

The effect of alcoholic extract of Nettle leaves, *Urtica dioica*, on histomorphology and structural alterations during dermal wound healing in rat

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Abstract

Nettle (*Urtica dioica*) is one of the most important native plants that have been used for the treatment of a variety of diseases, but limited data is available about its beneficial effects on histological changes of skin during wound healing. In the present study, the effects of 5% and 10% alcoholic cream of nettle leaf extract as an experimental drug in wound healing were investigated. The rats (n=30) were randomly divided into five experimental groups. The back of the animals using a puncture machine was wound. Then all of them were treated twice a day for two weeks. The control group received saline at the site of the normal wound. The sham group received the eucerin solvent and the phenytoin group received 1% ointment. Two experimental groups received 5% and 10% of Nettle extracts. Finally, 14 days after the start of the study histological changes in the skin of the wound site, granulation tissue amount, granulation tissue fibroblast maturation, collagen deposition, re-epithelialization, neovascularization, hydroxyproline content, and the percentage of wound healing in different experimental groups were analyzed. On day 14 of the experiment, the phenytoin and NE-treated groups had better effects on wound healing compared with the control group. Hydroxyproline content in dried wounds was significantly increased in the NE-treated groups compared to control groups. These results in 10% NE-treated group were significantly better than the 5% NE-treated group. These findings were confirmed by histological examination as well. According to the obtained results, nettle extract, to some extent similar to common chemical wound healing drug such as phenytoin, had a positive effect on skin changes during wound healing and these effects were dose-dependent.

Key words: Rat, re-epithelialization, Skin, *Urtica dioica*, Wounds healing

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