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Journal of Clinical Periodontology

Letter to the Editor

Dear Sir

We agree with Dr van Winkelhoff that more work needs to be done before we can say '*we are there*' with regard to the use of systemic antibiotics as adjuncts to periodontal treatment. Dr van Winkelhoff indicates that evidence-based periodontal treatment requires scientific evidence of clinical efficacy. This is true but is only part of the picture.

One other critical element is evidence of safety/risk (Mombelli 2005). As the author points out, use/misuse of antibiotics has led to microbial resistance (Van Winkelhoff et al. 2000). It is therefore somewhat surprising that few studies have been conducted to assess this problem and other risks/adverse effects of systemic antibiotics in periodontology. Lack of evidence is not evidence of no risk.

Randomised controlled trials (RCT) are good at investigating beneficial effects of interventions. However, they should not be relied upon to give conclusive evidence of harms and other study designs should also be used (Mittmann et al. 1999, Vandenbroucke 2004). Minor adverse effects are often reported in RCTs of systemic antibiotics in periodontology. More serious events may not appear in such trials if they are infrequent (e.g. anaphylaxis), take time to develop or are not examined (e.g. antibiotic resistance).

Therefore, to answer the question posed by the author '*are we getting somewhere*' in the evaluation of adjunctive systemic antibiotics for periodontal diseases we must take more seriously the investigation of potential risks as well as the investigation of efficacy. Without such data, clinical decision-making will continue to be problematic and patient consent unsafe.

References

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Yours sincerely
I. Needleman, M. Wisson
& A. J. van Winhelhoff

Response

Dear Editor,

I am grateful to Drs. Needleman & Wilson (2006) for their response to the editorial ''Antibiotics, are we getting somewhere'' (van Winkelhoff 2005). It is true that we, workers in periodontology, are rather good in designing and conducting randomized controlled clinical trials to establish what works and what does not. It is also true that most individual randomized controlled trials provide little information on adverse effects of the test drug(s). In systematic reviews of randomized controlled trials adverse effects of periodontal interventions are seldom an integral part of the review. We perform poorly in pharmacoepidemiology and therefore, we lack the information on the side and adverse effects of drug prescription. Assessment of risks and adverse effects should however not be limited to the use of antibiotics. Mechanical periodontal treatment irreversibly removes host tissues, clinicians cause bacteraemia all the time, we prescribe all kinds of antiseptics, we inject anaesthetics, we install permucosal implants, and we use surgery to restore periodontal health or to establish a better looking smile. All of these interventions, including the use of systemic antimicrobial agents, could and should be subject to risk assessment and critical review.

How does one control and decrease the use of antibiotics? This question does not come to mind if life-threatening infections are involved. However, most infectious diseases that are treated with antibiotics do not kill. The drug supports the patient in overcoming the disease, decreases the time of illness, prevents the diseases from becoming chronic and minimizes the odds of recurrence. A major proportion of antibiotic use is related to urinary tract infections, which are usually not lethal without drug prescription. If periodontitis is causally related to non-oral diseases such as cardiovascular diseases or pre-term birth and if periodontitis is affecting metabolic control of diabetes mellitus then definitive treatment of periodontal infections becomes all the more important. Treatment of periodontal infections and maintenance of a natural dentition, however, is a worthy objective on its own.

Can periodontitis effectively be combated with adjunctive antibiotics? Yes, selected cases will certainly clinically benefit from drug-supported intervention. It can also decrease the amount of periodontal surgery (Loesche et al. 1992, Winkel et al. 2001), eliminate certain key pathogens in family units and therefore may contribute to prevention of disease. In periodontics, we can contribute to avoiding the problem of overuse/misuse of potent antibiotics by prescribing these drugs in a responsible way. In some European countries patients are given antibiotics while waiting for their first appointment i.e. before any proper diagnosis and/or periodontal treatment has been rendered. Antibiotics in periodontics should not be used as a replacement of mechanical treatment, nor should they irrationally be prescribed to combat pain or to overcome the fear of the clinician for complications or in cases where the clinician does not know what else to do. If we start there, we may get somewhere.

It would be great if future clinical trials would involve pharmacopidemiology and it would be heaven if people in both research areas would combine forces. Only then we can answer the question what the risks of antibiotic use