Chapter 12
Traditional Herbs With Potential Wound Healing Properties

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ABSTRACT

Medicinal plants have been necessary to conventional and non-customary types of prescriptions dating back to somewhere around 5000 years ago. Researchers progressively depend on current logical techniques and proof-based medication to demonstrate the viability of herbal medicines and spotlight on a better comprehension of the systems of their activity. Notwithstanding, data concerning quantitative human health advantages on natural remedies is yet uncommon, constraining their legitimate valuation. Traditional medicines are regularly utilized for the wound-healing process covering a wide zone of various skin-related infections. This chapter will give information about the wound-healing capability of plants that are useful for the advancement of new wound-healing formulations.

INTRODUCTION

India is the most extravagant nation in the world for its natural assets. From the ancient time larger part of the general population and network relies on customary prescription. Studies uncovered that plants are one of the major source of compounds that are bioactive and have antimicrobial, anticancer properties (Mallik, *et al.,* 2014). Plants are having incredible restorative significance for individuals because of their different pharmacological properties. Today, substantial numbers of medications are created from different plants which are dynamic against number of problems.

DOI: 10.4018/978-1-6684-3546-5.ch012

Although synthetic medications are broadly incorporated yet they create a few adverse symptoms to the users. At that point herbal prescriptions are successful because of nontoxic nature and furthermore microorganisms are nonresistant to them (Sarkar, *et al.,* 2013). Under this thought there is much developing enthusiasm to find novel herbal medications for the treatment of irresistible infections.

Wound can be simply defined as the breakdown of protective function of the skin and tissues. Its infection represents invasion of tissues by one or more species of microorganisms. Several medicinal plants have enormous capability in healing of wounds. The medicines which are prepared by these medicinal plants are reportedly safe and cost effective as compared to synthetic drugs; these are considered as good pharmaceuticals. These alternate medicines can combat with drug resistant microbes and exhibits strong disease curing potential. For example: *Aloe vera*, its gel constitutes of several enzymes, carbohydrates, amino acids, vitamins and minerals which gave prominent results in chronic wound management (Rodriguez *et al.,* 1988; Kaufman *et al.,* 1988).

Herbal Antimicrobial Agents Have Following Advantages

- Natural receptors are present in the human body for the plants bioactive compounds.
- Herbal antimicrobial agents are reportedly safe as compared to the synthetic drugs.
- It is difficult for the microbes to acquire resistance against herbal drugs.
- These herbal drugs are cost effective.

Considering these qualities of herbal drugs, several herbal pharmaceutical companies (e.g. Patanjali, Himalaya, Charak etc.) extensively manufacturing lots of herbal drugs for several medical conditions as possible. These include several drugs, ointments, antimicrobial agents for wound care and its healing.

WOUND INFECTION

As far as the largest organ of the human body has been concerned skin is named first which is made up of epidermis, dermis and subcutaneous tissues. Several vital functions are performed by the skin which includes protection against external factors (Kanitakis, 2002). The surface of skin is not sterile even when it is clean due to the presence of mixed community of microbes known as the normal micro-flora. Physical breakdown of the protective function results in wound i.e. the loss of the continuity of underlying connective tissues. Due to loss in continuity of this protective barrier pathogens are able to invade a tissue which leads to wound infection. From microbiological point of view "a wound infection is the result of physical disruption of the skin which leads to the contamination, colonization and infection by pathogens."

Number of factors contributes to pathogenicity of the microbes which can be easily influenced by genetic and environmental conditions. Virulence of the microbes is due to their enzyme production, structural features and the products formed by their metabolic process contribute to pathogenicity. The capsule containing bacteria (e.g. *Klebsiella pneumoniae* and *Pseudomonas aeruginosa*) remain protected against complement activation as well as phagocytosis. Pili those are present in several bacteria (e.g. *Pseudomonas aeruginosa* and *Escherichia coli*) helps them for the attachment to the host cells. Cell wall of bacteria contains several polysaccharide compounds which help bacteria to adherence at extracellular matrix components (e.g. collagen) in host tissue.