

Hard tissue formation in pulpotomized primary teeth with mcm-48, mcm-48/hydroxy-apatite

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Abstract

Aim or Purpose: Pulpotomy is one of the most common treatments in pediatric dentistry. In spite of comprehensive research toward the proper medicament for pulpotomy, the ideal material has not been found yet. The aim of this study is to introduce two novel nanomaterials for pulpotomy in primary teeth and assessment their pulp tissue reactions and hard tissue formation ability in dogs.

Materials and Methods: 48 primary teeth in four Iranian hybrid female dogs with age 6-8 weeks, were been divided into four groups by simple randomization technique. Radiography was taken before treatment. Cervical pulpotomy was done under general anesthesia, pulp were covered by one of these materials: MCM-48 (Mobaile Crystalline Material) , MCM-48/Hydroxy-Apatite (HA), Mineral Trioxide Aggregate, Gutta Percha(as positive and negative control respectively) and filled with IRM and amalgam. After 6-8 weeks, teeth were extracted and responses were evaluated histologically. Data were analyzed by SPSS version 22 and statistical tests including: Kruskal-Wallis, Fisher's Exact Test, Spearman's correlation coefficient, Mann-whitney.

Results: There was no significant difference between four groups in severity ($p=0.53$), extent of inflammation($p=0.72$), necrosis($p=0.361$), severity($p=0.52$), extent of edema($p=0.06$) and connective tissue formation($p=0.03$). Frequency of parameters including, bone formation($p=0.012$),extend of connective tissue formation($p=0.047$), severity ($p=0.02$)& extend($p=0.01$) of congestion were significantly different. There was no bone formation in Gutta Perca group and the type of bone formation between other three groups showd no significant difference. ($p=0.320$).

Conclusions: This study demonstrated that, MCM-48 and MCM-48/HA can be a suitable alternative medicaments in pulpotomy forprimary teeth due to ability of hard tissue formation.

Biography

Sahar Talebi graduated in dentistry. She is working as a dentist and clinician, her field of interest is tooth development and dental stem cell. She is experienced in isolation, culture and preservation of stem cell from human exfoliated deciduous teeth (SHED)



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