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DENTAL TRAUMATOLOGY

Letter to the Editor

Dear Sir,

I wish to comment on the article 'Pulp revascularization of replanted immature dog teeth after treatment with minocycline and doxycycline assessed by laser Dopler flowmetry, radiography, and histology' by Ritter et al., that appeared in your journal (2004, 20:75–84).

Reading the article thoroughly, I was surprised to see that the authors did not refer to the article 'Effect of minocycline on healing of replanted dog teeth after extended dry time' by Bryson et al. (*Dental Traumatology* 2003, 19:90–95). The conclusion of that article was that there is no significant effect of the drug, and the use of minocycline is not recommended. In another paper that was published in *Dental Traumatology* 2003, 'The effect of topical minocycline on replacement resorption of replanted monkey's teeth', by KM Ma, V Sae-Lim (*Dental Traumatology* 2003, 19:96–102), the conclusion also was that minocycline was not effective in controlling replacement resorption.

A search of the medical literature revealed a number of investigations showing that minocycline is actually an inhibiting factor in angiogenesis. Here are a few examples:

1 The tetracycline analogs minocycline and doxycycline inhibit angiogenesis *in vitro* by a non-metalloproteinase-dependant mechanism. EA Powers et al., Cancer Chemotherapy and Pharmacology, 1995, 36(5):418–424.

2 Angiogenesis inhibition by minocycline. RJ Tamargo, RA Bok, H Brem, Cancer Research, 1991, 15:51(2):672–675.

I suggest that these facts should encourage further research into this interesting question.

Sincerely,

Ruth Miller
Resident in Pediatric Dentistry,
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Response

Thank you for your interest in our paper.

We feel that the papers cited in the above letter are similar to our study only in that a common drug (minocycline) was used.

The aim of our paper was to enhance revascularization by the use of a long acting antibacterial agent minocycline. We did not claim nor do we feel that the drug did anything else other than keep the root surface and therefore the necrotic space free of bacterial contamination. Because of the fact that the necrotic pulp stayed free of bacteria it could act as a scaffold for the tissue that revascularized the pulp space.

The papers of Bryson et al., KM Ma and V Sae Lim were designed to test the anti-resorptive properties of this same medicament as minocycline has reported anti-resorptive as well as anti-bacterial properties. These studies were designed to promote osseous replacement by keeping the teeth dry for 60 min before replantation. The results indicated that the reported anti-resorptive properties of minocycline did not decrease the level of osseous replacement. As these studies had different aims and different properties of minocycline were tested we did not feel the need to reference them in our revascularization study.

I thank Dr Miller for her references about minocycline and angiogenesis. As the use of minocycline was successful in 'promoting' revascularization in our study we did not feel the need to search out references contrary to these findings. If on the contrary the use of minocycline did not enhance revascularization we would have researched papers such as these which would have explained our negative results.

Sincerely,

Alessandra L. S. Ritter
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