

# The role of growth factors in the healing of diabetic foot ulcers

Karolemea Sevasti<sup>1</sup>, Vlachou Eugenia<sup>2</sup>, Fasoï Georgia<sup>2</sup>, Kelesi Martha<sup>2</sup>

1. RN, MSc in Wounds and Ulcers, Treatment and Care, Nursing Department, University of West Attica, Athens, Greece
2. Professor of Nursing, University of West Attica, Athens, Greece

**25th FEND Annual Conference**

**18-19 September 2020**

# Background

- ▶ Diabetic foot ulcers are one of the most important complications of diabetes whose successful treatment is a challenge for patients and health professionals. The utilization of growth factors in the treatment of diabetic foot ulcers is a relatively new, but simultaneously controversial and not well-documented therapeutic approach, which has shown some encouraging clinical results

## Aim

- ▶ The aim of this systematic review was to investigate the efficacy of growth factors as a topical treatment in the healing of diabetic foot ulcers

# Methods

- ▶ **Systematic review was based on the methodology described in the PRISMA recommendations ([www.prisma-statement.org](http://www.prisma-statement.org))**
- ▶ **The PICO model was followed and the clinical question was set as "What is the effectiveness of topical application of growth factors in the healing of diabetic foot ulcers in patients with type I or II diabetes"**
- ▶ **Appropriate criteria for the inclusion or exclusion of studies were set.**
- ▶ **Literature has been systematically reviewed by searching international electronic databases (PubMed, Science Direct, Scopus, Cochrane Library and Ebsco) with appropriate keywords, for publications from 2011 and onwards. The keywords were: diabetes, diabetic foot, ulcer and growth factors**

# Results

- ▶ The search resulted in the sum of 1109 articles and the application of inclusion and exclusion criteria led to 11 studies to be included.
- ▶ The main parameters used to evaluate the efficacy of the treatments applied in the healing of diabetic foot ulcers were: the percentage of patients with complete healing, the time of some incomplete healing, and the reduction of the ulcer surface area.
- ▶ Growth factors demonstrated a significantly increased healing effect, compared to the alternative treatments, in all of the included studies. Epidermal growth factor (EGF) was the most frequently used growth factor, while its effectiveness was rather adequate.
- ▶ The available data and the limited number of studies about other growth factors, as platelet derived growth factor (PDGF) and acidic fibroblast growth factor (aFGF) are not sufficient to fully support the effectiveness of these growth factors

25th FEND Annual Conference

18-19 September 2020

# Conclusions

- ▶ **Topical application of growth factors and especially epidermal growth factors (EGFs) seems to facilitate and accelerate the healing process of diabetic foot ulcers.**
- ▶ **The use of growth factors as topical therapy should be further studied as the number of clinical trials available cannot fully and reliably answer all research and clinical questions.**
- ▶ **Furthermore, as healing of diabetic foot ulcers is a complicated process, the use of growth factors should be a part of a holistic therapeutic approach.**