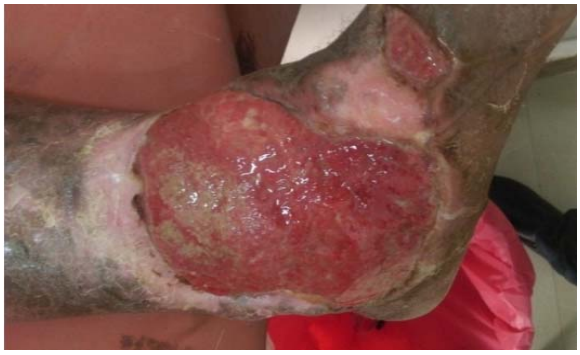

Fig 6: Wound at 48th day of treatment

Right foot ulcer

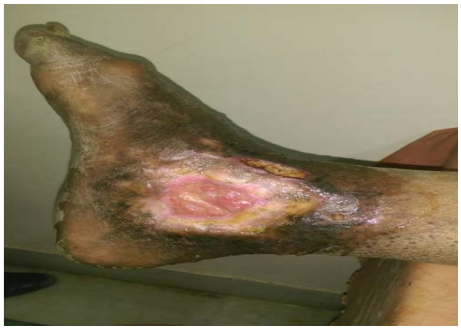

Fig 1: Wound state before treatment

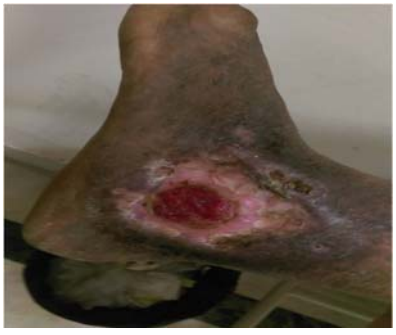

Fig 2: Wound at 12th day of treatment

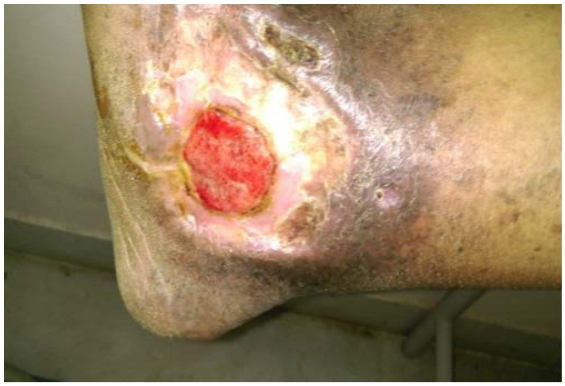

Fig 3: wound at 24th day of treatment

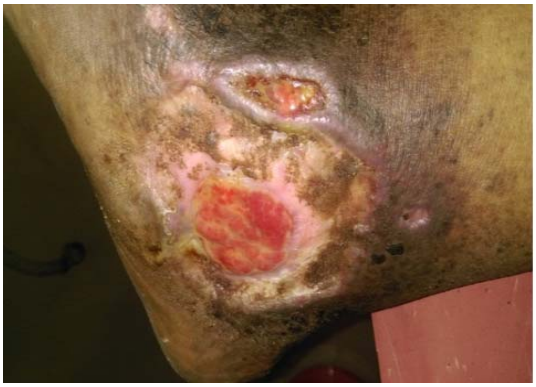

Fig 4: wound at 36th day of treatment

Case 2

The patient was scheduled for 1 month treatment. The patient responded slowly in initial time. The wound has not responded to any conventional treatment up to this time, but became one of the best responding when 3 to 4 settings had been done with Unani formulation. The promising response was observed at 30 day treatment.

Initially the wound area was approximately 3x4 cm in size but subsequently there was reduction in the size of the wound. The depth of the wound was initially 0.5 cm but in later stages it reduced up to 0.25 cm. The floor initially was covered with yellowish unhealthy granulation tissues which later were cleared off after application of the Unani formulation. The surrounding pigmented area also showed promising changes i.e. retained its normal texture and color. In response to good progress shown at 30 day of treatment we decided to continue a further 15 day treatment, but the patient had to go due to some emergency conditions and was discharged on request. Furthermore he did not visit to follow up again. In both cases it is noticed that discharge from wounds decreases after 3-6 days of dressing and signs of healing started within a week with no slough formation and epithelialization started in two weeks. In Unani system of medicine there are many drugs which show wound healing properties like *Mujaffiff* (desiccant), *Mundamil-e-Qurooh*(healing drugs) and *Khatim* (cicatrizant). All these properties are found in *Kundur (Boswellia serrarta), Mur (Commiphora myrrh), Aelwa (Aloe barbadensis), Dam-ul-Akhwain (Pterocarpous marsupium).* [4, 5, 6, 7] Gum-resin of *Kundur (Boswellia serrarta)* has antiseptic, anti-inflammatory, antiatherosclerotic properties. A pyrazoline derivative of *Kundur (Boswellia serrarta)* is reported to have maximum anti-inflammatory activity [8]. *Mur (Commiphora myrrh)* has been reported to have antiseptic, bacteriostatic, antiviral, astringent and stimulant properties [9]. *Aelwa (Aloe barbadensis)* gel is known to have topically emollient, anti-inflammatory, antimicrobial activities. Therefore *Aelwa (Aloe barbadensis)* is used for wound healing and sunburn [8] The ethanolic and methanolic extracts of the *Dam-ul-Akhwain (Pterocarpous marsupium)*exhibits significant *in-vitro* antimicrobial activity against Gram-positive and Gram negative bacteria and some strains offungi [9]. On the basis of these properties these Unani drugs have been selected to explore the efficacy in non-healing ulcers. There no oral drugs given during a case study only local application of powder on wound is done.

Conclusion

The Unani formulation **(**Kundur, Mur, Aelwa, and Dam-ul-Akhwain**)** as a powder form proved to be very efficient and promising dressing material which is easily available. Therefore case showed the above said formulation has promising healing properties. It might prove efficacious dressing material for the patients of non-healing ulcers in terms of decreasing the healing time and reducing the patient's discomfort. It can be used at home with follow up on OPD base. Elaborate trials using controlled study in future may lead to a novel drug formulation for wound healing in non-healing ulcers.

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