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Effect of *Punica granatum* Rinds Dried Powder on Wound Healing in Albino Rats of Wistar Strain

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Introduction

A bed sore, also known as pressure ulcer is an area of unrelieved pressure over a defined area, usually over a bony prominence, which results in ischemia, cell death, and tissue necrosis. It is a common problem that develops as a complication in long term bedridden patients. In this research, a herbal medicine that is traditionally used in the Northern region of Saudi Arabia for the treatment of severe conditions of bed sores is studied for the management of open wounds in male Wister Albino rats weighing between 150 g to 200 g.

Objective

To develop a cost effective and safe herbal medicine for bed sores and to scientifically prove the status of traditional herbal medicine that is used in the Northern region of Saudi Arabia.

Materials and Methods

In this study, 12 male albino rats of Wistar strain were selected and divided into 3 groups, each composed of 4 rats. A circular wound of 20 mm^2 size was produced on the dorsal thoracic region of each rat using excision wound model. Group 1 rats were treated with the test drug (dried powder of *Punica granatum* rind), Group 2 rats were treated with Fucidin ointment and Group 3 rats were treated with blank vaseline. Treatment application was made using the standard method on alternate days while having the wounds measured by graph paper method. The animals were monitored daily for their general health.

Results

The data was collected and statistically analyzed using student *t*-test considering $p<0.05$ as statistically significant, between Group 1 and Group 2 rats with $p<0.05$. The result is significant at $p \leq 0.01$ between Group 1 and Group 3 and there is no statistically significant difference between Group 2 and Group 3 rats. The effect of *Punica granatum* rinds in Group 1 exhibited highly significant activity compared to Fucidin and Vaseline in Groups 2 and 3 respectively. Wound healing occurred on days 15, 17 and 21 days in groups 1, 2, 3 respectively.

Conclusion

In our study, significant results were seen in the management of wounds using *Punica granatum* rinds on rats. We suggest the conduction of further studies on a larger scale as our results might encourage industrial experts to manufacture a formulation which is cost effective and safe for bed sore management.

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