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Wound healing activity studies on some medicinal plants of Western Ghats of South India

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Wound can be traced back to early civilization and many of these treatments were based on the use of herbal remedies. Approximately one third of all the traditional medicine in use is for the treatment of wounds and skin disorders, compared to only 1-3% of modern drugs. A large number of plants, plant extracts, decoctions or pastes are equally used by tribals and folklore traditions in India for treatment of cuts, wounds and burns. Herbal medicines are crucial in wound healing since they initiate disinfections, debridement and providing moist environment to encourage the establishment of a suitable environment for the natural healing process. Many herbs contain anti-bacterial substances that keep wounds from being infected and some natural herbs even promote skin growth and help the injured tissue to regenerate and heal faster. There are only few prospective randomized controlled trials that have proved the clinical efficacy of the traditional wound healing agents. However for many of them scientific evidence is lacking. The present study deals with the in vivo wound healing activity of the ethanolic extracts of eight Medicinal plants of Western Ghats of South India.

The plants were collected from the various places of the Western Ghats of South India, identified by a well qualified Taxonomist and Herbarium specimens were preserved. The appropriate parts of the medicinal plants were shade-dried, powdered and extracted successively with petroleum either (40o-60oC), benzene, chloroform, ethanol and water using Soxhlet apparatus. The last trace of solvents was removed under reduced pressure by rotory enoporator. The dried crude ethanol extracts of the plants were used for the study.

Male Wistar albino rats (180-200g) were selected for the acute toxicity and wound healing activity studies. The animals were divided into three groups of six rats each. The ethanol extract of the plant parts have been subjected for the wound healing activity studies by ocute toxicity studies, by excision wound model and by dead space wound model. Granulomatous tissue was stored in 10% formalin and used for histopathological examinations; while the other part of the granulomatous tissue was used for determination of tensile strength.

An excision wound margin was traced after wound creation by using transparent paper and area by graph paper. Wound contraction was measured in each 2 days interval until complete wound healing and expressed in percentage of healing wound area. The epithilization time was measured from initial day. Wound healing activity has been assessed by the rate of wound emtraction, tensile strength and weight of granulation tissue formed. All the findings will be discussed in detail.

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