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Heparin Effect on VEGF and EGFR After Deep Second and Third Degree Burns in Rattus Novergicus Strain Wistar

Heparin Effect on VEGF and EGFR After Deep Second and Third Degree Burns in Rattus Novergicus Strain Wistar

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Abstract

The objective of this study was to study the effect of heparin on angiogenesis and epithelialization acceleration. The design of this study was experimental. This study used forty eight rats randomly divided into four groups. A group of deep second degree burns and a group of third degree burns were each divided into two groups, experimental and control groups. The experimental group was divided into 2, both treated with 1 ml heparin 100 IU/kg and saline solution injected beneath the burnt skin once daily, in which 1 group received it for 5 days while other up to 10 days. The control group was divided into 2, both treated with 1 ml saline solution injected beneath the burnt skin once daily, in which 1 group received it for 5 days while other up to 10 days. Observation was done at fifth and tenth day. Parameter of angiogenesis was VEGF count. Parameter of epithelialization acceleration was EGFR count. VEGF and EGFR counts were evaluated with immunohistochemistry. Results showed a significant difference was found between VEGF in control and treatment groups demonstrated by considerably increased VEGF count in the treatment groups. There was a significant difference in EGFR in control group compared to that in treatment group with evidence of considerably greater EGFR count in treatment group. A significant difference was found between VEGF and EGFR in deep second degree burns and those in third degree burns, demonstrated by considerably increased VEGF and EGFR count in the latter. There was no significant difference between VEGF and EGFR counts on day 5 and day 10. In conclusion, subcutaneous injection of heparin could promote VEGF and EGFR counts by means of promoting angiogenesis and epithelialization acceleration resulting in wound healing acceleration.

Keyword : Heparin, burn, angiogenesis, epithelialization, ,

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