

1969 Randomized Clinical Trial of a Group Intervention for Older Periodontal Patients. J.F. HOLLIS*, S.J. LITTLE, V.J. STEVENS, J. MULLOOLY, B.D. JOHNSON (Kaiser Permanente Center for Health Research, Portland Oregon).

Effective strategies for changing periodontal patients' long-term oral hygiene behavior have not been established. This randomized clinical trial assessed the long-term effect of a group-based behavioral modification intervention on oral hygiene skills and adherence of patients with mild to moderate periodontal disease. All subjects (n=107), ages 50 to 70 years, received baseline and 30-month follow-up data collection including pocket depth, attachment loss, gingival bleeding, bleeding on probing, observed oral hygiene skills and reported oral hygiene practices. Intervention patients (n=54) attended a series of five group classes that focused on skills training, self-monitoring, and long-term behavior change. Both groups received their usual oral health care and did not differ in the mean number of dental cleanings or periodontal maintenance care received during the course of the study. Effects found previously at 12 months were maintained at 30 months, including significant effects at 30 months in bleeding on probing (p=.009), plaque scores (p=.006), as well as observed brushing and flossing skill (p=.001) and reported flossing frequency (p=.06). No significant difference was evident between the groups for pocket depth or attachment loss. These results suggest that group behavior intervention produced significant and lasting improvements in patients' behavior, skill and gingival health indicators. NIDR NOI-DE-12589

1970 Longitudinal study of four patients with localized juvenile periodontitis (LJP). A. E. RICCELLI*, S. AGARWAL, L. TUPTA-VESELICKY, M.B.A-REIDY, N.P. PIESCO. (Univ. Pittsburgh, Pittsburgh, PA, USA).

Localized juvenile periodontitis (LJP) is an aggressive disease, affecting young adults. Although patients with this disease appear to be immunologically healthy, the neutrophils in the majority of cases exhibit decreased migration towards chemotactants. Additionally, high serum titers of antibodies to *Actinobacillus actinomycetemcomitans* (Aa) have also been observed in most cases. This study was designed to determine the importance of maintenance therapy and the correlation of active disease with immunological characteristics. Four LJP cases were clinically and immunologically examined in a longitudinal study for a 2 year period. In all cases, patients exhibited decreased neutrophil chemotaxis and presence of antibodies to Aa at the start of the therapeutic regimens. Although the therapeutic regimens differed, protocols for maintenance therapy were similar. Initial therapy included scaling, root planing and antibiotic therapy. Case A1, required no further treatment following initial non-surgical therapy. Cases, A2, A3 and A4, required surgical intervention. Upon compliance to maintenance program, cases A1, A3 and A4 exhibited resolution of periodontal infection accompanied by normal neutrophil function. Case A2 resulted in relapse paralleled by non-compliance of maintenance therapy. It was of interest that the relapse of LJP in A2 was accompanied by sustained high titers of seropositivity to Aa, along with decreased neutrophil chemotaxis. While A1 was seropositive in the absence of clinical symptoms of the disease, A3 and A4 became negative for serum antibodies to Aa. The study shows that, (1) compliance to maintenance protocols are of utmost importance for the aggressive forms of periodontal disease, (2) immunological testing in addition to clinical findings may be important as an adjunct in diagnoses as well as in evaluation of the treatment effectiveness in LJP. DEO9830

1971 Gingival Inflammation in Relation to Percentage of Tooth Surface Covered by Plaque. B. SÖDER*, F. LAGERLÖF, L.J. JIN and P.-Ö. SÖDER. (Department of Clinical Oral Sciences, Karolinska Institutet, Stockholm Sweden).

The aim was to study the relation between the percent of tooth area covered by plaque and presence of gingival inflammation. 40 adults, 20 females and 20 males, mean age 42.2 ± 12.2 (SD) yrs, with probing pocket depths ≤ 3 mm were selected after a comprehensive professional cleaning, resulting in gingival index 0 (GI). The subjects were asked to continue their individual oral hygiene habits during the observation period. Gingival inflammation was measured with gingival index (GI) and plaque area was determined as percent of tooth area covered by plaque (P%I) at three times with an interval of one month. Each session was completed with professional cleaning. The average P%I obtained for each individual at the three different observations were pooled into four groups based on GI, and analyzed with ANOVA. For GI 0, the mean P%I was 15.2±6.7(SD), for GI 1 18.3±7.5%, for GI 2 18.4±7.3%, and for GI 3 25.6±12.0%. The difference in P%I between GI 0 and GI 1 was significant (p<.001). There were also differences between GI 0 and GI 2 and between GI 0 and GI 3 (p<.05). Females showed higher scores at GI 1 compared to males (p<.01). In conclusion, there was a clear relationship between P%I and GI. Females respond with clinical sign of inflammation at lower P%I than males. However, a large individual variation was observed. The study was supported by the Swedish Patent Revenue Fund and Karolinska Institute.

1972 Changes in Dental and Malodor-Associated Parameters One Year Following a Bad Breath Consultation. M. ROSENBERG*, Y. WIND, E. MANDEL AND A. KOZLOVSKY (Tel Aviv University, Ramat Aviv 69978, ISRAEL).

The purpose of the study was to detect changes in (i) oral malodor levels; (ii) periodontal-disease associated parameters; and (iii) self-assessment of oral malodor, following a consultation on oral malodor. Initially, subjects (N=52) were assessed for parameters related to oral malodor and periodontal disease (odor judge measurements, levels of volatile sulphide, salivary cadaverine levels, BANA scores from four sites, plaque index, gingival index and probing depth). Subjects were also asked to assess their own malodor levels. The consultation included an explanation of the importance of proper dental treatment coupled with oral hygiene procedures, particularly flossing and tongue brushing. Following one year, 32 of the subjects agreed to be retested. Significant reductions were noted for whole mouth odor (judge assessment; p=0.006; paired t-test) and saliva odor (judge assessment; p=0.009), however, no change in tongue odor was noted (p=0.980). In contrast, subjects' self-estimation scores of whole mouth and saliva odor were unchanged (p>.02), whereas self-assessment of tongue odor was considerably reduced (p=0.017). Whereas a significant reduction was found in gingival index (p=0.025), reductions in plaque index and probing depth were not significant (p=0.065 and p=0.104, respectively). As a result of the initial study, 85% of the subjects sought professional dental care, and 35% reported an improvement in their oral malodor level. The data suggest that a bad breath consultation may lead to improvements in malodor and periodontal disease-related parameters, but not in one's ability to assess one's own oral malodor.

1973 Oral Hygiene Patterns Observed in Infective Endocarditis. R.S. Feldman*, B.L. Strom, E. Abrutyn, J.A. Berlin, J.L. Kinman, M.E. Levinson, O.M. Korzeniowski, D. Kaye (VAMC/UPENN School of Dental Medicine, School of Medicine, Medical College of PA, Philadelphia, PA, USA).

A clinical assumption construes that deficient oral hygiene, as a source of transient bacteremia implicated in Infectious Endocarditis (IE), may constitute a cumulative risk for IE. We identified 273 patients by surveillance of 54 hospitals in the Delaware Valley from August 1988 to November 1990. IE was categorized prospectively by clinical judgement of infectious disease experts (MEL, OMK, DK) as definite, probable or possible IE, or as probable non-case. Controls were identified by random digit dialing and matched by 5-year age strata, sex and neighborhood. Dental records from community-based providers were reviewed to determine treatment histories. Toothbrushing, use of water pick, toothpick and gum stimulators were no less frequent in IE patients than in controls, although frequency of flossing was significantly less in IE patients than controls; OR(CI)=0.42 (0.18-1.00). Test for trend from 'no use' (n=242) to 'greater than once/day' (n=27) of flossing showed a significant trend (p=.05). IE was significantly associated with public health insurance (n=32 vs. private (n=470); OR(CI)=4.0(1.59-11.96). Public dental insurance (n=16) vs. private insurance (n=213) was not significantly related to risk, although the point estimate of relative risk was consistent with the general health insurance result; OR(CI)=3.5(0.67-34.5). Our data suggest that sophistication in oral hygiene may be protective for IE. Support: NIH R01 HL 39000.

1974 Putative Periodontopathic Bacteria and Progressive Alveolar Bone Loss. M.K. JEFFCOAT*, E. CHAVES, B. SYNDER, AND C. RYERSON. U. Alabama School of Dentistry, Birmingham, AL, and J&J Clinical Diagnostics.

The purpose of this study was to determine if the presence of bacterial antigens for *Porphyromonas gingivalis* (Pg), *Prevotella intermedia* (Pi), and *Actinobacillus actinomycetemcomitans* (Aa) in subgingival plaque after periodontal treatment was associated with progressive alveolar bone loss. 40 subjects with adult periodontitis were studied. All subjects were treated with scaling and root planing. Half the subjects received adjunctive systemic doxycycline (200 mg first day then 100 mg per day for 21 days). Subgingival plaque samples were taken at 1, 3, and 6 months after treatment. A modified ELISA test (EvaluSite, Eastman Kodak Co.) was used to test for plaque antigens associated with Pg, Pi, and Aa. Progressive alveolar bone loss was determined using digital subtraction radiography with standardized radiographs taken at baseline and 6 months after treatment. The presence of Pg in plaque after treatment was significantly associated with progressive bone loss (positive predictive value 84%, negative predictive value 85%, odds ratio 31.9, p<.0001). In contrast, the presence of Pi in plaque after treatment was not indicative of progressive bone loss (positive predictive value 39%, negative predictive value 82%). Too few sites had evidence of Aa to be amenable to statistical analysis. No significant difference in bone loss was attributable to the systemic antibiotic therapy. These data indicate that in this population of adult periodontitis patients the presence of Pg antigens in plaque after treatment may be indicative of progressive alveolar bone loss. Supported by Eastman Kodak, Co. and NIH NIDR 08917.

1975 Prevalence of *Porphyromonas gingivalis* strains in health and disease. M.M. ROSEL*, A.L. GRIFFEN, L.A. CHRISTOPHER, S.R. LYONS, C.H. DEVORE, E.J. LEYS (The Ohio State University, Columbus, Ohio).

The presence and number of strains of *P. gingivalis* was determined for both periodontally healthy and diseased individuals using a molecular assay. Subjects were included in the diseased group if CAL ≥ 7 mm in 3 or more teeth and PPD ≥ 6 mm for 2 or more teeth. Subjects were excluded from the healthy group if PPD ≥ 5.5 mm or CAL ≥ 5.5 mm at any site. Approximately 9000 patient charts were screened to select likely candidates. Of these, approximately 1000 were examined and 264 healthy and 214 diseased subjects were identified. The mesial sulcus of each tooth present was sampled using paper points. All sites were pooled for analysis. Genomic DNA was isolated directly from the sample and a *P. gingivalis*-specific fragment was generated by PCR using species-specific primers. The presence of species-specific amplification products was detected by agarose gel electrophoresis. The presence of multiple strains was determined by heteroduplex analysis using polyacrylamide electrophoresis. A chi-square test was used to compare the prevalence of *P. gingivalis* and the presence of multiple strains in the healthy and diseased groups. Seventy-three percent of diseased subjects were colonized and 44% of healthy subjects were colonized (p=.0000). Of colonized subjects, 46% of the diseased individuals harbored multiple strains while only 14% of the healthy individuals did so (p<.0002). Diseased individuals were more likely to be colonized and more likely to harbor multiple strains. Supported by NIH Grant DE10467

1976 Progression of Periodontal Diseases. O. SHIBLY*, M. O. KHARCHAF, M. F. NASHEF, S. CIANCIO, and M. MATHER M. (Center for Dental Studies, SUNY at Buffalo, NY)

Progression of periodontal disease is relatively in frequent bursts of destruction followed by period of stability. The purpose of this study was to evaluate the progression of moderate to severe adult periodontitis for two years. Forty-three patients (24 male and 19 female), ages 35-74 with moderate to advanced periodontal disease participated in this study. Deep pockets of 5mm or greater were monitored during the study. Attachment level (AL), using a Florida Probe System (FPS) and measured from a fixed reference point (stent) was recorded at baseline and every 6 months for the two years. A supragingival scaling was performed at baseline and every 6 months during the study. No further treatment was done. Patient's normal oral hygiene was maintained. Results showed that there was a slight loss in the AL at 6 months (0.16mm). This was statistically significant (p=0.008). However, AL loss (from baseline) at 12 (0.12mm) and 24 (0.12mm) months were not significant (p>.05). There was a slight gain in the AL when month 18 and 24 were compared to month 12 (0.78, 0.74mm respectively), but this was not significant (p>.05). Results demonstrated that AL measured by the FPS showed slight loss from baseline but was neither statistically or clinically significant. This study indicates that adult periodontitis patients may demonstrate stability in the progression of their disease with minimal treatment.