2209 Lf Neutrophil Population Characterized by Significant Numbers of Immature Cells. M.A. DANIEL* and T.E. VAN DYKE (Baylor University School of Dentistry, Medical, Dallas, MA, USA).

Flow cytometric techniques were used to evaluate bacterial characterizing factor receptors (LAMP2) for both normal neutrophils and patients with localized juvenile periodontitis. Human neutrophils were isolated and labeled with a fluorescent (FITC) labeled specific bacterial peptide, FMLP. Flow cytometric analysis revealed an increased percentage of bacterial peptide receptors on neutrophils from patients with localized juvenile periodontitis. In conclusion, the Becton-Dickinson FACScan flow cytometry and data analysis was performed using LYSIS (BD) and WINLUST (Vestry Software) multiple, correlated, measures of both immature and mature neutrophils. The results suggest that localized juvenile periodontitis may be accompanied by an increased number of bacterial peptide receptors. This method is a useful tool for the study of neutrophil function and may provide new insights into the pathogenesis of localized juvenile periodontitis.


Objective: The purpose of this study was to investigate the clinical, histological, and microbial changes associated with gingivitis and periodontal disease progression. Materials and Methods: Fourteen male Sprague-Dawley rats were divided into 4 groups. Group A (0 mg/kg), Group B (60 mg/kg), Group C (120 mg/kg), and Group D (240 mg/kg). Each group was fed an experimental diet containing either 1% or 2% casein for 5 days without the administration of specific enzyme inhibitors. Results: The results demonstrated a significant increase in the number of bacteria isolated from the gingival pockets of rats fed the experimental diet compared to the control group. The presence of bacilli and other gram-negative bacteria was observed in the gingival pockets of rats fed the experimental diet. Conclusions: These findings suggest that the experimental diet may contribute to the development of gingivitis and periodontal disease. Further studies are needed to elucidate the mechanisms underlying the observed changes.

2221 P. gingivalis-induced Rat Model of Periodontal Disease/Negative/Active Phases. M.E. RYAN*, N.A. RAMAMURTHY, T. GOTTESMAN, R.T. EVANS, T. SCHIRA, and L.M. GOLUB (Stony Brook University and Buffalo, NY, USA).

Previous studies in germfree rats established temporal relationships between Porphyromonas gingivalis (P.g.) infection and alveolar bone loss. The current study developed a pathogen-reduced P. gingivalis-infected model of periodontitis based on microbial shifts, to replace cumbomergera germfree experiments which are not utilized on the natural oral microflora. The model time course was previously established (Shearman et al., 2010). The current model used wildtype adult Sprague-Dawley rats. The rats were inoculated for 3 days with 10 mg/ml P. gingivalis (American Type Culture Collection). The rats were divided into 4 groups: Group A (0 mg/kg), Group B (60 mg/kg), Group C (120 mg/kg), and Group D (240 mg/kg). Each group was fed an experimental diet containing either 1% or 2% casein for 5 days without the administration of specific enzyme inhibitors. Results: The results demonstrated a significant increase in the number of bacteria isolated from the gingival pockets of rats fed the experimental diet compared to the control group. The presence of bacilli and other gram-negative bacteria was observed in the gingival pockets of rats fed the experimental diet. Conclusions: These findings suggest that the experimental diet may contribute to the development of gingivitis and periodontal disease. Further studies are needed to elucidate the mechanisms underlying the observed changes.


Identification of the early gene a probe that triggers gingival collateral gene expression is of considerable interest in understanding the pathogenesis of periodontal disease. Several growth factors and cytokines have been shown to activate members of the AP-1 family of transcription factors. In this study, we investigated whether treatment with recombinant human TGF-alpha induced the expression of AP-1 target genes in human gingival fibroblasts. Methods: The recombinant human TGF-alpha was treated with recombinant human TGF-alpha for 24 hours. The mRNA was isolated from human gingival fibroblasts and the expression of AP-1 target genes was determined by real-time PCR. Results: TGF-alpha treatment resulted in an increase in the expression of AP-1 target genes. Conclusions: These findings suggest that TGF-alpha may play a role in the activation of gingival collateral gene expression.