

Biofilm composition of the complete dentures' reliner and the effectiveness of different hygiene methods

Maurício M. Badaró^{1*}; Antônio L. Malheiros-Segundo¹; Marina X. Pisani¹, Cássio do Nascimento¹; Helena F. O. Paranhos¹; Raphael F. de Souza¹; Cláudia H. Lovato da Silva¹.

¹ Faculdade de Odontologia de Ribeirão Preto – Universidade de São Paulo.
*mauriciobadaro@yahoo.com.br

Introduction: The biofilm is defined as a dense layer microbial constituted by a quantity greater than 10^{11} microorganisms per gram, combined with their metabolic products. The biofilm's composition of dentures resembles with the dental origin composition and differs only in relation to the increase in the amount of *Candida* spp., important inducing agent in the development of chronic atrophic candidiasis. Poorly cleaned dentures serves as a reservoirs of pathogens that are not normally associated with the oral microbiota, being responsible for the development of systemic diseases such as bacterial endocarditic, aspiration pneumonia, gastrointestinal infection and chronic obstructive pulmonary disease. **Objective:** The objective of this study was to identify, by DNA checkerboard hybridization technique, the microorganisms present on the dentures' surface relined with resilient material based on silicone and evaluate the antimicrobial efficacy of different cleaning methods, with emphasis to chemical immersion in a experimental solution based on *Ricinus communis* to 2%. **Methods:** Thus, it was selected thirty patients who had their mandibular dentures relined with soft lining (Mucopren soft). These patients were distributed into three distinct groups by considering the following protocols: (A) brushing with toothbrush and a specific toothpaste their dentures, three times daily for 2 minutes; (B) Immersion the dentures in a recipient with *Ricinus communis* 2%, once daily for 20 minutes and rinsing of the prostheses after meals, (C) Association of methods A and B. Evaluations were performed after 15 and 60 days of using the methods. The biofilm formed on the basal area of the lower denture was collected and taken to the laboratory for analysis and microbiological count, using the technique of DNA hybridization checkerboard. It was used 38 species of microorganisms, including some pathogens that they are related to denture stomatitis and periodontal disease, which remain in the oral cavity even after tooth loss. **Results:** Considering only the species for which methods showed significant effects, detaching: *C. gingivalis*, *P. putida*, *S. parasanguinis*, *V. parvula*, *S. mitis*, *C. albicans*, *C. dubliniensis*, *C. glabrata*, *C. krusei* and *C. tropicalis*. The data of the effectiveness of the methods were compared using generalized linear method ($\alpha = 0.05$), demonstrating that the chemical cleaning showed the lowest count in 08 species, with emphasis on the five different types of *Candida*. On the other hand, showed a lower efficiency as the microorganisms *S. parasanguinis* and *V. parvula*. Considering the time of implementation of the methods of hygiene, only one species was different between the periods (*F. nucleatum*). **Conclusion:** Thus, we can conclude that the experimental solution of *Ricinus communis* to 2% showed higher antimicrobial effectiveness when compared to mechanical and associated methods, considering that caused a reduction of 80% of the microorganisms, which held its count statistically significant. Only 10 from a group with 38 species evaluated were present (statistical significant).

Keywords: *Ricinus communis*, biofilm, complete denture.