

## عنوان مقاله:

Effect of granulocyte colony stimulating factor (G CSF) on bacterial translocation and wound healing in burned mice

## محل انتشار:

نهمین کنگره کشوری سوختگی (سال: 1398)

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## خلاصه مقاله:

**Background and Aim :** Background: Burn wound is an important cause of morbidity and mortality worldwide which causes major economic, physical and psychological problems for patients. Improving the host's immune system and removing the infection can be effective in healing of wounds caused by burns. Granulocyte-colony-stimulating factor (G-CSF) stimulates both the bone marrow to produce granulocytes and the function of neutrophil precursors. The aim of this study was to examine the effect of G-CSF on removing infection and wound healing. **Methods :** Materials and Methods: A burn model was used to induce burns in 18 adult Balb/c mice, and their wounds were infected by *Acinetobacter baumannii* strains. Burned mice were divided into two groups of control and G-CSF. They treated daily by subcutaneous injections of normal saline (0.1 mL) and G-CSF (10 µg/kg) for 7 days. The wound healing process was evaluated by the morphological (in 3<sup>th</sup> and 7<sup>th</sup> days) and histological (in 7<sup>th</sup> days) assessments. **Results :** Results: In morphological assay, the mean size of the wounds both in the 3<sup>th</sup> (P=0.000) and 7<sup>th</sup> (P=0.01) days of the treatment was significantly lower in the G-CSF treated group compared to the control group. Then some of the histological parameters were evaluated such as the level of inflammation, re-epithelialization, angiogenesis, collagen deposition, the amount of granulation tissue, and fibroblast maturation. The results showed that inflammation was reduced in the G-CSF-treated group, and re-epithelialization and collagen deposition were increased insignificantly compared to the normal saline-treated group. Furthermore, bacterial translocation was reduced significantly in the G-CSF group. **Conclusion :** Conclusion: The findings of the current study reveal that G CSF could enhance wound closure and helps in wound healing by improving the immune system. Furthermore, it was shown that G CSF has an anti inflammatory role and also reduces bacterial translocation. Eventually, these results revealed that G CSF could .be a new indication for treatment interventions in burns

**کلمات کلیدی:**

Acinetobacter baumannii, burn, granulocyte-colony-stimulating factor, wound healing

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