

Long-term follow-up of single turned Bra°nemark™ implants after 16–22 years: Microbiological findings

Presenter: Dierens M

University of Ghent, Ghent, Belgium

Co-authors: Dierens M¹, Vandeweghe S^{1,2}, Cosyn J¹, Kisch J³, Persson R⁴, De Bruyn H^{1,2}

¹University of Ghent, Ghent, Belgium, ²Malmö University, Malmö,

Sweden, ³Centre of Dental Specialist Care, Malmö, Sweden,

⁴University of Berne, Bern, Switzerland

Background: Research on long-term outcome of single dental implants is scarce. Microbiological data around single implants have been described after short-term follow-up only.

Aim: The primary objective of this study was to evaluate the microbiota around single turned Bra°nemark™ implants after 16–22 years of follow-up. Secondary objectives were to compare the microbiota around teeth and implants and to correlate microbiological findings and clinical parameters.

Methods: Fifty patients with 59 single implants were invited after a mean follow-up of 18.4 years (range 16–22). Paper point samples were retrieved from the deepest implant pocket (I, n¼59), the deepest pocket of the contralateral tooth (C, n¼48), and of the deepest pocket on natural teeth in each quadrant (P, n¼50). Checkerboard DNA-DNA hybridization was performed evaluating 40 species as well as the total DNA count. Bacterial counts were standardized according to the number of paper points used. Overall differences between implants, contralaterals and the pooled samples were analyzed using the Friedman test. Comparison between implants and contralateral teeth was made by means of the Wilcoxon Signed Ranks test. Correlations between microbiological and clinical parameters were performed using the Spearman correlation coefficient.

Results: The species with the highest mean bacterial counts around implants were *C. showae* (1.07 _ 2.32). Significant differences in bacterial counts between an implant and the contralateral tooth were found for *P. micra* (P¼0.049), *P. gingivalis* (P¼0.025), *P. intermedia* (P¼0.006), *T. forsythia* (P¼0.014) and *T. denticola* (P¼0.003). The mean counts of these species were higher around implants than around teeth. Spearman correlations of the total bacterial counts were weak but significant for mean interproximal probing depth around the implant (r¼0.352; P¼0.006) and mean interproximal bleeding index (r¼0.381; P¼0.003). The species with the highest correlation coefficients for mean interproximal probing depth were *S. haemolyticus* (r¼0.405), *S. anginosus* (r¼0.421) and *S. mitis* (r¼0.401).

Conclusions and clinical implications: Periodontal pathogens are present in higher numbers around implants after 16–22 years of function than around contralateral teeth. This, however, is not correlated to the clinical measurements of probing depth, bleeding index, plaque index or marginal bone level. The overall count of bacteria seems to be weakly correlated to mean interproximal probing depth and bleeding indices.

Dierens et al COIR 2011-22:934