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Evaluation of *in vivo* wound healing activity of methanol extract of *Achyranthes aspera* L.

Abraham Fikru Mechesso
Kyungpook National University, South Korea

The leaves of *Achyranthes aspera* L. has been used traditionally for the treatment of wound in various parts of Ethiopia. However, the plant has not been explored scientifically for its wound healing activity. Therefore, this study was designed to investigate the wound healing activity of methanol extract of *Achyranthes aspera* L. leaves. Incision and excision wounds were inflicted on albino rats of either sex, under diethyl ether anesthesia. Group I served as positive control and was treated with 1% silver sulphadiazine, group II, III, IV treated with simple ointment containing 2.5%, 5% and 10% (w/w) methanol extract of the leaves of *Achyranthes aspera* L., respectively, whereas group V served as negative control and was treated with simple ointment. All the animals were treated topically once a day. Wound healing potential was assessed with excision and incision wound model. Excision wound model was used to assess the change in percentage contraction of wound, epithelization time, DNA content and histological features whereas rats inflicted with the incision wounds were used to determine breaking strength. Based on the results of percentage wound contraction, the DNA content and epithelization time, all groups of rats treated with the extract showed significant ($P<0.05$) wound healing activity compared to group of rats treated with simple ointment (negative control) group. The difference in breaking strength was, however, significant ($p<0.05$) only for the 5% and 10% extract of *Achyranthes aspera* (w/w) ointment treated groups. Histological evaluation showed well organized epidermal layer, increased number of fibrocytes, remarkable degree of neovascularization and epithelization which was comparable to the standard on the 21st day after treatment; especially in the 5% and 10% (w/w) extract treated group. The present study provides a scientific rationale for the traditional use of the leaf extracts of *Achyranthes aspera* L. in the treatment of wound.

Biography

Abraham Fikru Mechesso has completed his MSc from the Addis Ababa University. He is an Assistant Professor at the Hawassa University, Ethiopia and a PhD Fellow at the Kyungpook National University, Republic of Korea, working on pharmacokinetics and medicinal plant researches. He has published more than 7 papers in reputed journals.

abrahamfikru@yahoo.com

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