

Susceptibility of *Enterococcus faecalis* biofilm to antibiotics and calcium hydroxide

Type: Article

Abstract: The purpose of this study was to investigate the antimicrobial efficacy of six groups of antibiotics and calcium hydroxide against *Enterococcus faecalis* biofilm in a membrane filter model. Two-day-old *E. faecalis* (ATCC 29212) biofilm was exposed to ampicillin, co-trimoxazole, erythromycin, oxytetracycline, vancomycin, vancomycin followed by gentamicin, Ca(OH)₂, and phosphate-buffered saline (control). After 1 h of exposure, the antimicrobial activity was neutralized by washing each disc five times in PBS, and then the colony-forming units of the remaining viable bacteria on each disc were counted. The results revealed that only erythromycin, oxytetracycline and Ca(OH)₂ showed 100% biofilm kill. An ANOVA with a Bonferroni post hoc test ($P < 0.05$) detected significant differences among the test agents, except in the ampicillin group versus the co-trimoxazole group. It is concluded that erythromycin, oxytetracycline and Ca(OH)₂ are 100% effective in eliminating *E. faecalis* biofilm, whereas ampicillin, co-trimoxazole, vancomycin, and vancomycin followed by gentamicin are ineffective.

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