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Using stromal vascular fraction injection for rapid and scarless wound healing

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Cutaneous fibrosis or Scars develop as a result of suboptimal wound healing after serious tissue injuries such as extreme burns, trauma and major surgery leading to prolonged inflammatory responses and pathological fibroproliferative responses in wounds.

The latest studies have investigated molecular regulators at each phase of wound healing: inflammation, proliferation and remodelling phases.

Here we reviewed the current literature that illustrate molecular pathways for one of the novel methods for scarless wound healing which is Stromal Vascular Fraction (SVF). SVF contains a large population of stem cells called Adipose-Derived Stem Cells (ADSCs), that share a number of similarities with bone marrow stem cells, including the capacity for multilineage differentiation.

Scar tissue consists mainly of myofibroblasts formed by fibrillar collagen. Factors that are essential for myofibroblast activation include the availability of active growth factors such as TGF β 1 and PDGF; activation of inflammatory signaling; and mechanical response to stress. Results of studies have been done on animals showed that collagen in the group that had SVF was arranged more regularly with a broader gap between collagens and also the mRNA expressions of TGF- β and Smad3 in the SVF group were significantly down-regulated. another experiment showed that SVF contains EGF and VEGF cytokines which enhance the ability of keratinocyte cells to migrate and proliferate cells and have obvious effects on depressed scars for clinical use. Trials have been done on human showed also a huge improvement and significant increase in scar tissue score for all the patient who had the SVF injection.

Biography

Christeen Youssef graduated with a degree of Bachelor of Medicine and Surgery and subsequently taken her Master of Science in Dermatology and Venereology from the reputable Zagazig University in Egypt. Her dedication to Dermatology and Aesthetic Medicine continuously inspires young doctors as she shares her expertise as an Associate Professor of Dermatology in the same institution since 2005 till present. As well respected Aesthetic and Dermatology Specialist in the UAE and abroad, she is an advocate of true clinical results through safe and scientifically proven medical practice.

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