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A Retrospective Study to Evaluate the Effect of Type I and II Diabetes Mellitus on the Severity and Progression of Periodontal Disease

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Purpose of the Study: To assess the relationship in the severity and progression of periodontal disease in diabetics when compared with non-diabetic subjects.

Materials and Methods: A retrospective, comparative study using periodontal case notes of 40 subjects (20 diabetics, 20 non-diabetics) who were selected based on the inclusion and exclusion criteria. Severity of periodontal disease was assessed through number of periodontal pocket ≥4mm. The results were compared between subjects whose age, gender and plaque scores are matched with the test group. Data obtained was then analyzed by SPSS Version 12.

Results: When comparison was made between test (diabetic) and control (non-diabetic) groups, there was no significant difference (p>0.05) in the severity of periodontal disease. However, there was a clinically mean difference between the two groups.

Conclusions: Severity and progression of periodontal disease in diabetic subjects are greatly clinically compared to non diabetic subjects. However in our study, most of the subjects were undergoing regular medical check-ups at UMHC or other Health Centers and thus we expect their blood glucose levels especially the HbA1c were well controlled. Thus, it can only be postulated that the well controlled diabetic status from the patient's medical history does not have a significant difference or affect in severity and progression of periodontal disease.

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Effect of Piper betel and Brucea javanica on the Differential Species Expression of Hyphal Wall Protein (HWP1) in Non-Candida albicans Candida (NCAC) Species

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Purpose of the study: to identify the expression of HWP1 gene in Non-C. albicans Candida species and to determine the differential expression of HWP1 following treatment with Piper Betel and Brucea javanica aqueous extract.

Material and methods: Candidal cell suspension of C. albicans, C. dubliniensis, C. glabrata, C. krusei, C. lusitaniae, C. parapsilosis, and C. tropicalis were standardised to 10^6 cell/ml. The suspension was incubated overnight at 37°C (C. parapsilosis, 35°C). Candidal cells were then treated with each respective extracts at 1, 3 and 5 mg/ml for 24hours. Treated pellets were washed with PBS, and total RNA were extracted. Reverse transcription PCR (RT-PCR) was carried out with a specific primer of HWP1. Amplified samples were separated by agarose gel electrophoresis and the propensity of gene's expressions was visualised by ultraviolet illumination.

Results: HWP1 mRNAs were only expressed in C. albicans, C. parapsilosis and C. tropicalis. Exposing the cells to the aqueous extracts has affected the expression of HWP1 transcripts. C. albicans, C. parapsilosis and C. tropicalis have demonstrated different intensity of mRNA. Compared to P. betel, B. javanica demonstrated a higher suppression on the transcript levels of HWP1 in all samples. Hwp1 was not detected in C. albicans following treatment of B. javanica at 1 mg/ml. In contrast, C. parapsilosis and C. tropicalis were shown to have HWP1 regulation. However, the expression levels were reduced upon the addition of higher concentration of B. javanica extract.

Conclusion: P. betel and B. javanica have potential to be developed as oral health care product. This research was funded by High Impact Research (HIR) project grant (H-18001-00-C000017).