

## WOUND HEALING AND CURRENT TREATMENT TECHNIQUES

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**Abstract.** The wound is defined as the degradation of the integrity of epithelial tissue. This table may also attend to support the damage of the tissues. In general, the wound biting, firearms, flammable, cutting and piercing substances that occur will cause traumas. Wound healing is a complex biological process. Hemostasis, inflammation, proliferation and remodelling takes place in 4 stages. Scar treatment basically consists of six basic steps. These are; prevent further contamination of the wound, removal of dead tissue, removal of impurities, to ensure proper wound drainage, the creation of the wound bed, and finally selecting the appropriate method for the closure of the wound. In this study, the current treatment in acute and chronic wounds is blessed with one of the methods.

**Keywords:** *current, treatment, wound healing.*

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### 1. Introduction

The wound is defined as the degradation of the integrity of epithelial tissue. This table may also attend to support the damage of the tissues. In general, the wound biting, firearms, flammable, cutting and piercing substances that occur will cause traumas [34, 37]. Wound healing is a complex biological process. There are many factors classification of wounds. The most important of these is time. These outside causes; localization, degree and treatment. Affecting wound healing; heat, bleeding, radiation, moisture, infection, local factors such as protein, vitamin C, hormones, steroids, anemia, and general factors such as age. Hemostasis, inflammation, proliferation and remodelling takes place in 4 stages [6]. Normal healing of acute wounds within the period of anatomical and functional repair of the wound occurred in a compatible format for the types. Under suitable conditions, the healing takes place within about 20 to 30 days. Normal healing time for chronic wounds that occurred within the period of an inconvenience that takes time to heal wounds or to heal in longer than expected [4, 12, 32]. Scar treatment basically consists of six basic steps. These are; prevent further contamination of the wound, removal of dead tissue, removal of impurities, to ensure proper wound drainage, the creation of the wound bed, and finally selecting the appropriate method for the closure of the wound. Wound cleaning is to shave the hair in the area first. Asepsis and should be antisepti of the region. For this, povidone iodine, chlorhexidine antiseptic substances composed of such as. Of wastes, draining the wound exudates to be drained in accordance with the speeds up the healing process [3, 13, 17].

1. **Debridement:** Necrotic (dead) tissues, especially when exposed to chronic wounds, cause a high bacterial concentration in the area, which delays wound healing [10]. The debridement method is a method that reduces necrotic or dead

tissues in the wound area, the residues of the metabolism to the extent that they are observed in the living tissue area, and reduces the density of bacteria delaying wound healing and accelerates wound healing [24, 29]. Surgical, mechanical, otolitic, enzymatic and biologic are grouped into 5 main groups. Each method has its own advantages and disadvantages [36].

2. **Wound Dressings:** Wound dressings should be chosen according to the nature of the wound. Among the major features of the wound cover; heat and humidity control, removal of odor, to ensure the wound debrideman, micro-organisms and a physical barrier against external factors, include the prevention of hypertrophic scar formation and pain reduction [27]. Basically the purpose of all these features is to prepare a suitable environment for wound healing. Wound dressings that are used in material, physical form and active ingredient content are classified according to; according to the material used for cover; hidrokolloid, alginate dressings, hydrogels according to the shapes and physical cover; foam and transparent films, based on the content of active ingredient, antibacterial, growth factors and vitamins-minerals containing wound cover [31, 40].
3. **Vacuum Assisted Closure Therapy:** The aim of this treatment to the sore area for 5 minutes and apply a negative pressure of 125 mmHg for eliminating this pressure for a period of 2 minutes to be cleaned from the area of edema fluid, improvement of local perfusion, and stimulation of cellular proliferation and coagulation of the bacterial colonization of the control provision [7,11, 23, 39].
4. **Platelet Rich Plasma Treatment:** This method of platelet rich plasma obtained by centrifugation of the blood from the blood of the patient is re-injected. PRP has an important place in wound healing [22]. Platelets are also sources and regulators of growth factors involved in wound healing other than hemostasis. Allows the activation of thrombin, growth factors, and factors can cause a rapid release [4, 28]. Monocytes, macrophages, chemotactic for fibroblasts and has a feature. Contained in the region of the wound endothelial growth factor (EGF) and VEGF (Vascular Endotelyal Growth Factor) revascularization provides. PDGF (Platelet Derived Growth Factor) in extracellular matrix formation, TGF- $\alpha$  and  $\beta$  (Transforming Growth Factor -  $\alpha$  and  $\beta$ ) through collagen synthesis helps [19, 32, 37].
5. **Amnion Liquid Derivative Stem Cell Therapy:** Amniotic fluid mesenchymal cells regulate the functions of proinflammatory mediators. Highly contains hyaluronic acid. Hepatocyte Growth Factor (HGF), VEGF (Vascular Endothelial Growth Factor), and VEGF-A (Vascular Endothelial Growth Factor-A) stimulate factors that increase proliferation and stability of endothelial cells [8, 28]. In addition, proliferation of keratinocytes increases extracellular matrix development and fibroblastic activity. In this respect, it stimulates inflammation in acute and chronic wounds, enhances epithelization, regulates the therapeutic and regeneration activities such as formation of granulation tissue, angiogenesis [35].
6. **Ozonated Oil Usage:** It is often used to disinfect wounds and contribute to healing. PDGF plays an active role in wound healing, leading to an increase in TGF-beta and VEGF levels [9]. Ozonated oils have antifungal, antimicrobial and antiseptic effects. Antimicrobial effects in particular; Staphylococcus aureus, Escherichia coli, Pseudomonas aeruginosa and Bacillus subtilis bacteria. Because of its high unsaturated fatty acid content, olive oil and St John's oil are used for this purpose [25, 33].

7. **Using Honey and Propolis:** The effects of honey on wound healing have been known for many years and have been scientifically proven in recent years. Apart from antimicrobial effect, debrideman, anti-inflammatory, anti-fungal, anti-amoebic, antiviral, anti-edematous, wound epithelialization and granulation are accelerating effect [16, 20, 21, 38].
8. **Use of Nigella Sativa:** Nigella sativa has been used in the treatment of a wide variety of diseases in the Middle East, North Africa and Asia for centuries. There are pharmacological effects such as antipyretic, antibacterial, antiparasitic and antiinflammatory. Its thymoquinone has a protective antioxidant property against oxidative stress [5, 26].
9. **Use of Hypericum Perforatum:** Hipericum Perforatum (HP) contains flavonoids, phenolic acid, etheric oils, carotene and vitamin E. Each content has a different effect. Especially phenolic acid derivatives hyperforin has antibacterial, analgesic, anti-inflammatory and antioxidative effects. Increases collagen synthesis by increasing fibroblast migration and stimulation without increasing mitotic activity [1, 30].
10. **Combination of Curcuma Longa Extract with Refined Sheep:** Curcumin, derived from the roots of the Curcuma Longa plant, significantly accelerates wound healing through early epithelization, improved neovascularization, increased cell migration, including fibroblasts, myofibroblasts and macrophages, and high collagen content. It also plays an important role in healing by stimulating the production of TGF- $\beta$  from growth factors. Refined sheep oil is saturated and contains polyunsaturated fatty acids such as linolenic (n-3), linoleic (n-6) and oleic acid (n-9). Among the multiple fatty acids called PUFA, n-3 and n-6 play an important role in wound healing by stimulating epithelial cell proliferation [15, 18].
11. **Use of Silver Sulfadiazine:** Silver has been used for centuries to treat various diseases and to protect them from these diseases. Free silver ions have particularly antimicrobial activity. Silver sulfadiazine; Silver nitrate, and mafenide acetate, and causes some systemic complications such as neutropenia, erythema, crystalloid and methemoglobinemia. In addition, atrophic or hypertrophic scarring, renal toxicity and the development of resistant microorganisms are also known effects. All these effects are observed when applied for longer than 3 weeks. Besides silver antimicrobial effect, anti-inflammatory effect is also available. The matrix shows this effect by inhibiting Metallo Proteases (MMP). It is used especially to prevent the infection of the region in burn wound heals locally [2, 14, 16].

## 2. Conclusion

As a result, the concept of time is the most important factor in wound healing as mentioned in the introduction, and the treatment options are accordingly selected. Although each method appears to be independent from each other, it is foreseen that the method is basically interlinked and that a method according to the state of healing is abandoned and another method is applied.

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