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Glass-ionomer cements, a template for releasing an antimicrobial agent

The glass-ionomer cements, possessing the positive characteristics of fluorine in the processes of re-mineralization and antimicrobial action, distinguish themselves as the most acceptable restorative material. A vast number of studies have established that conventional and resin-modified GICs have the ability for slow and sustainable release of fluorides over long time periods. Because fluorine exhibits antimicrobial effects, glass-ionomer cements could be easily recognized to have an additional very significant characteristic—an antimicrobial effect. In addition to the release of fluoride ions, and in order to improve the antimicrobial characteristics, GICs can potentially be used as templates for the release of other active antimicrobial components. The most used antimicrobial agent to be incorporated in glass-ionomer cements in different concentrations and different percentage ratios is chlorhexidine. Unfortunately, reference data on the incorporation of other antimicrobial components in GICs is very scarce. Although some antimicrobial agents have a confirmed effect in the reduction of the cariogenic salivary flora when used in rinses or toothpastes, the results regarding their incorporation in glass-ionomer cements are still scanty. The main aim of this presentation is the answer to the question, can we obtain antimicrobial GIC-s and improve their characteristics with other antimicrobial components than chlorhexidine or not.

Biography

Aleksandar Dimkov is an Associate Professor and President of Macedonian Association of Pediatric and Preventive Dentistry. He received his DMD from the Saints Cyril and Methodius University of Skopje, Republic of Macedonia (1994) and completed Residency in Pediatric and Preventive Dentistry from the St. Panteleimon University Dental Clinical Center in Skopje (2001). He obtained MSc (2003) and PhD (2011) in the field of Pediatric and Preventive Dentistry from Saints Cyril and Methodius University of Skopje. He was a Visiting Researcher at Medway School of Sciences, University of Greenwich UK (2007-2011). He has published more than 70 national and international publications in the field of pediatric and preventive dentistry as well as in the field of dental materials and microbiology in dentistry.

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