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Guest Editorial

# Single-visit, full-mouth ultrasonic debridement: a paradigm shift in periodontal therapy?

Focused Perspective on Koshy et al., J Clin Periodontol 2005; 32: 734–743

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The mainstay of periodontal therapy has traditionally been professionally performed subgingival debridement coupled with support to attain adequate personal oral hygiene. This approach is often the definitive treatment or can be the initial phase prior to surgical therapy in severe cases of periodontitis. Mechanical therapy, either hand instrumentation or ultrasonic debridement, is the most common therapy for periodontitis and has well-documented success. Non-surgical periodontal treatment of patients with severely advanced periodontitis results in a marked clinical improvement in moderate and deep pockets (Badersten et al. 1984a, b). There is, however, a price to pay for this successful therapy, which involves considerable amounts of time, a high level of operator skill and dedication and some unavoidable discomfort for the patient. It has often been remarked that the time taken for periodontal therapy of severe periodontitis cases exceeds that needed for coronary artery bypass surgery. It is not unreasonable for our medical and surgical colleagues to view with disbelief our treatment strategies and consider the necessary attention to each tooth and every subgingival aspect of the teeth to be too laborious, time consuming and difficult in the age of lasers, nanotechnology and drug advances.

Although long accepted as a feasible treatment modality, Quirynen et al. (1995) re-introduced the one-stage full-mouth disinfection and compared the clinical and microbiological effects of this treatment strategy (FMRP) with the widespread practice of quadrant scaling and root planing at 2-weekly intervals (QRP). The rationale behind their treatment strategy was to prevent re-infection of the treated sites from the remaining untreated pockets and intra-oral niches, over the course of therapy. The results revealed a significant reduction in pocket depth for the FMRP over the QRP group for deep pockets. Quirynen et al. (2000) repeated this study and concluded that the elimination of the periodontopathogens in addition to the possible host response benefits after the one-stage full-mouth therapy is the effective aspect of the therapy rather than oral chlorhexidine disinfection. A more recent study by Kinane's group in Glasgow failed to demonstrate differences in the clinical, microbiological or immunological outcome between QRP and FMRP. Marked improvements in all clinical indices were detected after both treatment modalities and were consistent with results from other studies (Apatzidou & Kinane 2004). FMRP was well tolerated by patients, and these authors concluded that the clinician should select the treatment modality based on practical considerations related to patient preference and clinical workload.

The report published in the present issue by Koshy et al. (2005) re-analyses the effects of FMRP and QRP but using ultrasonic rather than hand instrumentation. Although there was a slight benefit for FMRP over QRP in terms of bleeding on probing, there were no differences in pocket depth reduction or attachment gains. This is a welcome addition to the literature, concluding that either full-mouth or quadrant ultrasonic debridement is just as effective clinically and microbiologically, and that the treatment choice should depend on the time available and patient and operator preferences. Future studies should consider potential patient-centred benefits and determine just how extensive the instrumentation needs to be to achieve the clinical goals. An example of such a study was that of Wennstrom et al. (2001), who compared two non-surgical treatments of chronic periodontitis, both using locally delivered doxycycline. The two modalities involved initial and 3-month therapy and were of different clinical durations: one involving predominantly ultrasonic therapy over 2 h and the other, scaling and root planning for more than 3 h. Both treatment modalities were concluded to be equally effective at 6 months and a recommendation was made that the simplified, shorter modality comprising ultrasonic therapy with adjunctive local doxycycline is effective. These studies are consistent with the systematic review findings of Tunkel et al. (2002), and support the efficacy of a simplified one-visit full-mouth ultrasonic debridement with or without adjunctive antimicrobials. These recent developments may yet constitute a significant paradigm shift in periodontal practice as they are universally needed and frequently used procedures.

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