Efek Antibakteri Larutan Cuka Apel (Malus Pumila Mill) terhadap Biofilm Enterococcus Faecalis = Antibacterial Effect of Apple Vinegar Solution (Malus Pumila Mill) against Enterococcus Faecalis Biofilm

Dahmar Luciana Jufri, author

Abstrak

Latar belakang: Fokus desinfeksi saluran akar saat ini telah mengalami perubahan dari desinfeksi agresif menjadi proteksi selektif, yang memiliki tujuan utama untuk menciptakan lingkungan yang sesuai, oleh karena itu, bahan irigasi alami sebagai pendamping mulai banyak diteliti potensialnya karena relatif aman. Larutan irigasi dengan kualitas optimal yang dapat membersihkan saluran akar secara menyeluruh sendiri masih belum tersedia dan meskipun ada perkembangan baru di bidang penelitian yang relevan, solusi yang lebih mendekati kualitas ideal belum dikembangkan. Cuka apel dapat dijadikan sebagai bahan alternatif alami yang aman untuk mengeliminasi biofilm sekaligus smear layer, sehingga berpotensi untuk dikembangkan lebih lanjut. Tujuan: Mengetahui perbedaan efek antibakteri bahan irigasi sintetik NaOCl 1,5% dan 2,5% dibandingkan dengan larutan cuka apel terhadap E. faecalis. Metode: Biofilm E. faecalis isolat klinis dibagi menjadi tujuh kelompok sampel untuk dipaparkan dengan bahan uji larutan cuka apel konsentrasi 2,5%, 5%, 10%, kontrol positif NaOCl 1,5%, 2,5% dan kontrol negatif tanpa perlakuan, efek antibakteri dilihat menggunakan metode MTT Assay dan hitung koloni. Hasil: Didapatkan hasil dari kedua uji yang dilakukan bahwa larutan cuka apel konsentrasi 2,5% memiliki efek antibakteri terhadap biofilm E. faecalis tertinggi dibandingkan dengan konsentrasi 5% dan 10%. Kesimpulan: Efek antibakteri larutan cuka apel 2,5%, 5%, dan 10% lebih rendah dibandingkan dengan larutan NaOCl 1,5% dan 2,5% terhadap biofilm E. faecalis.

.....Introduction: The current focus of root canal disinfection has changed from aggressive disinfection to selective protection, which has the main goal of creating a suitable environment, therefore, natural irrigation materials as a companion have begun to be studied for their potential because they are relatively safe. Irrigation solutions of optimal quality that can thoroughly clean root canals on their own are not yet available and despite new developments in the relevant research area, solutions closer to the ideal quality have not yet been developed. Apple cider vinegar can be used as a safe natural alternative for eliminating biofilm as well as the smear layer, so it has the potential to be developed further. Objective: To determine the differences in the antibacterial effect of synthetic irrigants NaOCl 1,5% and 2,5% compared to apple cider vinegar solution against E. faecalis. Methods: Clinical isolates of E. faecalis biofilm were divided into seven sample groups to be exposed to test materials for apple cider vinegar concentrations of 2,5%, 5%, 10%, positive control NaOCl 1,5%, 2,5%, and negative control without treatment, the antibacterial effect was seen using the MTT Assay method and colony count. Results: The results of the two tests were obtained that a 2.5% concentration of apple cider vinegar had the highest antibacterial effect on E. faecalis biofilm compared to 5% and 10% concentrations. Conclusion: The antibacterial effect of 2,5%, 5%, and 10% apple cider vinegar solutions was lower than 1,5% and 2,5% NaOCl solutions on E. faecalis biofilm.