Rev Endocr Metab Disord. 2019 Jun;20(2):207-217.

Role of growth factors and cytokines in diabetic foot ulcer healing: A detailed review.

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Abstract

The aim of the review is to examine the role of growth factors and cytokines in the management of Diabetic Foot Ulcers, such as platelet derived growth factor (PDGF), vascular endothelial growth factor (VEGF), fibroblast growth factor (FGF) and Insulin like growth factor (IGF). Taking this a step further, the role of Hypoxia-inducible factors (HIFs), Transforming growth factor beta 1 (TGF- β -1) and other growth factors have also been examined, with regard to the treatment of diabetic foot ulcers. The roles of these above-mentioned growth cytokines have been analyzed by studying various scholastic articles. The complete process of wound healing is implemented and regulated by numerous cytokines and human growth factors. The findings of the study indicate that wound healing of diabetic foot ulcers is a complex and extremely challenging biological and molecular process that involves coordinated efforts of multiple cell types. The therapeutic effects of various growth factors in the clinical management of wounds are chronic venous ulcers, pressure ulcers, and diabetic foot ulcers. It has been concluded that altercations of various cytokines are found in patients enduring diabetic foot ulcers. In a similar way, changes in the level of cytokines are also found in patients suffering from other diabetic complications such retinopathy, as diabetic nephropathy. and neuropathy. Subsequently. the diabetic wound healing process can be accelerated by regulating the levels of the cytokines.

KEYWORDS: Cytokines; Diabetic ulcers; Growth factors; Insulin; Mechanism; Molecular process; Vascular endothelial growth factor; Wound healing PMID: 30937614