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EVALUATION OF THE WOUND-HEALING PROPERTY OF *MOMORDICA CHARANTIA* (MC) IN DIABETIC RATS

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Background:

Momordica charantia (MC; bitter gourd) has been reported to possess antihyperglycemic effects in previous studies involving animals induced with diabetes. However, its effect on wound healing has not been well documented. The aim of this study was to evaluate the topical effect of MC extract on the wound-healing process in rats with diabetes induced by streptozotocin.

Materials and Methods:

A total of 56 male *Sprague-Dawley* rats were divided into two main groups: a non-diabetic group ($n=6$) and a streptozotocin-induced diabetic group ($n=50$). The diabetic groups were further subdivided into 5 groups; a non-treated group ($n=10$), a treated group with MC extract in powder form ($n=10$), treated groups with or without MC extract in ointment form ($n=10$ each) and a treated group with povidine ointment ($n=10$). The wound was inflicted with a 6-mm punch-biopsy needle on the dorsal aspect of the thoracolumbar region. The wounds were treated for 10 days and the animals killed on day 11 after wound creation. The rate of wound closure and total protein content were estimated. Changes in the wound tissue were also identified histologically.

Results:

The diabetic groups showed a significant delay in wound healing compared with the normal untreated group which showed complete closure of wounds at day 10 ($p<0.05$). Interestingly, the diabetic group treated with topical MC ointment showed better results than the non-treated group. There was also a significant difference in total protein content between the normal and diabetic groups, in which the MC powder treated group showed higher total protein content than the normal group ($p<0.05$).

Conclusion:

Topical use of MC extract improved and accelerated the process of wound healing in diabetic animals.

Keywords:

Momordica charantia, diabetes, wound closure