Suhaila Ahmed

MBRU Dubai Health
UAE

Stem cell therapy in diabetic foot ulcers: a comprehensive systematic review

Abstract:

Diabetic foot ulcers (DFUs) represent a significant complication of diabetes, leading to increased morbidity and mortality. With the rising prevalence of diabetes, the incidence of DFUs continues to escalate, resulting in over 1 million amputations annually. Traditional treatments often yield suboptimal outcomes, necessitating the exploration of novel therapeutic strategies. This literature review investigates the efficacy of stem cell therapies, particularly adipose-derived stem cells (ASCs), in promoting healing in DFUs. Mesenchymal stem cells, especially ASCs, possess unique regenerative properties, including inflammation modulation and angiogenesis promotion. Recent studies have demonstrated that patients treated with autologous micro-fragmented adipose tissue exhibit healing rates of 80%, significantly higher than the control group (46%) ($p = 0.0064$). Additionally, the introduction of allogeneic ASC sheets has shown promising results, achieving complete wound closure in 73% of treated patients. Furthermore, ischemic preconditioning (IPC) has emerged as a novel adjunctive approach, enhancing DFU healing rates; 41% of patients in the IPC group achieved complete healing compared to none in the control group ($p = 0.01$). This review highlights the potential of stem cell therapies, particularly ASCs, in improving healing outcomes for DFUs, while also addressing the integration of IPC as a complementary treatment. Continued research is essential to optimize these therapeutic protocols and facilitate broader applications within chronic wound management, ultimately improving patient outcomes and reducing the burden of diabetic foot complications.

Biography

Suhaila is a dedicated medical intern at Mohammed Bin Rashid University of Medicine and Health Sciences, Dubai Health. With a strong passion for pediatrics and neurology, she combines her clinical expertise with a compassionate approach to patient care. Suhaila has excelled in various leadership roles, including Batch Leader and Head of the Take Care Club, where she connected disabled children with medical students. She is currently leading a project to compile and publish two books, "Healing Hands" and "The White Coat Chronicles," showcasing narratives from healthcare professionals. Suhaila's interests extend to research, including congenital arteriovenous malformations and innovative treatments for childhood migraine. Known for her dedication to improving healthcare, she is committed to making a meaningful impact in the medical field through patient care, education, and innovative research.