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Abstracts & Proceedings

Advances in Biomedical Technology and Devices
- Their impact on Oro-Dental Research

Organised by:

COLLEGE OF DENTAL SURGEONS, SINGAPORE
Objective: The purpose of this study was to determine the molecular characteristics of oral Candida sp. based on the genetically conserved internally transcribed spacer (ITS) regions of candidal ribosome-coding DNA (rDNA).

Methods: Seven ATCC candidal species, C. albicans, C. tropicalis, C. krusei, C. parapsilosis, C. dubliniensis, C. glabrata and C. lusitaniae, were obtained as controls, and clinical samples were collected from the oral cavity of individuals. Purified colonies were cultured, and candidal genomic DNA was extracted using a glass beads disruption extraction method. Polymerase-chain reaction (PCR) was used to amplify different sections of the ITS region of candidal rDNA, and the amplified DNA was subjected to gel electrophoresis for visualization. Furthermore, the amplified DNA was subjected to MspI and HinfI restriction enzyme digests for restriction fragment length polymorphism (RFLP) comparisons.

Results: Comparing the sizes of the PCR products and restriction fragments from isolated clinical samples and those from control samples enabled differentiation of candidal species such as Candida albicans, Candida glabrata and Candida lusitaniae.

Conclusion: The rDNA ITS region may potentially be useful for oral candidal species identification.

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0226
ID: 154065

IMPACT OF MALOCCLUSION ON ORAL HEALTH-RELATED QUALITY OF LIFE

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Objectives: To assess the children’s orthodontic need by integrating normative and oral health-related quality of life (OHRQoL) measures.

Methods: A cross sectional study was carried out using a multistage cluster sampling technique. The sample comprised of 756 schoolchildren aged 13-14 years attending two secondary government schools in urban and rural areas of Klang District in Peninsular Malaysia. Each subject completed a self-administered questionnaire eliciting demographic information such as gender, ethnicity and parents' monthly income and questions on oral impacts using the Child-Oral Impact on Daily performances (Child-OIDP) index. Clinical data on occlusal status was collected using the Dental Health Component (DHC) of the Index of Orthodontic Treatment Need (IOTN).

Results: The prevalence of malocclusion was 41.4%. About 26% had definite need for treatment. The prevalence of Condition Specific-OIDP (CS-OIDP) attributed to malocclusion was 18.8%. A statistically significant difference was noted in the prevalence of CS-OIDP attributed to malocclusion between gender and the orthodontic treatment need (p<0.05).

Conclusion: The combination of the DHC-IOTN index with OHRQoL measures provided more information about the adolescents' perceived impacts on their quality of life by selecting children who are more likely to benefit from orthodontic treatment.

0227
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"IS HOUSEHOLD SMOKING A RISK FACTOR TO CARIES?"

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Objective: The study tested the hypothesis that household smoking (HHS) is a risk factor to caries in permanent teeth.

Methods: A case control study was conducted, whereby a case was defined as a child aged 13-14 years whose.
old with caries in at least one second permanent molar and control was defined as a child from the same school but with no carious second permanent molars. Matching was done for age, gender and ethnicity. Based on sample size estimation of 1 case: 4 control children, odds ratio of 20.00 and 95% CI, a total of 1199 school children were included. School dental records provided information on oral health status and oral hygiene status. Information on HHS, socio-economic status, child’s current smoking status, and child’s oral health practices were obtained from a self administered questionnaire, responded by the children and their parents.

Results: 55.9% of children with caries reported exposure to HHS, compared to 44.1% among those with no caries. Multiple Logistic Regression showed that children with caries were almost twice as likely (OR and 95% CI = 1.90 (1.35, 2.60) to have been exposed to HHS for more than 10 years as compared to those with no caries.

Conclusion: This study provides evidence that HHS is a risk factor to carious permanent teeth in children.

0228
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EFFECT OF MOUTH WASHES ON DENTAL BIOFILM FROM ORTHODONTIC ELASTOMERS

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Objectives: To compare the antimicrobial effects of commercially available mouth washes on dental biofilm isolated from orthodontic ligature, power chain elastics to assess bacterial morphology before and after treatment with mouthwashes.

Material and method: six commercially available mouth washes were included in this study (Oradex, Listerine, Oral B, Colgate Plax, tooth foam and dioxi rinse) and sterilized distilled water was used as a control. Orthodontic elastic ligatures were collected from 25 patients after 3 week of orthodontic treatment. Bacteria isolated then the gram stain used to identify the bacteria attached to orthodontic elastic ligature. Antimicrobial activity assessed by Minimal Bactericidal Concentration test (MBC) to determine the lowest concentration of bacteria inhibited by the fixed amount of tested mouthwashes after an overnight aerobic and anaerobic incubation at 37°C. Assessment of bacteria morphology performed with Scanning Electron Microscopy (SEM) before and after treatment with mouthwashes.

Results: Only cocci gram positive bacteria identified from elastomeric modules of all samples. MBC showed absence of bacteria growth in all tested mouthwashes. SEM examination of bacteria showed variable alterations in the morphology of the isolated bacteria.

Conclusion: This study showed that the tested mouth washes exhibit strong antimicrobial activity against gram positive cocci. While oradex represents significant morphological changes comparing to other mouth washes.

0229
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LOW MOLECULAR WEIGHT CHITOSAN: ANTITUMOR EFFICIENCY AGAINST ORAL CANCER CELLS

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