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Autologous transplantation of adipose tissue-derived mesenchymal stem cells: A promising therapeutic strategy for prevention of skin-graft contraction

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A utologous skin grafting followed by application of an elastic bandage has been considered to be a better treatment for burn wounds and after scar excision following post-burn scar formation; however, there will be some unavoidable degree of graft contraction. Wound healing requires a coordinated interplay among cells, growth factors, and extracellular matrix proteins. Central to this process is the mesenchymal stem cell (MSC), which coordinates the repair response by recruiting other cells and secreting growth factors and matrix proteins. Furthermore, MSCs regulate immune response and inflammation and possess powerful tissue protective and reparative mechanisms, making these cells attractive for treatment of skin wound. The purpose of the study was to assess the clinical effectiveness of adipose tissue-derived mesenchymal stem cells transplantation on the healing of skin grafts and prevention of graft rejection. In our clinic, we found that during a 1-year follow-up analysis, areas treated with autologous adipose-derived MSCs combined with transplantation of skin were less likely to have contraction of the skin grafts than areas treated with skin grafts alone. This result indicates that MSCs may be a potential and promising treatment to prevent contraction of skin grafts.

Biography

Manal A Eid Hashem Ayad did her MD degree in 1987 (Tanta University, Egypt), Master in Clinical Pathology in 1991 (Tanta University, Egypt), and completed PhD degree in 1999 at Mayo clinic USA. She did her Post doctoral researches at Georgia Medical School, USA. She is a Professor of Clinical Pathology and the Head of Molecular Biology unit in the Department of Clinical Pathology, Tanta University. She is a member of American Association of Cancer Research (AACR), Mayo Medical Alumni Association, European Hematology Association and the Egyptian Society of Hematology and Research. She has published more 18 international papers and more than 15 national ones.

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