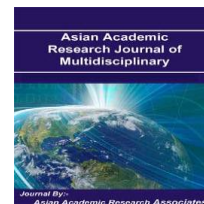




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## RELEASING OF FLUORIDE IONS FROM CONVENTIONAL GLASS-IONOMER CEMENTS INCORPORATED WITH ANTIMICROBIAL AGENTS

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### Abstract

In addition to the release of fluoride ions, GICs can potentially be used as templates for the release of other active antimicrobial components. Two conventional glass-ionomer cements ChemFlex and Fuji IX were incorporated with a different percentage of the antimicrobial agents - Benzalkonium Chloride and Cetylpyridinium Chloride (1%, 2%, 3%). The determination of fluoride ions from the cements was carried out with the aim to see the influence of the incorporated antimicrobial compounds on the degree of release of fluoride ions, bearing in mind that one of the main positive properties of GICs is the continual release of fluorine. The specimens were prepared according to the British Standards Institution Specifications for Dental Glass Ionomer Cements 1989. 84 samples in total were prepared – by six specimens of the conventional glass-ionomer cements Fuji IX and ChemFlex with various concentrations of antimicrobial agents (Cetylpyridinium Chloride or Benzalkonium Chloride) added – 1%, 2% and 3%, i.e. six samples for each antimicrobial agent and each concentration level, as well as, by other six samples of the same cements without any antimicrobial agents, to be used as a control group. The measurements were performed at 14 successive time intervals started in zero time and finished after seven days. The results obtained speak of a continual release of fluoride ions from both analysed glass-ionomer cements with the addition of antimicrobial compounds. The values of released ions, except in the case of the combination ChemFlex + CPC, declines with the increase in the concentration.

**Key words:** glass ionomer cements, antimicrobial compounds, ion-selective electrode, Cetylpyridinium Chloride, Benzalkonium Chloride

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