**P1**

The effect of various mouth rinses on the growth of oral Candida

(Faculty of Dentistry, University of Malaya, Kuala Lumpur)

**Purpose of the study:** The objective of this study was to determine the minimal inhibitory concentrations of mouthrinses containing CHX (Oradex™), CPC (Oral B™) and CHX-CPC (Hexi-Pro™) towards C. tropicalis and C. krusei. The effect of these compounds on the growth profiles of the Candida will be used to suggest the mechanism of action of the mouthrinses as antifungal agents against the Candida.

**Materials and Method:** The minimal inhibition concentrations (MIC) of these active ingredients were determined using turbidity testing and the mode of action was studied based on the pattern of the growth curves.

**Results:** Results obtained showed that all the mouth rinses exhibited profound antifungal activity on both Candida and this was based on the very low MIC values. The growth profile study revealed strong growth inhibition effect of the mouth rinses as the growth curves of C. tropicalis and C. krusei following treatment with the CPC, CHX and CHX-CPC-containing mouth rinses were all suppressed and depleted, suggesting the fungicidal effect of the active ingredients. Fungistatic activity was also exhibited by the CHX-containing mouth rinse on C. krusei. The growth inhibitory effect was also reflected by the coarse, wrinkled and dried colonies of C. krusei and C. tropicalis.

**Conclusions:** Mouth rinses incorporated with chlorhexidine, cetylpyridinium chloride and the combination of both, effectively inhibited the growth of C. tropicalis and C. krusei.

---

**P2**

The Target of Plant Extract in the Control of Oral Biofilm Development

(Faculty of Dentistry, University of Malaya, Kuala Lumpur)

**Purpose of the study:** The aim of this study was to determine how Triaquora Rinse®, a mixture of plant extracts, control the development of oral biofilm. The effect of this plant extract on the population of the different mixed-species (two- and three-mixed) bacteria in the developed biofilm were compared and evaluated.

**Materials and Method:** Biofilm was developed using artificial mouth system (NAM model) and tested against respective mixed-species bacteria (a) Strep. sanguinis and Strep. mitis, (b) Strep. sanguinis and Strep. mutans, (c) Strep. mitis and Strep. mutans, and (d) Strep. mitis Strep. sanguinis and Strep. mutans. Each experiment had two control groups (negative and positive) and test group were carried out simultaneously. Three glass beads were first exposed to saliva to develop simulated acquired pellicle, followed by bacterial inoculation and allowed for the formation of 24-hours biofilm. The developing biofilm was subsequently exposed to the plant extract and the bacterial population present in the biofilm determined by serial dilution method and expressed as the colony forming unit per milliliter (CFU mL⁻¹). The bacterial population of the biofilms for the respective mixed-bacterial species in the presence and absence of the extract were analysed statistically using Student's t-test. Sensitivity test was carried out to determine the property of the extract at the concentration used in the study.

**Results:** A reduction in the bacterial population in the biofilm exposed to the extract was more than 90 % for the biofilm of mixed-species bacteria containing Strep. mutans-Strep. mitis (p<0.0001). There was no evidence of bactericidal effect of the extract.

**Conclusions:** The plant extract exhibits a nonbactericidal effect and may reduce the bacterial population via modification of the binding capacity of bacteria in the biofilm which results in detachment. The study was supported by the IRPA research grant from the Ministry of Science, Technology and Environment of Malaysia.