A systematic review of the effect of anti-infective therapy in the treatment of peri-implantitis
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Authors' objectives
To assess the treatment of peri-implantitis with an emphasis on the role of anti-infective therapy.

Searching
MEDLINE (up to January 2002) was searched; the search terms were reported. No language restrictions were imposed. Five dental journals were handsearched to December 2001. The references of all retrieved articles and review articles were also checked. The editors of four journals were contacted for submitted papers awaiting publication.

Study selection
Study designs of evaluations included in the review
The authors did not specify any inclusion criteria relating to the study design. However, the human studies had to have a minimum of 12 months' follow-up. No randomised controlled trials were identified. The human studies included in the review were controlled clinical trials and case series.

Specific interventions included in the review
Studies evaluating the treatment of peri-implantitis were eligible for inclusion. The treatments in the human trials included scaling, systemic antibiotics, tetracycline fibres, chlorhexidine, bone augmentation, bone grafting, and decontamination with laser, abrasive powder or air-flow.

Participants included in the review
The review included both human and animal trials. Human studies were included if they provided a clinical diagnosis of peri-implantitis, and had a minimum of five participants.

Outcomes assessed in the review
The outcome measures assessed in the human studies included in the review were: change in microbiota of the peri-implant pocket; resolution of inflammation; change in probing depth; change in probing attachment levels; change in crestal bone levels and/or repair of defects; and complications. The studies had to have a minimum of 12 months' follow up.

How were decisions on the relevance of primary studies made?
Two reviewers independently assessed titles and abstracts. If an article was selected by only one reviewer, the full article was ordered for assessment by both reviewers.

Assessment of study quality
The authors did not state that they assessed validity.

Data extraction
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction.

Methods of synthesis
How were the studies combined?
There was no attempt to combine the results of the studies, either statistically or in a narrative.
How were differences between studies investigated?
Summary details were tabulated.

**Results of the review**
Six human studies (n=108) were included in the review: 2 controlled clinical trials and 4 case series.

One clinical controlled trial reported improved peri-implant probing depth, probing bone levels and mobility-Periotest in patients receiving the combination of scaling, systematic antibiotics, chlorhexidine, and autogeneous bone graft or autogeneous bone graft with non-resorbable membrane, compared with controls. The other controlled trial reported less relapse in the test group receiving a combination of scaling, chlorhexidine, flap surgery and curettage, and laser decontamination than in the controls.

One case series reported an improvement in probing depth in the test group treated with tetracycline fibres, compared with controls.

A second case series reported a decrease of bone deficit and an increase in attachment level in the test group treated with implant surface decontamination with abrasive powder and autogeneous bone graft, compared with controls.

A third case series reported a significant reduction of pocket depths and anaerobic flora in the test group treated with a combination of polishing, scaling, irrigation with chlorhexidine, and a systemic antibiotic, compared with controls.

The final case series reported no positive results in the test group treated with a combination of flap surgery and curettage, implant surface decontamination with air-flow, ePTFE membrane and systemic antibiotics, compared with controls.

No statistical analyses were presented.

**Authors’ conclusions**
Several anti-infective treatment strategies have shown beneficial effects in humans, but there is insufficient evidence to support a specific treatment protocol. No evidence exists on the significance of anti-infective treatment on the longevity of the implant.

**CRD commentary**
The authors searched only one database, although they attempted to minimise publication bias by handsearching journals and identifying unpublished data. Two reviewers independently assessed potentially relevant articles, thus minimising selection bias. The authors did not state how validity was assessed, or how the data were extracted; therefore, it was not possible to fully assess the methodological rigour of this review, or to rule out bias. Although the authors were correct to rule out the use of a meta-analysis, they made no attempt to combine the results in a narrative and only the summary results were tabulated. Summary details of 41 studies were given, but only 21 were stated to have been included in the analysis. The use of unexplained abbreviations made the results difficult to interpret. With only six small studies carried out on humans, the applicability of these results to clinical practice and the conclusions drawn from them are likely to be limited.

**Implications of the review for practice and research**
Practice: The authors did not state any implications for practice.

Research: The authors state that randomised controlled trials on the treatment of peri-implantitis are needed.

**Bibliographic details**
Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.