



IADR GENERAL SESSION • IGUAÇU FALLS, BRAZIL • 20-23 JUNE 2012

**1707** IN VITRO DRUG-RELEASE, CYTOTOXICITY, ANTIFUNGAL-ACTIVITY FROM SOFT-LINING-MATERIALS MODIFIED BY CHLORHEXIDINE

Friday, June 22, 2012: 9:00 AM - 10:15 AM

Location: Poster Hall (Convention Center)

Presentation Type: Poster Session

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Objective: The aim of this study was to evaluate the kinetics of chlorhexidine release in a long term analysis, as well as the cellular cytotoxicity and the *in vitro* biofilm inhibition of *Candida albicans* of resins-based denture soft lining materials containing chlorhexidine diacetate (CDA).

Method: Resin discs were prepared from Coesoft® and Trusoft®, containing 0.5, 1.0 and 2.0 wt.% of CDA. In order to evaluate the chlorhexidine release, each disc was immersed in 1 mL of distilled water at 37°C, and spectral measurements were made to follow change in optical densities of storage solution, after each 48 hours during, 40 days, changing the storage solution. To evaluate the cytotoxicity in fibroblastic L929 cells, the neutral red dye-uptake technique was used, until the 28th day. For antifungal activity on *C. albicans* (ATCC 10231), the biofilm was allowed to develop over the resin discs surface and the bioactivity of the biofilms was measured by the MTT reduction assay after each 48 hours, during 22 days. Data were statistically processed by SigmaStat software using ANOVA and all pairwise multiple comparison procedures was done using the Holm-Sidak method, with overall significance level=0.05. (p<0.001).

Result: The CDA added to both resins-based denture soft lining materials had a dose-related chlorhexidine release rate and inhibitory effect on the growth of *C. albicans* (p< 0.001). It was observed slight to moderate additional cytotoxic effect from CDA added incorporated discs for both tested materials for the first analyzed days.

Conclusion: Chlorhexidine had a dose-related inhibitory effect on the growth of *C. albicans* and was also released from both resins-based denture soft lining materials. The cytotoxicity probably do not exceed the clinically tolerable level.

**Keywords:** Biofilm, Chlorhexidine, Dental materials, Fibroblasts and Prosthodontics