# Efektivitas Ekstrak Bawang Putih terhadap Viabilitas Enterococcus faecalis (In Vitro) = Garlic Extract Effectivity against Viability of Enterococcus faecalis (In Vitro)

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Abstrak

Latar Belakang: Ekstrak bawang putih memiliki efek antibakteri terhadap berbagai bakteri Gram-positif dan Gram-negatif serta bakteri anaerob seperti Lactobacillus dan E. faecalis. Enterococcus faecalis merupakan bakteri Gram-positif fakultatif anaerob yang mampu menginvasi tubuli dentin dan resisten terhadap bahan irigasi dan medikamen intrakanal. Bahan irigasi saluran akar yang digunakan saat ini adalah bahan kimiawi yang dapat membahayakan jaringan periapikal dan benih gigi permanen jika terdorong ke apeks. Tujuan penelitian ini adalah untuk menganalisis efektivitas ekstrak bawang putih terhadap viabilitas Enterococcus faecalis dari isolat klinis saluran akar gigi sulung non vital. Metode Penelitian: Uji MTT digunakan untuk menilai viabilitas E. faecalis setelah pemaparan ekstrak bawang putih dengan berbagai konsentrasi (10%, 25%, 50% dan 100%) dan CHX 2% sebagai kontrol positif. Hasil: Analisis data menggunakan uji Kruskal-Wallis dan uji Post-Hoc Mann Whitney untuk melihat perbedaan antar kelompok. Ekstrak bawang putih konsentrasi 10%, 25%, 50% dan 100% mampu menurunkan viabilitas E. faecalis. Nilai viabilitas antara kelompok ekstrak bawang putih konsentrasi 25%, 50% dan 100% berbeda tidak bermakna (p>0,05) namun berbeda bermakna dengan kelompok ekstrak 10% dan kelompok CHX 2% (p<0,05) dengan nilai viabilitas E. faecalis lebih rendah. Kesimpulan: Dari hasil penelitian dapat disimpulkan bahwa ekstrak bawang putih efektif dalam menurunkan viabilitas E. faecalis.

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Background: Garlic extract exhibits antibacterial effect against wide variety of gram-positive and Gram-negative bacteria as well as anaerobic bacteria such as Lactobacillus and E. faecalis. Enterococcus faecalis is a Gram-positive facultative anaerobe capable of invading the dentin tubules and is resistant to several irrigating solutions and intracanal medicament. Commonly used irrigating solutions are from chemical substances that can compromise the periapical tissue and permanent tooth germs if extruded from apex. The aim of this study was to analyse the effectivity of garlic extract against viability of E. faecalis from clinical isolate of non-vital primary root canals. Method: MTT assay was used to determine the viability of E. faecalis after exposure of different concentrations of garlic extract (10%, 25%, 50%, 100%) and CHX 2% as positive control. Result: Analysis was done using Kruskal-Wallis; the post-hoc test was done for multiple comparisons at a 0,05 significance level. All concentrations of garlic extracts were able to reduce viability of E. faecalis. Viability score between 25%, 50% and 100% extracts were not significantly different from one another (p>0,05), however they were significantly different from 10% extract and CHX 2% (p<0,05) with lower viability score. Conclusion: The results showed that garlic extract were effective to reduce viability of E. faecalis.