Efficiency of systemic versus intralesional bone marrow-derived stem cells in regeneration of oral mucosa after induction of formocresol induced ulcers in dogs

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Abstract

Bone marrow mesenchymal stem cells (BMSCs) are the key to regenerative wound healing. MSCs have spatial memory and respond to local environment. The goal of this study was to evaluate the use of systemic and intralesional transplantation of BMSCs for regeneration of oral mucosa in an in vivo dog model.
Materials and Methods:
Transplantation of undifferentiated green fluorescent protein (GFP)-labeled autologous BMSCs systemically, submucosally or vehicle (saline) 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. One way ANOVA was used to compare between means of the three groups. Results were considered significant at $P< 0.05$.

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