

Evaluating the Disinfecting Effect of Microwave and 0.1% Sodium Hypochlorite on Contaminated Toothbrushes

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Abstract

Background and Aim: Contaminated toothbrush has important role in transmission of infection and disease. The purpose of this study was to evaluate two methods of toothbrush disinfection by sodium hypochlorite 0/1% and microwave on three types of microorganisms: staphylococcus aureus, streptococcus mutans and candida albicans.

Materials and Methods: In this in vitro study, 90 toothbrushes were divided into 9 groups (n=10). Toothbrushes were contaminated by standard suspension of streptococcus mutans, staphylococcus aureus and candida albicans. Then, toothbrushes were disinfected with hypochlorite sodium %0.1 for 10 minutes and with microwave for 1 minute. Afterwards, remained bacteria on surface of toothbrush were cultured and counted. For analyzing Numbers of Colony-Forming Units remained on toothbrush one-way Kruskal-Wallis and Mann-Whitney tests were used.

Result: Results of this study showed that significant difference exists among disinfectant effects ($p < 0.001$). Results of Mann-Whitney test showed hypochlorite sodium had more disinfecting effect on Streptococcus mutans and Candida albicans compared with distilled water or microwave ($p < 0.05$). However disinfecting effect of microwave was more than two other disinfectants on Staphylococcus aureus ($p < 0.05$).

Conclusion: hypochlorite sodium had more disinfecting effect on Streptococcus mutans and Candida albicans however microwave was more effective on Staphylococcus aureus.

Keywords: Microwave ; hypochlorite; Sodium; Toothbrushing