THE EFFICACY OF COMBINED APPLICATION OF INTRALESIONAL CORTISONE AND ADIPOSE DERIVED STEM CELLS IN THE QUALITY OF HEALING OF ORAL ULCERS

Lobna Abdelaziz
Assistant Professor

Abstract

Background: Adipose stem cells (ADSCs) are an attractive and abundant stem cell source with therapeutic applicability in diverse fields. In this work, the effects of combined application of cortisone and ADSCs transplantation on the quality of oral ulcer healing were examined.

Methods: Transplantation of undifferentiated green fluorescent protein (GFP)-labeled Autologous ADSCs alone (group I) or admixture of ADSCs with intralesional cortisone (group II) and intralesional cortisone alone (group III) was injected around the chemically induced oral ulcer in each group of 18 adult dogs. The healing process of the ulcer was monitored clinically and histopathologically. Gene expression of vascular endothelial growth factor (VEGF) and collagen genes was detected in biopsies from all ulcers.

Results: Flow cytometric analysis of the MSCs at the passage 3 showed that these cells were negative for CD45 (2.39%). They expressed high levels of CD29 (98.34%). The treatment resulted in dramatic wound edge activation and resurfacing of oral mucosa wound in ADSCs treated groups compared with cortisone treated group. There was increased expression of both collagen and VEGF genes in MSCs - treated ulcers compared to cortisone treated group.

Conclusion: This trial thrown light on different modalities of oral ulcer treatment, and confirmed that ADSCs have the ability to accelerate and improve the quality of healing of formcresol induced oral ulcers, especially when added to the effect of cortisone that reduce inflammatory cell infiltration in the ulcer scar.

KEY WORDS: ADSCs, cortisone, oral ulcer healing.

17th International Dental Congress. Cairo - 2015, November