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Therapeutic potential of some Medicinal plants on wound healing

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Abstract

The present study deals with the study of the medicinal plants used by the old aged common people of the rural villages of Purba Medinipur district, West Bengal, India. The paper provide a brief account of four medicinal plant species, their extracts have immense potential for the treatment of wounds healing. Their natural agents induce healing and regeneration of host tissue by variable mechanisms. These plants extract exhibited also anti bacterial activity during wounds healing. This research aimed at promoting the conservation of these medicinal plants as well as wound healing purpose associated with them for cheap alternative healthcare resource.

Keywords: *Aloe vera*, *Azadirachta indica*, *Tridax procumbence*, Wound healing.

Introduction

Would healing is an intricate process in which the skin or another organ tissue repairs itself after injury. The process of wound healing consists of integrated cellular and biochemical events leading to re-establishment of structural and functional integrity with regain of straight of injured tissue. Medical treatment of would includes administration of drugs either locally (topic) or systematically (oral or parental) in an attempt to end would repair (Savant and Shah 1998). The topical agent used include antibiotics and antiseptics (Chulani, 1996) and forced with the growing resistance of organism to antibiotics and other drugs, the search for alternatives is urgent (Seidal and Taylor, 2004). These useful medicinal plants are cost effective, easily available in nature, health and eco-friendly which would may help the efficacy than commercial drugs.

Study site

Our study areas is Nandigram, Bajkul and Tethibari villages of Purba Medinipur district which is the most southern part of west Bengal, India. Its latitude and longitude is 21°56'N and 87° 46' 34.81'E respectively.

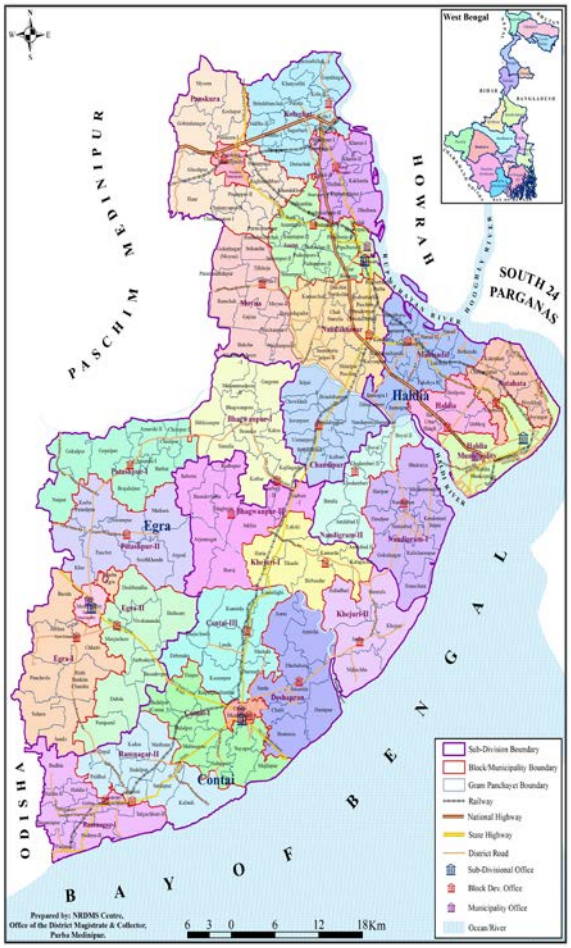

Fig.1. Study area.

Methodology

Field studies were conducted to collect periodically information using ethno botanical method and by the old aged common people of these villages during the period March, 2012 to February, 2013. Special attention was given to record those plants which are used for wound healing purpose. The Tribal people of Purba Medinipur district are rich in their traditional knowledge about ethnomedicine. But they do not have any written scripts or prescriptions. These information were collected through personal investigation among the Tribal communities. The surveys were carried out with a non-random purposive sample of the rural population. The field survey was covered mainly in the tribal populated areas which were believed to some extent isolated from the common urban populations. The collected plants were preserved in a herbarium sheet. Only four medicinal plants were discussed here. Cross examination was done to verify the use of particular species mostly by interrogating another old aged person. Experimental studies were done by standard methods.

Report for wound healing purpose

Ghritkumari (*Aloe vera*)

It is use for minor wound healing and minor burns. The fresh plant contains 96% of water and rest is essential oil, amino acids, minerals, vitamins enzymes, glycoprotein (Raina et al*.,* 2008). They collect the semi liquid materials from its leaves and are coating on the affected areas for three consecutive days. The antibacterial activity has been observed in the DMSO gel extracts of *A. vera* (Sterile discs with 6 mm diameter was loaded with 100µg/ml of gel DMSO extracts) against bacteria (*E. coli*). The result was very significant.

Ban Tulsi (*Croton bonplandianum*)

Crotons are popular foliage plants and are often called Bantulsi (Churchuri). They collect juice of plants stem and spread over the very currently occurring wound areas. Blood clotted within 2 minutes and after washing with water in these areas, they spread the juice again over the infected areas for 2-3 consecutive days. Similar significance result was noticed by Divya et al., 2011.

The antibacterial activity has been observed in the ethanolic extract of *C. bonplandianum* (1% dilution) against bacteria by agar well diffusion technique (*E. coli*) and significant result was noticed.

Tridakha (*Tridax procumbence*)

It is best known as a widely spread pest plants. It is used for several potential therapeutics activities like antiviral,

antioxidants, antibiotics, efficacies, wound healing activity, insecticidal and anti inflammatory activity (Suseela et al., 2002). Some old aged peoples of these areas used leave extracts on wounds for healing purpose. The alcoholic extract of *T. procumbence* (1% dilution) showed significant antibacterial activity against *E. coli* by agar well diffusion technique.

Neem (*Azadirachta indica*)

Neem oil is collected from ripe fruits of Neem plants mixed with its leaves, Gol morich (2-3 gm in 100 ml oil), labanga (2-3 pcs), baro alachi (2-3 pcs) and grinding for a long time. The mixed crude oil was then keeps the site moist and gives soft texture to the skin during the healing process. This keeps any wounds or lesson free from secondary infections by microorganism. These mixture may be store for a long times if a pinch of alum is mixed with it. Experimentally, the mixed crude showed significant antibacterial activity against *E. coli* by agar well diffusion technique.

Discussion

In general the tribes show many similarities in regard to medicine, but the actual agents employed differ with the tribes and localities, as well as with individual healers. Knowledge getting from the field study of Purba Medinipur district it can be said that tribals are rich in their art of medicine preparation. They prepared the medicine in a variety of forms depending on their purpose.

The medicinal plants which are used to treat the wounds give satisfactory results because they contain all the ingredients/factors require for the proper healing of the wounds and the regeneration of the new tissue. The process of wounds healing can be classified into five phases, cellular phase (collagenation), narrowing wounds area (wounds contraction), collagen deposition (collogenation), epithelial covering (epithelisalisation), scar remodeling (cicatrixisation) (Divya et al,. 2011). The role of these herbal plants extract may have an importance influence on metabolic process and can be reflected in healing. The wound is not infected by microbial agent and vascular part of the body heal quickly due to well supplied blood after using of those extract of herbal plants. The undifferentiated mesenchymal cells of the wound margin modulate themselves into the wound gap along with the fibrin stands. The collagen is the major component of extra cellular tissue, which give support on and straight and is composed of amino acids (hydroxyproline), (Divya et al., 2011). So, the plants have to be screened for their active principles and tested into the laboratory and then maximum benefit can be derived from them in the future.

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Conflict of interest

Authors declare that there is no conflict of interest.

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