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Adhesive systems: Antimicrobial agents

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Objective: A literature review to determine the state of the art with regard to antimicrobial ability of adhesive systems

Materials and methods: For this work was performed a literature research for the last 10 years, in Portuguese and English languages, at the research engines: "Pubmed" and "B-on".

Development: The progressive decrease in bond strength occurs due to degradation, hydrolytic and enzymatic, of the hybrid layer. The chlorhexidine is a biguanide with cationic properties. It is a stable, broad spectrum antibacterial molecule at high concentrations and bacteriostatic at low concentrations. Besides its antimicrobial properties, chlorhexidine is a potent inhibitor of MMPs. DMAE-CB is, as MDPB, a monomer composed by combining a methacrylate group, polymerizable, with a quaternary ammonium group, responsible for the antibacterial properties. Those antibacterial monomers have the same principle: Before polymerizing is bactericidal and after polymerization have a bacteriostatic effect by contact.

Conclusions: Chlorhexidine is able to inhibit bacterial activity in dental treatments. With the advantage of not interfering or even improve the mechanical properties of the interface dentin/adhesive, such as higher microtensile bond strength and lower nanoleakage. Despite the positive results these statements are not completely consensual. The antibacterial monomers MDPB and DMAE-CB are shown to have an important role in the antimicrobial ability of adhesive systems because it maintains this property even after polymerization. Apart from its proven antimicrobial activity, all incorporated agents: Chlorhexidine, MDPB and DMEA-CB; have shown ability to inhibit MMPs.

Biography

Diogo Oliveira Martins has completed his Master degree at the age of 23 years (7/2014) from Dentistry Faculty of Oporto University.

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