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Guest Editorial

Heresy? Treatment of chronic periodontitis with systemic antibiotics only

Focused Perspective on López et al., J Clin Periodontol 2006; 33: 648–660.

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An article published in this issue (Lopez et al. 2006), reporting the effects of systemic antibiotics without subgingival scaling and root planing on chronic periodontitis, challenges a central paradigm of contemporary clinical periodontology: Mechanical removal of bacterial deposits on subgingival root surfaces is the key intervention to treat periodontal disease, of whatever class, and in whatever clinical circumstances. Lopez et al. also challenge the current prevailing opinion that the use of systemic antibiotics should be restricted to specific groups of periodontal patients, for example those with highly active disease or a specific microbiological profile (Herrera et al. 2002).

The legitimacy of placing scaling and root planing into the centre of our clinical activity is based on extensive clinical research. Periodontal diseases can indeed be treated successfully with mechanical means, and results can be maintained by regular mechanical cleansing of teeth. Even though mechanical treatment does not predictably eliminate all bacteria from diseased sites completely, a precautionary, restrictive attitude towards using antibiotics has been recommended, basically to limit the development of microbial antibiotic resistance in general, and to avoid the risk of unwanted systemic effects of antibiotics. While recognizing these concerns fully, we should, however, not ignore several arguments in favour of a less restricted approach to antimicrobial therapy. First, an increasing number of studies now shows significant clinical benefits of antibiotics (systemic amoxicillin plus metronidazole, used as an adjunct to mechanical treatment, in particular), even in cases of common chronic periodontitis, and also with no evidence for the presence of specific target organisms. Second, studies indicate that the addition of antimicrobial agents to mechanical treatment may reduce the need for further treatment. Given their relatively low cost in comparison with potentially avoidable further mechanical therapy, antibiotics could increase the efficiency of periodontal care and their use may be defended from a strictly economic viewpoint. Lopez et al. point to the fact that many periodontal patients do not have access to state of the art periodontal therapy because of limited financial and human resources, particularly in developing or underdeveloped countries. Is it better not to treat these people at all, or to offer them a perhaps not optimal but still relatively efficient treatment? Third, mechanical therapy has unwanted effects as well, particularly when performed repeatedly; it damages hard tissues and produces gingival recessions. As bacteria may be inaccessible to mechanical instruments in concavities, lacunae, and dentin tubules (not to mention invaded soft tissues), substantial hard tissue trauma may arise from repeated attempts of instrumentation in locally unresponsive sites, or sites with recurrent disease. Which study has proven that particular patients are better off, if treated *without* antibiotics?

Our general current consensus that mechanical instrumentation must always precede antimicrobial therapy, also challenged by Lopez et al., is founded on two arguments: First, we should quantitatively reduce the large mass of bacteria, which otherwise may inhibit or degrade the antimicrobial agent. Insufficient concentrations of the active agent may again favour the emergence of resistant strains. Second, we should mechanically disrupt the structured bacterial aggregates that can protect the bacteria from the agent. We need to recognize, however, that this requirement is based on deductive thinking. Research is indeed needed regarding antimicrobial agents administered without mechanical debridement, to substantiate the claimed problems. Lopez et al. have done this in a pilot study. Yet, systemic antibiotics are taken thousands of times worldwide every day without subgingival debridement; it happens whenever patients with untreated periodontal disease are given antibiotics for medical reasons. Let's not forget how metronidazole was introduced into the periodontal field: In 1962, *The Lancet* published the report of a female patient, who after a week of treatment for trichomonal vaginitis with metronidazole (200 mg t.d.s.) declared she had undergone ''a double cure''. The vaginitis was cured and the ''acute marginal gingivitis'', she was also suffering from, was relieved (Shinn 1962).

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