Title: Using of MTA in endodontics: a review literature

Authors: Pournasir Kobra1, Hasan nia Hossein2
1: Assistant of endodontics dept- Hamedan University
2: Assistant of oral disease dept- Hamedan University

Abstract: Introduction: Mineral trioxide aggregate (MTA) has been recommended for various uses in endodontics. The purpose of this literature review is to present a comprehensive list of article-regarding animal studies, clinical applications, drawbacks, and mechanism of action of MTA.

Methods: A review of the literature was performed by using electronic and hand-searching methods for the clinical applications of MTA in experimental animals and humans as well as its drawbacks and mechanism of action.

Result: MTA is a promising material for root-end filling, perforation repair, vital pulp therapy, and apical barrier formation for teeth with necrotic pulps and open apexes. Despite the presence of numerous case reports and case series regarding these applications, there are few designed research studies regarding clinical applications of this material. MTA has some known drawbacks such as a long setting time, high cost, and potential of discoloration. Hydroxyapatite crystals form over MTA when it comes in contact with tissue synthetic fluid. This can act as a nidus for the formation of calcified structures after the use of this material in endodontic treatments.

Conclusions: On the basis of available information, it appears that MTA is the material of choice for some clinical applications. More clinical studies are needed to confirm its efficacy compared with other materials.

Key words: MTA, Endodontics, root canal treatment

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