JCP digest
Issue number 91 (2021:7)

EFP 30 years (1991-2021) promoting periodontal health for a better life
European Federation of Periodontology

Summarised from *Journal of Clinical Periodontology*, Volume 48, issue 7 (July 2021), 996-1006

Editors: Phoebus Madianos & Andreas Stavropoulos, EFP scientific affairs committee

Rapporteurs:
Lory Abrahamian, María Bonnín Liñares, Camilo Torres, Amr Khorshed, Ada Lapedra Bosch, Cristina Vallés and Andrés Pascual, with José Nart

Affiliation:
Postgraduate programme in periodontology, International University of Catalonia (UIC), Barcelona, Spain

study

How does systemic antibiotic therapy affect the outcome of non-surgical peri-implantitis treatment?

Authors:
Yvonne C. M. De Waal, Tine E. Vangsted, Arie Jan Van Winkelhoff

Background

Peri-implantitis is an inflammatory condition affecting the peri-implant tissues, which is caused mainly by bacteria. While different treatment approaches (non-surgical and surgical) have been proposed, the success of the final treatment remains an issue.

As a general treatment guide, non-surgical therapy should always precede surgery. Several authors suggest that the use of adjunctive systemic antimicrobials provides an additional benefit, even though he evidence in support of this treatment strategy remains unclear.

Aims

To evaluate the effect of adjunctive systemic amoxicillin (AMX) plus metronidazole (MTZ) on full-mouth non-surgical peri-implantitis treatment.

Materials & methods

This randomised clinical trial enrolled 62 subjects, diagnosed with peri-implantitis and assigned to be treated with non-surgical therapy.

- All patients received full-mouth mechanical cleansing of implants and teeth by experienced dental hygienists in one to five sessions. Implants were supra- and submucosally cleaned using an air polisher with a subgingival tip and ultrasonic instruments. Teeth were supra- and subgingivally cleaned using ultrasonic instruments and hand instruments. Individualised oral-hygiene instructions were provided.
- The patients were randomly assigned to one of two groups:
  - Test group – peri-implant non-surgical therapy with 0.12% chlorhexidine (CHX) + 0.05% cetylpyridinium chloride (CPC) mouth rinse, twice daily during 30 seconds for two weeks + use of systemic AMX and MTZ (both in doses of 500 mg, three times daily for seven days).
  - Control group – peri-implant non-surgical therapy with 0.12% CHX + 0.05% CPC mouth rinse, twice daily during 30 seconds for two weeks.
- The primary outcome measurement of the study was change in peri-implant full-mouth bleeding score.
- Secondary outcomes were changes in peri-implant and periodontal full-mouth plaque scores, suppuration scores, mean probing pocket depths, mean (relative) clinical attachment levels, and mean peri-implant bone levels.
- Follow-up was at three months, assessing changes in primary and secondary outcomes from baseline.

Table: Mean change in probing pocket depth between baseline and three-month follow-up for initially shallow, moderate, and deep peri-implant and periodontal pockets.

		MEAN POCKET DEPTH REDUCTION		
N = 57	Basetine pocket depth	Control group (*n* = 29)	Test group (*n* = 28)	*p* = value
Peri-implant pockets	≤3mm	-0.10 (0.86)	0.37 (0.80)	.099
		[3 (2)]; *n* = 17	[4 (3)]: *n* = 19	
	4-6mm	1.07 (1.00)	1.29 (0.86)	.407
		[7 (4)]; *n* = 26	[8 (8)]; *n* = 26	
	≥7mm	2.42 (1.23)	3.19 (1.53)	.054
		[5 (4)]; *n* = 25	[4 (3)]: *n* = 26	
Periodontal pockets	≤3mm	0.36 (0.32)	0.47 (0.23)	.135
		[94 (32)]; *n* = 29	[92 (30)]: *n* = 28	
	4-6mm	1.24 (0.52)	1.33 (0.45)	.513
		[40 (20)]; *n* = 29	[37 (15)]; *n* = 28	
	≥7mm	2.78 (1.37)	3.75 (1.23)	.025[a]
		[6 (8)]; *n* = 19	[5 (7)]; *n* = 20	

[a]Significant difference between test and control groups (Independent-Samples *T* test); [..] = mean number of pockets (SD); *n* = number of patients.

Results

- A total of 62 patients with 143 implants with peri-implantitis were allocated in this study: 32 patients in the control group (68 implants) and 30 patients in the test group (75 implants). A total of 57 patients with 122 implants completed the three-month follow-up.
- For clinical peri-implant and periodontal parameters at the baseline examination, no differences were observed between the two groups.
- At the three-month follow-up, no significant differences between the groups were found regarding the clinical data. Nevertheless, a tendency for some benefit from systemic antimicrobials could be seen when deep peri-implant pockets had been initially present.
- Regarding the microbiological analysis, even though a reduction of the mean counts of bacteria was observed from baseline to three-month follow-up, no significant differences were found, either for implants or teeth.
- No differences were found between the groups in terms of patient-related outcomes/adverse effects.
- Related to the need for peri-implant surgery after the last examination, 20 patients (11 in the control group and nine in the test group) were scheduled for surgical intervention, including the explantation of an implant in the cases of two patients. Eight patients were scheduled for retreatment using the non-surgical approach to improve oral hygiene and compliance.

Limitations

- The short follow-up period – a longer follow-up period might give different results between the groups.
- No other limitations affecting the validity of the conclusions could be identified.

Conclusions & impact

- The adjunctive use of systemic antibiotics does not present an additional effect to non-surgical peri-implantitis treatment at three months of follow-up in terms of clinical and microbiological parameters.
- The routine prescription of antibiotic therapy for the treatment of peri-implantitis is not recommended.
- A meticulous non-surgical therapy with patient motivation should always precede any surgical intervention to treat peri-implantitis.

JCP Digest issue number 91, published in September 2021, is a summary of the article 'Systemic antibiotic therapy as an adjunct to non-surgical peri-implantitis treatment: A single-blind RCT.' *J Clin Periodontol.* 2021; 48 (7): 996-1006. DOI: 10.1111/jcpe13464

https://www.onlinelibrary.wiley.com/doi/10.1111/jcpe.13464

Access through EFP members' page log-in: http://efp.org/members/jcp.php