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In vitro study of antimicrobial effect of glass ionomer cements with clorexedine

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The aim of the study was to evaluate *In vitro* the effect of antibacterial action in conventional glass ionomer cement (GICs) incorporated with conventional chlorhexidinediacetate (DCHX) on Streptococcus mutans(SM) grown, by halo agar diffusion, and the influence of sodium fluoride in the antimicrobial efficacy of DCHX, as well, the differences in time action of GI with DCHX antibacterial. The GICs Maxxion R and Vitro Fill R, were tested, incorporating the percentages of 0.5%, 1% and 2% DCHX, through agar diffusion till exhaustion of DCHX for 15 days in order to observe the longevity of inhibitory action,it was also evaluated the effect of sodium fluoride on the antibacterial action of DCHX.The specimens were made of Teflon cylindrical matrix format, measuring 2mm diameter and 4mm in height, in duplicated and the material was inserted with a Centrix. Control group used the same GICs without DCHX. DCHX was dissolved in the GIC liquid,and manipulated,according fabricant with its powder,by one manipulator (MR).To determine the difference between the halos inhibition average,Student-Newman-Keuls test (SNK) and analysis of variance were done.All specimens with DCHX, presented inhibitory halo from 2,29mm to 6,82mm for Maxxion R and 1,73mm to 8,97mm for Vitro Fill A. The inhibition capacity was proportional to the concentration of DCHX. By SNK test only groups Vitro Fill A with 0.5% and 1%DCHXdid not differ significantly from each other. The fifth tenth day showed higher antibacterial activity for both GICs. The Maxxion R 1% and 2% groups, shown the less differencesover time. It was not observed SM grown to the 7 and 15 exhaustion days and bacteria grown in the agar surface appear only after 96 hours of incubation. It was not observe antagonistic effect in antibacterial action in the presence of sodium fluoride. The incorporation of the DCHX in GICs MaxxionR and Vitro Fil R, at different concentrations, presented different results in SM grown after 40 days.SM inhibition is depending on DCHX concentration and fluoride alone did not showed ability to inhibit SM grown; the association of DCHX with GICss did not alter its antibacterial ability and the antibacterial action of CHX, incorporated into GICs,remains effective for 15 days, regardless of the GICs tested.

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