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The use of Keratinocytes: Things we should keep in mind!

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Background: Cultivation of keratinocytes and their clinical application was an essential step towards the development of new treatment concepts for patients suffering from severe burns and chronic cutaneous wounds.

The aim of this review is to give a current overview of keratinocyte cultivation and keratinocyte application under experimental and clinical conditions as well as to discuss their limitations, complications and future perspectives.

Methods: Pubmed and Medline was systematically searched for correlative publications.

Results: Promising at first, but over time its limitations became evident: demanding infrastructural requirements, high costs, lack of “*ex-vitro*” stability, additional requirement for dermal support, and the absence of other skin cell types or appendages have limited the introduction in daily clinical routine. Nonetheless, continuous efforts have been made in the past decades in order to improve the application of keratinocytes. Novel techniques of keratinocyte harvest and cultivation have simplified the clinical application, improved stability, and consequent outcomes.

Conclusions: The herein presented efforts despite their drawbacks during the development process and resultant clinical outcomes of keratinocyte culturing bear a solid foundation for the future. The ultimate challenge however remains, bringing any of these efforts into clinical practice while avoiding the failures of the past.

Biography

Lars-Peter Kamolz is Professor for Plastic, Aesthetic and Reconstructive Surgery and Head of the Division of Plastic, Aesthetic and Reconstructive Surgery, Department of Surgery, Medical University of Graz. Furthermore, he is the Head of the Research Unit for Tissue Regeneration, Repair and Reconstruction at the Medical University of Graz.

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