

عنوان مقاله:

Use of aloe vera gel in regeneration of dental pulp and alveolar osteogenesis

محل انتشار:

اولین کنگره دانشجویی دندانپزشکی شمال کشور (سال: 1398)

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نویسنده:

Fatemeh Foroughipour - *Dentistry student, Student Research Committee, Shahid Sadoughi University of Medical Sciences, Yazd, Iran*

خلاصه مقاله:

Background and Objective: Aloe vera gel has been consumed in the traditional medicine of many countries. many carbohydrate ingredients of aloe vera gel have been offered to be responsible for its activity. Acemannan is an important polysaccharide fraction which demonstrated to encourage the healing process such as proliferation of fibroblasts, synthesis of extracellular matrix and hard tissue healing. pulpal fibroblasts have been considered as the important cells for new alveolar bone and dentine formation. one of the important member of bone morphogenetic protein is BMP-2. Thus this study shows effect of acemannan on regeneration dental pulp through BMP-2 expression in pulpal fibroblasts. **Search Method:** scholar was searched for any type of articles of effect of acemannan on pulp regeneration and PubMed (up to 2014) was searched for other articles and additional published papers about effect of aloe vera gel on regeneration of dental pulp. **Finding:** Some studies show that acemannan performs well as pulp-capping agent in stimulating mineralized bridge formation in milk canine teeth. Many genes relevant to skeletal development and cell differentiation and growth were more strongly expressed by acemannan treatment. pulpal fibroblasts produce BMP-2 which is a certain growth factor for hard tissue formation and differentiation. the impression of acemannan on BMP-2 mRNA levels in primary pulpal fibroblasts were shown by using RTPCR analysis. after treated with BMP-2 the bone marrow stromal cells, pulpal fibroblasts demonstrated differentiation and matrix protein secretion that cause to osteoinductive response. acemannan enhance proliferation of DDPC, growth factor and synthesis of extra cellular matrix, differentiation and mineralization in vitro and induces of mineralized bridge formation in inflamed pulp tissue in animal model. however acemannan is composed of repeating units of monosaccharide residues without Ca^{2+} to initiate calcium-phosphate compound formation or promote nucleation for calcification. **Conclusion:** modification of acemannan sponges may as well as increase the impression of acemannan in dentin regeneration. The impression of acemannan on dentin regeneration is comparable with that of MTA. use of acemannan which is less expensive compared with MTA. acemannan can be an alternative natural material for vital pulp therapy and avoids the extra cost.

کلمات کلیدی:

Acemannan, traditional medicine, BMP-2, pulp regeneration, osteogenesis

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