

ORAL MUCOSAL MUC1-EXPRESSION IS AFFECTED BY STRESS AND MENSTRUAL CYCLE *Y.H. LEE, Y.Y. KIM, J.Y. CHANG, H.S. KHO. SCHOOL OF DENTISTRY AND DENTAL RESEARCH INSTITUTE, SEOUL NATIONAL UNIVERSITY, SEOUL, KOREA (ROK).*

Objectives: The purpose of this study was to investigate the relationship among the MUC1 expression of oral mucosal epithelial cells, salivary 17 β -estradiol, progesterone, dehydroepiandrosterone (DHEA), cortisol, and chromogranin A levels during the menstrual cycle.

Methods: Thirty healthy women (25.9 $\pm$ 2.1 years) with normal menstrual cycle participated. All participants were examined for oral mucosal integrity and periodontal health. Collections of stimulated (SWS) and unstimulated whole saliva (UWS) and Brief Encounter Psychosocial Instrument (BEPSI) stress questionnaire were performed at the follicular, ovulatory, mid-luteal, and late-luteal phases. The oral mucosal epithelial MUC1 expression level was analyzed by real-time PCR using RNA extracted from whole saliva. The supernatants of UWS and SWS were used for the measurements of 17 β -estradiol, progesterone, DHEA, cortisol, and chromogranin A. The blood contamination level in saliva was also determined.

Results: Salivary 17 β -estradiol in the ovulatory and mid-luteal phases, and progesterone levels in the luteal phase were higher than those in other phases. Salivary flow rate, cortisol, DHEA, chromogranin A, BEPSI score, and MUC1 expression did not show significant changes across the menstrual cycle. When data of all 4 phases were analyzed together, positive correlations were observed between 17 β -estradiol and DHEA levels in UWS, between MUC1 expression and DHEA levels in SWS, and among cortisol, progesterone, and DHEA levels in both UWS and SWS. When data were analyzed in each phase, MUC1 expression was significant negatively correlated with cortisol in UWS and progesterone levels in both UWS and SWS during the mid-luteal phase. DHEA and cortisol levels showed significant positive correlations in every phase. Progesterone level had significant positive correlations with DHEA and cortisol levels only in the follicular phase.

Conclusions: MUC1 expression of oral mucosal epithelial cells was related with salivary stress and gonadal hormone levels and menstrual cycle. Psychoendocrinologic interactions can affect the oral mucosal defense.

A COST-EFFECTIVE STRATEGY TO TRIAGE PATIENTS WITH ORAL PREMALIGNANT LESIONS *Y.K. LIU, I. CROMWELL, A. KARSAN, C.F. POH. UNIVERSITY OF BRITISH COLUMBIA, VANCOUVER, BC, CANADA.*

Objectives: Watchful waiting is no longer a cost-effective strategy for the management of oral premalignant lesions. Loss of heterozygosity (LOH) at 9p21, 3p14, 17p13.1 and 4q has been applied for modeling cancer risk assessment tool for oral precancers. The objectives of this study are 1) to examine the feasibility using multiplex PCR assays to assess the alteration of LOH at key markers; and 2) to assess its cost effectiveness using this test to triage patients into different management schedules.

Methods: A total of 52 FFPE samples of low-grade lesions (LGL, 29) and high-grade lesions (HGL, 23) were analyzed LOH using 4 multiplex PCRs at 9p21 (9p171, 9p1751, 9p1748, IFNA), 3p14 (3p1300, 3p1234, 3p1228), 17p (17p786, 17pTP53, CHNRB1) and 4q (FABP2, 4q243) comparing to those using singleplex PCR. Fluorescence-based capillary electrophoresis (FCE) results were analyzed using GeneMapper® Software V4.1 (Life Technologies, Grand Island, NY). A health state transition

model was constructed to compare incremental cost-effectiveness in a hypothetical cohort of newly-diagnosed oral cancer patients managed according to current standard of practice to those whose management is informed by a genetic assay that stratifies into low-, medium-, and high-risk groups. Incremental cost-effectiveness ratios (ICERs) were calculated based on the costs and outcomes of the model.

Results: Under the criteria of calculated 60% difference scoring as LOH, there was greater than 90% consistency between overall singleplex and multiplex PCRs. Using this test, it showed lower average costs (\$11,029 CDN less per person) and higher average survival (0.98 more QALYs per person). Probabilistic sensitivity results suggest that this technology is more than 95% cost-effective when accounting for parameter uncertainty.

Conclusions: The proposed approach provides a cost-effective strategy to triage patients into different risk groups with different management regime. With further validation, this low-cost, fast-turnover, and objective test can improve current clinical care to these patients.

THE ROLE OF DENTAL METAL ALLERGY IN ORAL LICHEN PLANUS *D.M. HAMMOUDA, M.D. MARTIN. UNIVERSITY OF WASHINGTON, SEATTLE, WA, USA.*

Objectives: Oral lichen planus (OLP) and oral lichenoid lesions (OLL) present a diagnostic challenge. Etiologies and mechanisms for these are currently theoretical and the lesions are often clinically indistinguishable. Allergic reactions to dental materials may play a role in the genesis and course of these lesions. This study examined patch testing results for dental metals in subjects diagnosed with OLP and OLL.

Methods: Patients with mucosal disease diagnosed as OLP/OLL and who underwent dermal patch testing between 2000 and 2014 in the University of Washington Oral Medicine Service were included in this study. Allergy patch testing was performed by a single examiner according to ICDRG standards with readings taken at 48 and 168 hours. Metals allergens were from the Dental Materials Panel produced by Chemotechnique, and included Cr, Hg, Co, Au, Ni, Ti, Cu, Pd, Al and Sn. Ti was not initially included in the panel, so there are fewer Ti results.

Results: There were 35 males and 81 females. 83% were Caucasian. Diagnoses included biopsy-confirmed OLP (BCOLP, n=49), non-biopsy confirmed OLP (NBCOLP, n=40) and OLL (n=27). Prevalence data for reactions to these allergens exist only for dermatologic or allergy study populations (i.e. no "normals"). Nevertheless, results for any positive in this OLP/OLL population differ significantly for a number of metals including (literature-based "background"% / this study%): Cr: 7/46.6, Co: 10/32.8, Ni: 25/46.6, Pd: 12/25, Cu: 7/15.5, Au: 10/75. Some significant gender differences were seen in this population (men%/women%): Hg: 8.6/18.5, Co: 43/28.4, Cu: 23/12.3, Pd: 8.6/32. Results are also presented for association of test results with duration of lesions, type of lesions (erosive, etc.), biopsy-confirmed OLP vs others.

Conclusions: This study suggests that patients with diagnoses of OLP/OLL may experience significantly more allergy to dental metals than others. These findings may further elucidate the pathogenesis, course and management of OLP/OLL.

INVESTIGATION OF SLC6A4 GENE POLYMORPHISMS IN JORDANIAN RAS PATIENTS *J. KARASNEH, H. AL MAHDI, H. SHARAA, A. FLAIH, P.P. SEDGHIZADEH. UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES, CA, USA.*