

The adjunctive use of systematic antibiotics with Emdogain (Biora AB Malmö, Sweden) enamel matrix protein does not enhance clinical attachment level

In patients having intra-bony periodontal defects treated with enamel matrix proteins, does the use of postsurgical systemic antibiotics improve outcome?

Sculean A, Blaes A, Arweiler N, Reich E, Donos N, Brex M. *The effect of post-surgical antibiotics on the healing of intra-bony defects following treatment with enamel matrix proteins.* *Periodontol 2001; 72:190–195*

Design Randomised, controlled, blinded, clinical investigation on 34 patients with deep intra-bony defects (≥ 6 mm at baseline).

Intervention All the patients were randomly treated either with Emdogain (EMD) plus antibiotics (experimental group) or with EMD alone (control group) following full thickness flap procedure. The antibiotic regimen consisted of a combination of 375 mg amoxicillin TID and 250 mg metronidazole TID for 7 days.

Outcome measures At baseline (1 week prior to the EMD application) and at 1 year, the probing depth (PD) and clinical attachment level (CAL) were recorded by the same calibrated and blinded investigator.

Results Both EMD alone and EMD plus antibiotics resulted in significant reduction of the CAL and PD of ~ 4.6 and ~ 3.4 mm, respectively, and the differences between the groups were not significantly different.

Conclusion The adjunctive systemic administration of antibiotics as an adjunct to the use of EMD for the surgical treatment of intra-bony periodontal defects does not produce statistically superior PD reduction and CAL gain, when compared to treatment with EMD alone.

Commentary

Emdogain is a product containing a cocktail of enamel matrix proteins. Its use can result in greater clinical improvements than access flap surgery alone in periodontal infrabony defects, although with substantial variability in results.¹ Antibiotics are not routinely recommended as an adjunct to conventional periodontal surgery, so it is curious that several previous trials with Emdogain have given them to patients. The explanation probably relates to the use of antibiotics by some people as an adjunct to another periodontal regenerative approach, guided tissue regeneration (GTR). The logic might be summarised thus: (i) GTR uses barrier membranes; (ii) barrier membranes often become exposed to the mouth; and (iii) systemic antibiotics might prevent or treat bacterial colonisation of the barriers and so favour improved results. It turns out that no consistent benefits have been shown for GTR despite this line of argument.

This study was not able to show that systemic antibiotics improved the clinical results following Emdogain surgery. This does not prove equivalence, especially since the compact size of the trial did not permit small differences to be shown to be statistically significant. The use of mean values could have obscured differences, and the presentation of proportions of patients with “winning” and “losing” sites might have helped to better understand the clinical outcomes. It was however helpful to report adverse events and these included diarrhoea in five patients treated with antibiotics.

Despite some reservations, this carefully conducted study should be considered as the best available evidence. No advantage to systemic antibiotics has been demonstrated, which is reassuring since their rationale as an adjunct to this type of surgery is obscure.

Practice point

- No advantage in using systematic antibiotics as adjunct with this type of surgery has been demonstrated.

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