ANTIMICROBIAL EFFICACY OF CLINDAMYCIN, LINEZOLID AND CALCIUM HYDROXIDE AS ROOT CANAL MEDICAMENTS ON TUBULAR INFECTION AGAINST ENTEROCOCCUS FAECALIS BIOFILM: AN IN VITRO STUDY

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ABSTARCT

TITLE: Antimicrobial efficacy of clindamycin, linezolid and calcium hydroxide as root canal medicaments on tubular infection against enterococcus faecalis biofilm: an in vitro study.

AIM : The aim of the study was to evaluate and compare the antimicrobial efficacy of Linezolid, Clindamycin, and Calcium hydroxide as an intracanal medicament on Enterococcus faecalis biofilm.

MATERIAL AND METHODS:

Fifty-six root blocks were obtained from extracted single-rooted human teeth that were decoronated, the apical part of the root was cut to obtain 6 mm cylinder of radicular dentine. The internal diameter of the tooth substrate standardized by round bur and specimens were infected and randomly assigned to four groups. Linezolid, Clindamycin, Calcium hydroxide and Methylcellulose (control) were placed in the root canal for 7 days. After treatment, dentine shavings were collected from 200 and 400 µm dentine depth and the bacterial load was assessed by counting the number of Colony Forming Units (CFUs).

STATISTICAL ANALYSIS: The scores were statistically analyzed using Kruskal-Wallis ANOVA test and Mann-Whitney test ($p<0.005$).

RESULTS: All of the medicaments used significantly had better antibacterial effects than the Control group at both 200 µm and 400µm depth after 7 days ($P < 0.005$). The antimicrobial effect of Linezolid and clindamycin were statistically similar to each other at both depths.

CONCLUSION: The Linezolid and Clindamycin groups performed better than the Calcium Hydroxide and control groups in terms of the reduction of bacteria. However, there were no significant differences in the antimicrobial efficacy of clindamycin and linezolid. Linezolid was equally efficient compared to clindamycin against E.faecalis whereas the efficacy of these two groups were comparable with calcium hydroxide.