
BENEFICIAL EFFECTS OF HERBAL MEDICINES ON WOUND HEALING

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Abstract

Herbs dating back at least 5000 years have been central to both conventional and non-traditional ways of medicine. Herbal medicines' continuing appeal can be explained by the belief that herbs produce few unintended side effects. More recently, in order to show the usefulness of natural remedies and to concentrate on a deeper understanding of their modes of action, scientists are gradually dependent on modern research techniques and evidence-based medicine. However, information on the quantitative benefits to human health of herbal medicinal products is still scarce or scattered, thus restricting their proper valuation. Modern herbal plant formulations are also used for wound healing purposes, including a wide variety of various skin-related disorders. In wound care, herbal remedies include disinfection, debridement and the provision of an adequate atmosphere to promote the normal process of healing. We study here on few plants across the globe used as wound healing agents in herbal medicine. Therefore, the purpose of this review is to analyse herbal medicinal products which offer a high potential for the effective treatment of minor wounds.

Keywords: Healing, Herbal, Pores, Skin, Wound, Tradition, Culture, Health care.

I. INTRODUCTION

The human pores and skin is the biggest organ inside the body and represents its first line of protection. Besides safety, the pores and skin has two different essential capabilities: regulation and sensation. More particularly, it gives protection from mechanical affects and stress, limits the have an effect on of variations in temperature, fights micro-organism infections, restricts radiation outcomes, and stops the doorway of chemical compounds. As the most important organ within the frame, the pores and skin also plays an critical role in numerous physiological tactics, along with regulation of body temperature (via sweat and hair) and changes in peripheral stream and fluid stability. It's also involved inside the synthesis of nutrition D, for which it acts as a reservoir.

With an extensive network of nerve cells, the pores and skin permits detection and relaying of changes within the surroundings (warmness, cold, contact, and pain). Damage to these nerve cells is known as neuropathy and effects inside the lack of sensation in affected areas. Due to all the aforementioned and different functions, the upkeep of pores and skin exceptional is of top significance to preserve a wholesome body. A wound is defined because the disruption of the mobile and anatomic continuity of a tissue and may occur due to physical, chemical,

thermal, microbial, or immunological tissue trauma. Wounds can compromise patients' nicely-being, self-picture, working ability, and independence. Powerful wound management is consequently essential no longer handiest at the character however additionally on the community degree [1].

II. MEDICAL PLANTS TRADITIONALLY USED IN WOUND HEALING

Nature has been a supply of medicinal treatments for heaps of years, and plant-based totally structures hold to play an crucial role within the primary healthcare of eighty% of the arena's underdeveloped and growing international locations. Many flowers and their extracts were used historically due to their awesome ability for control and treatment of wounds. Herbal marketers set off healing and tissue regeneration via multiple linked mechanisms. The so-known as phytomedicines are low cost, and that they in general reason minimum undesirable facet results. But, growing focus of their activities, and ability and viable protection issues, factor out the want for their clinical standardization, validation, and systematic protection assessment earlier than efficient introduction to wound care. In recent years, substantial research has been carried out in the area of wound recovery and control via medicinal plant life [2].

Achillea (Family: Asteraceae). Yarrow has been used as a remedy by way of many cultures for masses of years. Exact antibacterial activity against *Shigella dysenteriae*, mild interest towards *Streptococcus pneumoniae*, *Clostridium perfringens* and *Candida albicans*, and vulnerable hobby against *Mycobacterium smegmatis*, *Acinetobacter lwoffii* and *Candida krusei* became reported. Yarrow turned into also verified to have a massive effect (maximum possibly via protease inhibition [3].

Aloe vera (Family: Liliaceae). Aloe vera has been used for medicinal functions in numerous cultures for centuries, particularly in Greece, Egypt, India, Mexico, Japan and China. 3 thousand and five hundred years ago, Egyptians already used aloe extracts in treating burns, infections, and parasites. Aloe gel was confirmed to useful resource wound restoration, in treating ulcers and burns by using forming a protective coating at the affected regions, consequently dashing up the recuperation process. Numerous materials of Aloe vera stimulate wound restoration and have activity (via distinctive connected mechanisms, cytokine production and enzyme inhibition) [4].

Angelica sinensis (Family: Apiaceae). Chinese angelica is widely used in chinese traditional medicinal drug. Its isolate has been observed to stimulate wound restoration thru its foremost lively factor, ferulic acid (appearing proliferation-selling) and growth the power of the healed wounds. This impact is related to angelica's analgesic and antimicrobial houses [5].

Avena (Family: Poaceae). Oats were acknowledged for greater than 4000 years as food, whilst its use in conventional medicine dates returned to the 12th century. For cutaneous use, fruits of *Avena* are organized as colloidal oatmeal' as defined in USP (30th or later). In vitro investigations are indicative of hobby of several oats arrangements. Pasta made with oats flour blended with beer yeast is used on infected ulcers and wounds to facilitate wound recuperation.

Azadirachta indica (Family: Meliaceae). Neem has been utilized in India for over millennia due to many pharmacological activities, especially for skin sicknesses. Liquid neem extracts possess antibacterial, antifungal, antiviral, activities. Neem oil aids the building of collagen

and keeps pores and skin elasticity. It also continues the wound moist all through the recovery system. All noted mechanisms contribute to acceleration of wound restoration[6].

Calendula officinalis (Family: Asteraceae). In vitro pharmacological studies have shown antiviral, antigenotoxic, homes of marigold. It additionally possesses antimicrobial activity towards *Bacillus subtilis*, *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Candida albicans*, *Sarcina lutea*, *Klebsiella pneumoniae*, and *Candida monosa*. In suspension or in tincture, it is used topically for decreasing infection, manager of bleeding, and to facilitate healing of poorly healing wounds.

Cedrus deodara (Family: Pinaceae). Deodar possesses antimicrobial, astringent, and wound restoration sports. it is in particular powerful in treatment of inflamed wounds. Oil extracted from the bark and twigs has been used as astringent, while sap and oil are often used to treat psoriasis and eczema.

Centella asiatica (Family: Mackinlayaceae). Brahmi is used substantially inside the remedy of leprosy and a bunch of pores and skin conditions, inclusive of exclusive wounds. In experimentally brought on open wounds in rats, the aqueous extract of *Centella asiatica* expanded collagen content material and thickness of the epithelium. Topical administration of the aqueous extract similarly elevated cell proliferation, promoted collagen synthesis at the wound site as evidenced by way of the boom in DNA, protein, collagen content material of granulation tissue, and in tensile energy. Via all cited mechanisms, *Centella asiatica* promotes wound recovery and facilitates restore of the connective tissues. Ointments made from *Centella* leaves are used to deal with leg ulcers, decubitus scabs, gangrene, faulty scars, fistula, disturbing and surgical wounds, burns, and skin grafts. Cutaneous powder is a not unusual adjuvant on the cicatrization of pores and skin accidents [7].

Chamomilla recutita (Family: Asteraceae). Chamomile has been used for centuries as an antimicrobial, antioxidant, and as a mild astringent and wound healing remedy. Chamomile contributes to wound drying and hastens epithelization. It become shown that its extracts useful resource wound restoration via other mechanisms as nicely, i.e. Thru growing the granulation tissue weight and hydroxyproline content, by way of improving the rate of wound contraction and wound-breaking energy.

Chromolaena odorata (Family: Asteraceae). Aqueous extracts and decoctions from *Chromolaena* leaves had been traditionally used throughout Vietnam in treatment of smooth tissue and burn wounds. This liquid education complements hemostatic hobby, inhibits wound contraction, stimulates granulation tissue and re-epithelization procedures, and may consequently useful resource wound healing, and minimize post-burn scar contracture in addition to deformities [8].

Commiphora myrrha (Family: Burseraceae). Myrrh seems to be one of the oldest drugs, considering the fact that its use changed into recorded within the recipes from historical Rome and inside the texts of Hippocrates. Myrrh is also noted in each the Bible and the Koran. It has antibacterial and antifungal activities towards numerous bacteria and funguses, as well as antianti-inflammatoryanti inflammatory, neighborhood anesthetic, and analgesic activities. The contemporary pronounced cutaneous use of myrrh tincture is in topical utility for remedy of adlescent wounds, abrasions, and to treat skin irritation.

Curcuma longa (Family: Zingiberaceae). Turmeric possesses antibacterial, antifungal, analgesic, sports (curcuminoids decrease prostaglandin formation and inhibit leukotriene biosynthesis through the lipoxygenase pathway). The activity and the presence of vitamin A and proteins in turmeric bring about early synthesis of collagen fibers via mimicking fibroblastic hobby. Juice of the clean rhizome is normally implemented to fresh wounds, bruises, and leech bites.

Euphorbia hirta (Family: Euphorbiaceae). The aqueous plant extract indicates analgesic activities and inhibition of platelet aggregation. Ethanol extract of the complete herb turned into determined to possess vast wound healing interest.

Ginkgo biloba (Family: Ginkgoaceae). Extracts of leaves have been used therapeutically for centuries. Ginkgo reveals an expansion of pharmacological activities, such as increase in blood fluidity, antioxidant, membrane stabilizing, improvement in cognition, and pro-healing. Its preparations boom granulation tissue breaking strength and promote epithelization [9].

Helianthus annuus (Family: Asteraceae). In traditional medicine, the sunflower herb is used by Indian tribes for treating inflammation of the eyes, sores, tiger bites, and to treat bone fractures. The whole plant ethanol extract applied on the excised wounds of rats led to significantly reduce recovery times, which become explained through faster and multiplied accumulation of mucopolysaccharides.

Hydnocarpus wightiana (Family: Achariaceae). The oil from chaulmoogra seeds has been widely used in Indian and chinese conventional remedy. The wound recuperation impact is reportedly related to progressed collagenation and electricity of scar tissue, in addition to thru promoted epithelization.

Hypericum perforatum (Family: Hypericaceae). St. John's wort has a history of safe and powerful usage in lots of folk and natural remedies. It has antiseptic, analgesic, astringent, and antibacterial activities. It additionally promotes healing when used externally on minor wounds. The pro-healing motion of *Hypericum perforatum* tincture is evidenced by the improved epithelization segment, with an growth in the wound contraction fee and the granulation tissue breaking strength. Because of the stated consequences, the tincture has a longstanding use as an resource in restoration of adlescent wounds.

Jasminum auriculatum (Family: Oleaceae). The juice of the leaves changed into discovered to promote wound restoration through progressed tensile electricity within the early levels of healing and due to acceleration of mucopolysaccharide accumulation.

Pterocarpus santalinus (Family: Fabaceae). The wood of the pink sanders is traditionally used because of astringent and tonic residences. Ethanol extracts of the leaf and stem bark of *Pterocarpus santalinus* has proven good sized decrease inside the length of epithelialization and an boom within the fee of wound contraction. Wound recuperation houses of the purple sanders also are related to improved collagenation and breaking strength, and increased granulation tissue dry weight and hydroxyproline content.

Rosmarinus officinalis (Family: Lamiaceae). Rosemary is traditionally used for wound management and treatment. It reduces infection and enhances wound contraction, re-epithelization, and regeneration of granulation tissue, angiogenesis, and collagen deposition [10].

Tridax procumbens (Family: Asteraceae). The juice of *Tridax procumbens* speeds up two stages of wound recuperation: epithelization and collagenation, ensuing in less rigorous scar formation and granulation [11].

III. CONCLUSION

Many flora promote the pores and skin's natural restore mechanisms and consequently have a huge capacity for therapeutic use in wound care. As our familiarity with herbal extracts and isolates will increase and at the same time as we rent generally used medical methodology to look at flora and their extracts from the physiological and pharmacological point of view, the number of herbal products for wound remedy is step by step growing. Scientific proof of the healing effects of herbal merchandise has led to observe of many more herbs for his or her healing, either curative or preventative, roles. Similarly studies should goal on the isolation and identification of unique lively materials from plant extracts, which can also reveal compounds with higher therapeutic fee. Any such mixture of conventional and modern-day understanding can produce novel drugs for wound recuperation with drastically lowered undesirable aspect outcomes.

IV. REFERENCES

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