

COMPARATIVE STUDY OF MICROBIAL FLORA AND IMMUNE SYSTEM OF PATIENTS WITH IMPLANTS SCREWED CROWNS VERSUS CEMENTED CROWNS



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INTRODUCTION

Periodontitis comprises a complex ecological system involving a host, some microorganisms and a specific environment. As the periodontitis, the periimplantitis is a chronic inflammatory disease characterized by loss of tooth support or affected implants. This disease starts from the fibers of the periodontal ligament and develop to the alveolar bone. Although plaque microorganisms are involved in the progression of the disease, know the host reaction to the action of these agents is fundamental for a better understanding of their own multifactorial nature of those inflammatory processes [1,2].

OBJECTIVES

Analyze and understand the microbial flora and immune system response of rehabilitated patients with implants screwed crowns and cemented crowns

Evaluate how these two types of crowns can influence the peri-implant flora, including detecting the presence of opportunistic microorganisms that are responsible for triggering periimplantites.

MATERIAL AND METHODS

51 patients were evaluated at the Dental Clinic of ISCSEM and at Dental Clinic of Dr. Ana Paula Amorim in Lisbon. The individuals of both genders were carriers of implant-supported prosthesis. Each patient was examined by a licensed physician, filled out a survey and signed an informed consent. The results were analyzed using SPSS.

- After a clinical evaluation, samples were collected from peri-implant sulcus as deep as possible, and the cones were introduced in transport medium (Viable Microorganisms Anaerobic: VMGA-III).
- The protocol used is described in the Figure 1.

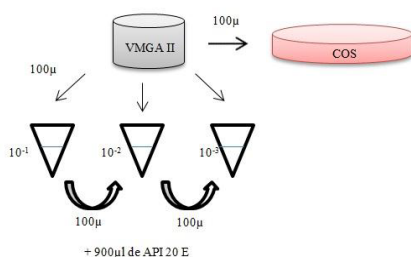


Figure 1 – Diluted samples plates from VGMA-III

- Serial 10 fold were made from the transport medium VGMA-III. The diluted samples were plated in Columbia Blood Agar (COS) and subcultured in appropriated selected mediums: Drigalsky (DRIG), Manitol Salt Agar (MSA), Colistin Nalidixic Acid blood Agar (CAN) and Sabouraud (SAB) as in figure 2.
- The isolated were identified until species level by the biochemical methods (API-System®)

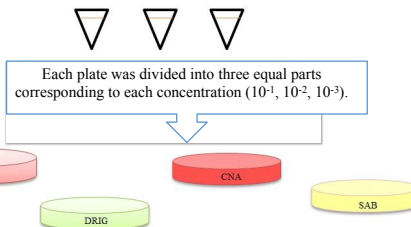


Figure 2 – 3 diluted samples plated in selected mediums

RESULTS

SAMPLE CHARACTERISTICS :

- The group of patients studied was divided in 2: Screwed prosthesis (Group A) aged 42 to 80 years and Cemented prosthesis (Group C) aged 32 to 76. In both groups the age average was 58. 38% men and 65,2% woman (Group A), and 53% men and 48% woman (Group C) aged between 32 and 80 years.

TYPES OF PROSTHESIS :

Most individuals, in both groups (A and C), had metaloceramic prosthesis (80% in C group and 69% in A group)[Table 1].

Table 1 - Distribution of the different types of prosthesis material - Group A and Group C

	Metaloceramic	Metallic	Zirconium	Metalloacrylic	Acrylic	
Group C	80%	4%	16%	0%	0%	100%
Group A	69%	0%	13%	9%	9%	100%

SPECIES:

Different species were identified in each group as we can see at table 2.

Table 2 - Distribution of the different species identified - Group A and Group C

Group A	Group C
<i>Pseudomonas aeruginosa</i> - 5,9%	<i>Aeromonas hydrophilia/sobria</i> – 2,0%
<i>Citrobacter braakii</i> - 3,9%	<i>Enterobacter cloacae</i> – 2,0%
<i>Enterobacter cloacae</i> - 3,9%	<i>Streptococcus oralis</i> - 2,0%
<i>Lactococcus lactis cremoris</i> - 3,9%	
<i>Streptococcus mitis</i> - 2,0%	
<i>Streptococcus salivarius</i> - 2,0%	
<i>Klebsiella pneumoniae pneumoniae</i> - 2,0%	
<i>Serratia odorifera</i> - 2,0%	
<i>Streptococcus bovis I</i> - 2,0%	
<i>Klebsiella oxytoca</i> - 2,0%	

CONCLUSION

Despite the prosthesis screwed presented several kinds of potential pathogenic microorganisms, the type of prosthesis does not influence the colonization by those microorganisms

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[1] Albrektsson, T., Zarb, G., Worthington, P., & Eriksson, A. R. (1986). The long-term efficacy of currently used dental implants: a review and proposed criteria of success. Int J Oral Maxillofac Implants, 1(1), 11-25. [2] Berná, G., Okamura, M., & Muñoz, C. A. (2003). The effects of abutment taper, length and cement type on resistance to dislodgement of cement-retained, implant-supported restorations. J Prosthodont, 12(2), 111-115. doi: 10.1016/S1059-941X(03)00006-8