

عنوان مقاله:

The effects of stem cells on burn wounds

محل انتشار:

نهمین کنگره کشوری سوختگی (سال: 1398)

تعداد صفحات اصل مقاله: 1

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خلاصه مقاله:

Background and Aim : Stem cells are of special interest in burn wounds, as different stem cells can be effective on different wound beds. At present patients with a significant burn injury are being treated using traditional debridement and grafting with or without the use of skin substitutes, allograft or cultured epithelial auto-grafts. However surgeons are collaborating more than ever aiming to incorporate stem cells as a more efficacious treatment option to the current surgical management paradigm. **Methods :** A Pubmed search was utilized to identify available literature up to and including 2017. The topic of stem cells and burn wound healing were explored to identify any conceptual significant issues. Subsequent to this, a search strategy was devised using several key terms; adipose derived stem cells, mesenchymal stem cells and burn wounds healing. Employing these key search criteria a bibliographic search was performed on pubmed only. Additional search criteria included regenerative medicine and tissue engineering. Search criteria were restricted to the English language, but acceptable English translations were sought for inclusion. Inclusion dates were from 2003 up until and including 2017. **Results :** Studies included looked at stem cells in burn wounds only. **Results:** There were 692 potentially suitable publications of which 72 were included for review. These included a systematic reviews and original research articles. **Conclusions:** Stem cells accelerate burn wound healing by inducing neo-angiogenesis, collagen deposition and granulation tissue formation. They modulate the inflammatory response and reduce the risk of infection. They can regenerate skin appendages and halt the zone of stasis in acute burn injury. However with these pre-clinical animal model studies we must be cautious with our interpretation of this novel therapy. **Conclusion :** Stem cells accelerate wound healing via a complex series of pathways that seek to promote neo-angiogenesis, collagen deposition and granulation tissue formation. They alter our immune response by decreasing the severity of the inflammatory cascade. This may decrease the risk of infection. Stem cells are key in regeneration of cutaneous appendages such as hair follicles, sweat and sebaceous glands, which would improve aesthetic outcomes for patients.

کلمات کلیدی:

Burns, wounds, stem cells, regenerative medicine, tissue engineering

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