

Comparing the Antimicrobial Efficacy of MTAD, Chlorhexidine and Sodium Hypochlorite on Aerobic Microorganisms in Necrotic Root Canals: an Invivo Study

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Abstract

Background and Aim: The current study evaluated the antimicrobial effects of MTAD, chlorhexidine and sodium hypochlorite on aerobic microorganisms in necrotic root canals.

Materials and Methods: For this in vivo study, 17 necrotic single-rooted teeth with chronic apical periodontitis were used. After anesthesia and access cavity preparation, bacterial samples were taken from each canal using sterile paper points which were immediately transferred into BHI broth and were incubated at 37°C for 24 hours. For each sample, 4 aerobic plates were prepared and colonies were counted. Out of each series of plates, one without any antimicrobial agents was considered as positive control and the three others contained 100µl of MTAD, chlorhexidine 0.2% and sodium hypochlorite 5.25%, respectively. After 3 days of incubation, the colonies remaining on the surface of the plates were counted and recorded as CFU/ml. Kruskal-Wallis test was performed to evaluate the difference between the antimicrobial activities of the irrigants.

Result: The mean percentage of bacterial growth inhibition in the presence of MTAD, chlorhexidine and sodium hypochlorite was 29.42%, 82.64% and 39.40%, respectively (P<0.0001).

Conclusion: The antimicrobial effects of Chlorhexidine on aerobic microorganisms in necrotic canals seem to be higher than MTAD and sodium hypochlorite.

Keywords: *Mtad endodontics ; Chlorhexidine; Sodium Hypochlorite; Antimicrobial*