1385 Detection of Treponema, Enterococcus, Streptococcus, and Candida species in Root Canal Infections in Southern Chinese

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Objectives: There are only a few studies on the microbial composition of endodontic infections using molecular methods. Data in the South East Asia region is especially lacking. Therefore, the aim of this study was to determine the presence of Treponema, Enterococcus, Streptococcus and Candida species in root canal infections, before and after application of intra-radicular medicaments.

Methods: Samples were collected from 30 patients at two separate visits; one sample was collected right after pulp extirpation with minimal instrumentation and the other one collected after medicaments had been placed in root canals for one week. DNA was extracted from the samples using commercial kits (QIAamp DNA kit; Qiagen, Hilden, Germany). Species-specific PCR primers were designed, according to the 16S rRNA, for Treponema denticola, Enterococcus faecalis, Streptococcus milleri group. The primers for Candida albicans is specific for C. albicans 70kDa-heat shock protein gene, which is not only highly conserved, but can also be distinguished from other Candida species.

Results: T. dentocola was isolated from 18 samples in the first visit (60%). Streptococcus milleri group was isolated in 15 samples (50%), 10 of which were isolated together with T. dentocola. C. albicans was isolated in one sample only (3%) and E. faecalis was isolated from three samples (10%). In the second visit, T. denticola were isolated from eight samples (26.7%), whereas the S. milleri group and E. faecalis were isolated from six and two samples (20% and 6.7%), respectively. No C. albicans was isolated in the second visit.

Conclusion: The present study demonstrated that there was a difference in the composition of endodontic micro-organisms in Southern Chinese, e.g the low prevalence of E. faecalis, compared with other studies. Further studies using larger sample size are warranted to explain this. (Supported by the CRCG, the University of Hong Kong)

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