Koshy G, Kawashima Y, Kiji M, et al. Effects of single-visit full mouth ultrasonic debridement versus quadrant-wise ultrasonic debridement. J Clin Periodontol 2005; 32: 734-43.

Purpose: To compare the clinical and microbiological effects of single-visit full-mouth ultrasonic debridement with or without additional anti-microbiological agents to those of conventional quadrant-wise therapy.

Materials and Methods: The subjects were 36 systemically healthy, non-smoking patients (34-66 years old). All patients presented moderate-to-advanced chronic periodontitis and had at least 5 teeth and 2 pocket sites with probing depth \geq 5 mm in each quadrant and bone loss. Then, they were randomly distributed to 3 different groups.

- 1. conventional quadrant-wise mechanical debridement (QMD): supra- and subgingival ultrasonic instrumentation + irrigant (distilled water)
- 2. full-mouth mechanical debridement with a water in a single visit (<u>FMD + water</u>): supra- and subgingival ultrasonic instrumentation + irrigant (distilled water)
- 3. full-mouth mechanical debridement with povidone iodine in a single visit (<u>FMD + povidone</u>): supra- and subgingival ultrasonic instrumentation +irrigant (1% povidone iodine) + chlorhexidine mouthwash twice a day + tongue brushing. In addition, all subjects were recalled every month for OHI and professional tooth cleaning.

Findings: Clinical aspects

- Pl: The plaque scores showed improvements after treatment in all groups, but there was no statistically significant difference in each group.
- BOP: The BOP showed improvements after treatment in all groups. The reduction in bleeding in the FMD groups was significantly greater than that in the QMD group after 3 month. At 6 month, the FMD + water group (Δ =61.9%) still presented greater reduction in bleeding the QMD group (Δ =49.2%).
- PPD: There were significant reductions in all groups. Considering the number of sites at the pocket sites ≥ 5 mm, FMD groups had a significant reduction than QMD group. However, the 3 treatment groups demonstrated similar reductions in PD when both full-mouth measurements and pocket sites alone.
- PAL: All treatment groups showed gain in full-mouth attachment levels and sites ≥5 mm at 1 month, 3 months, and 6 months with no evidence of any difference between groups.
- Time: While the FMD + povidone and FMD + water groups took an average of 2 h 19 min. and 2 h 7 min., respectively, the QMD group required 2 h 58 min. The total time taken in FMD groups was significantly shorter than that in QMD group.
- Pain level: The level of QMD group was slightly higher than that of FMD groups. However, there was no significant difference between groups.

Microbiological aspects

• When compared between groups, there was no significant difference in the detection frequency of the four periodontal pathogens (Pg, Tf, Td, and Aa).

Conclusions: Single-visit full mouth mechanical debridement has small benefits over quadrant-wise therapy in the treatment of periodontitis.

Rhemrev GE, Timmerman MF, Veldkamp I, Van Winkelhoff, et al. Immediate effect of instrumentation on the subgingival microflora in deep inflamed pockets under strict plaque control. J Clin Periodontol 2006; 33:42-48. (49 Refs)

Purpose: To investigate the reduction in the number of microorganisms that is obtained directly after subgingival instrumentation and to study the rate of bacterial re-colonization during the subsequent 2 weeks under conditions free of supragingival plaque, in a cohort that was balanced for smoking habits.

Materials and Methods: 22 untreated periodontitis patients with moderately deep pockets PD > 5 mm and generalized BOP (mean age 44.8 years). Smokers (mean pack years 17.6) numbered 11 and nonsmokers 11. One experimental site per patient was selected that fulfilled the following criteria: 1) deepest inter-proximal site with PD > 5mm and BOP at a single-rooted tooth, 2) shallow buccal and lingual PD \leq 4mm on the same tooth, and 3) absence of any angular bone defects exceeding 45°. Treatment was divided into two phases in order to obtain supragingival plaque-free conditions: Phase 1, started at the intake and consisted of an exam, OHI, and supragingival instrumentation at all teeth. Subgingival instrumentation was performed at all teeth except the two, the experimental tooth and its neighbor. Use of a powered-tooth brush (Oral-B) was instructed along with the use of inter-dental brushes, synthetic gauze and dental floss or tape as appropriate. Plaque control was monitored weekly. A maximum of six sessions of 1h/week were necessary for peridontal treatment depending on severity and extent of disease. Instrumentation was provided by hand and ultra-sonic instruments. Phase II started 1 week after completion of phase I. A single episode of subgingival instrumentation was performed at the selected tooth and its neighbor using only hand instruments. Microbial assessments were performed at pre-instrumentation, immediate post-instrumentation and 1 and 2 weeks after instrumentation. This was performed using endodontic paper points inserted alongside a periodontal probe. Samples were examined with a microscope and then cultured on pathogen specific media. Patients rinsed 2x/day with 0.2% chlorhexidine and used an inter-dental brush moistened with CHX at the selected tooth sites to maintain maximal supragingival plaque control. Clinical measurements at the experimental sites were obtained on intake, pre-instrumentation and 1 and 2 weeks.

Findings and Conclusions: At the experimental sites plaque was reduced to near zero levels at pre-instrumentation and weeks 1 and 2 of Phase II. Mean BOP scores were reduced over 50% in Phase II, but BOP still existed in approximately 45% of sites. PD's were also reduced from a mean of 5.36 at pre-instrumentation to 5.14 and 4.91 at 1 and 2 weeks post-instrumentation, respectively. Immediately after instrumentation almost no effect on the prevalence of specific periodontal bacteria was found except for spirochetes, which reached significance from pre-instrumentation. At one week post-instrumentation, only Prevotella intermedia was reduced enough to show significance from immediate post-instrumentation. At two weeks post-instrumentation, only *P. intermedia* and *P. gingivalis* showed a significant reduction from immediate post-instrumentation. Smoking did not appear to have any significant effect on any bacteria examined. Mean total anaerobic count as determined by culture at pre-instrumentation was 3.784 x 10⁶/ml CFU. At immediate post-instrumentation total CFU were significantly reduced to a mean of 0.092 x

10⁶, a 41 fold reduction. No more significant reductions in total CFU were observed over the following 2 weeks of post-instrumentation time. Regarding individual species, *Tannerella forsythia, Fusobacterium nucleatum, Micromonas micros* and *spirochetes* were significantly reduced at immediate post-instrumentation from pre-instrumentation. However, at the following two weeks post-instrumentation, only *F. nucleatum* reached any additional reduction of significance. It appears that mechanical instrumentation in periodontally involved pockets around teeth did not completely remove all bacteria observed in this study.

Vettore M, Quintanilha RS, et al. The influence of stress and anxiety on the response of non-surgical periodontal treatment. J Clin Periodontol 2005; 32: 1226-35. 50 (Refs)

Purpose: The purpose of the article was to evaluate the possible influence of stress and anxiety on the response to non-surgical periodontal therapy (NPT) in patients with different levels of chronic periodontitis.

Materials and Methods: In this case-control, longitudinal, double-blind study, stress and anxiety in patients with different levels of chronic periodontitis were assessed. Patients were assigned to one of the three following groups in accordance with their Pocket Probing Depth levels; the control group (C) had less than four sites with PPD \leq 4 mm. Test group 1 (T1) had at least four sites with PPD \geq 4 mm and \leq 6 mm and test group 2 (T2) had at least four sites with PPD > 6mm. Psychological measures to assess stress and anxiety included three psychometric instruments. The Stress Symptoms Inventory (SSI) aims to detect whether a patient presents with a clinical stress syndrome. Patients were asked to indicate whether a number of physical and psychological stress symptoms had occurred recently. Anxiety was assessed with the Spielberger State-Trait Anxiety Inventory (STAI) adapted to the Brazilian population. This inventory consists of two self-report scales. The State Anxiety (SA) scale asks respondents to indicate how they feel at a specific moment in time. The Trait Anxiety (TA) scale requires that subjects describe the way they generally feel.

All patients underwent a clinical examination by two calibrated examiners and the Plaque Index (PI), Gingival Index (GI), PPD, and Clinical Attachment Loss (CAL) were recorded. All patients received periodontal therapy based on PPD. Patients with PPD < 4 mm received supragingival scaling, coronal polishing, and topical fluoride. Patients with periodontal disease received S&RP in all sites with PPD > 3mm. The removal of retentive factors for dental plaque accumulation including overhanging restorations and carious cavities was performed according to need. After the completion of NPT, all patients had supportive monthly periodontal therapy. Periodontal clinical measurements and stress and anxiety assessment were also registered 3 months after NPT in all subjects. The data was statistically analyzed. The influence of psychosocial factors on periodontal status was assessed using two strategies. 1) The frequency of PPD and CAL categories of < 4 mm (shallow), 4-6 mm (moderate), and > 6 mm (deep) were compared between baseline and after NPT for stressed and non-stressed patients in each group by the Wilcoxon signedrank test. 2) The difference of PPD and CAL frequency >4, 4-6, >6 mm between initial and 3 months after NPT were computed to assess the reduction of periodontal disease clinical parameters. Univariate analysis of covariance was carried out on the reduction of PPD and CAL frequencies (dependent variables) with all psychosocial measures (independent variables) adjusting for dental plaque and number of cigarettes (covariates).

Findings and Conclusions: A total of 66 patients were considered for the final analysis. There was no statistically significant difference between the three groups. All periodontal measures were significantly different among the three groups at both baseline and 3 months after NPT analysis with the exception of PI. A significant reduction in the frequencies of moderate (4-6 mm) and deep (>6 mm) PPD and CAL categories was observed 3 months after NPT for Test group 2 (T2), and T1 showed a similar reduction.

The percentage of sites with visible dental plaque and BOP dropped significantly in all groups. Group T1 showed the highest frequency of patients with clinical stress at both assessment times. The frequency of stressed patients 3 months after NPT increased in control and T1 groups from 19.1 and 29.4% to 47.0 and 58.9%. No significant differences for clinical stress among groups were found at baseline and 3 months after NPT. The average scores for TA among the three groups were statistically different at baseline and 3 months after NPT. Correlation analysis between psychosocial factors and periodontal clinical measures: Since TA seems stable over a short time, only baseline scores for TA were analyzed. Significant associations were observed between PPD and CAL frequencies >4.0 and 4-6 mm and high scores of TA in baseline and 3 months after NPT. Frequencies of deeper CAL 3 months after NPT were also found to be significantly associated with high scores of anxiety trait. High scores of SA at baseline with significantly associated with visible dental plaque. Univariate analysis of covariance was performed on the reduction of PPD and CAL frequencies >4, 4-6, and >6 mm with all psychosocial measures. Scores of TA were statistically associated with the reduction of deeper CAL frequencies, reduction of deeper PPD frequencies, and reduction of PPD frequencies > 4.0 mm. TA was related to periodontitis at baseline and after NPT. PI was associated with SA at baseline. The reduction of frequency of CAL >6mm was correlated with TA after adjusting for cofounders. Stressed subjects did not show reduction of frequency of PPD >6mm (T1), CAL4-6 mm and CAL >6mm (T2).