An in-vitro comparative microbiological study of antimicrobial properties of different commercially available glass ionomer cements

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Introduction

Dental caries is one of the widespread diseases of mankind and unlike many other diseases its incidence tends to increase with improved socio-economic conditions.

The development of dental caries requires the presence of cariogenic bacteria and a sugar in the diet which favors colonization of these bacteria and are metabolized by these bacteria, which are capable of rapidly producing acid below the PH required for demineralizing the enamel. There are a number of cariogenic organisms, which can be defined by their ability to colonize teeth; to reduce the PH to about 4.1 in the presence of a suitable sugar substrate and to induce caries in germ free animals. S. mutans, S. sanguis, Lactobacillus acidophilus and Caesi and Actinomyces viscosus fulfil most of these criteria; but S. mutans appear to be the most efficient cariogenic microorganism[35]

We in our clinical practice use a variety of dental restorative materials like gold, amalgam, composite resins and glass ionomers, which may or may not have antimicrobial properties against these caries producing microorganisms.

Glass ionomer cements are popular today because they satisfy many of the characteristics of an ideal cement.[6] Glass ionomer cements (Glass polyalkenoate) was first described in the dental literature by Wilson and Kent in 1972[18,37]. Since then excellent reviews of the properties of the