

ORAL FUNGAL MICROFLORA ASSOCIATED WITH IMPLANT-SUPPORTED VS. MUCOUS-SUPPORTED DENTURES



Bruno Neto¹, Joana Carvalho², Madalena Oom³ and Sérgio Felix³

1. DDS, monitor of Oral Rehabilitation, Integrated Master's Degree in Dentistry ISCSEM, Quinta da Granja, Monte de Caparica - Portugal
2. DDS, assistant of Oral Rehabilitation, Integrated Master's Degree in Dentistry ISCSEM, Quinta da Granja, Monte de Caparica - Portugal
3. PhD Prof. Health Sciences Institute, CiiEM ISCSEM, Quinta da Granja, Monte de Caparica - Portugal.

INTRODUCTION

Nowadays, the total implant-supported prosthesis is assumed as the gold standard for the total edentulous. Yet, not knowing the type of fungal flora may difficult the application of a therapeutic solution in case of fungal infection [1]. Prostheses are a microbiological reservoir, creating an additional surface for plaque adhesion which triggers a negative response from the individual's mucosa [2]. *Candida albicans* is known as the most prevalent fungus in the oral cavity [3] and many studies report infections by this microorganism [4]. Therefore, it is important to study its prevalence in this new prosthetic rehabilitation and compare it with the traditional total acrylic prosthesis, which is the most common type of prosthetic rehabilitation.

GOALS

Compare the prevalence of yeast present in total implant-supported (TISP) and total mucous-support prosthesis (TMSP).

MATERIALS AND METHODS

30 patients rehabilitated with total implant-supported dentures, chosen by convenience were observed. Samples were collected in the area adjacent to the prostheses with a sterile swab and in the periimplantar sulcus of greater depth with a sterile paper cone, which were immediately analysed for the presence of yeast. The yeasts were isolated and identified in Brilliance™ *Candida* agar.

Comparison of yeast colonization

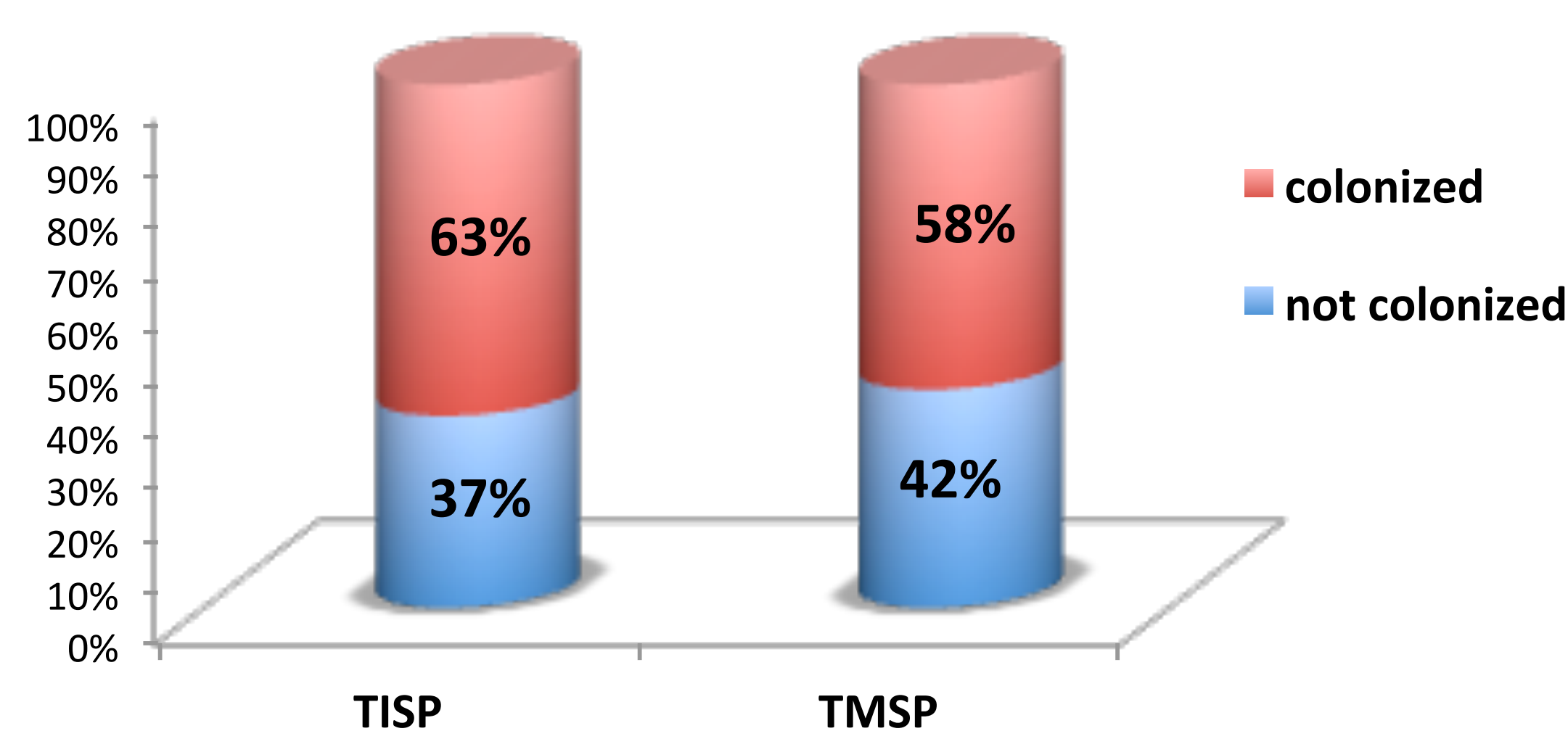


Chart.1 – Comparison of yeast colonization in TISP and TMSP

Comparison of *Candida* species

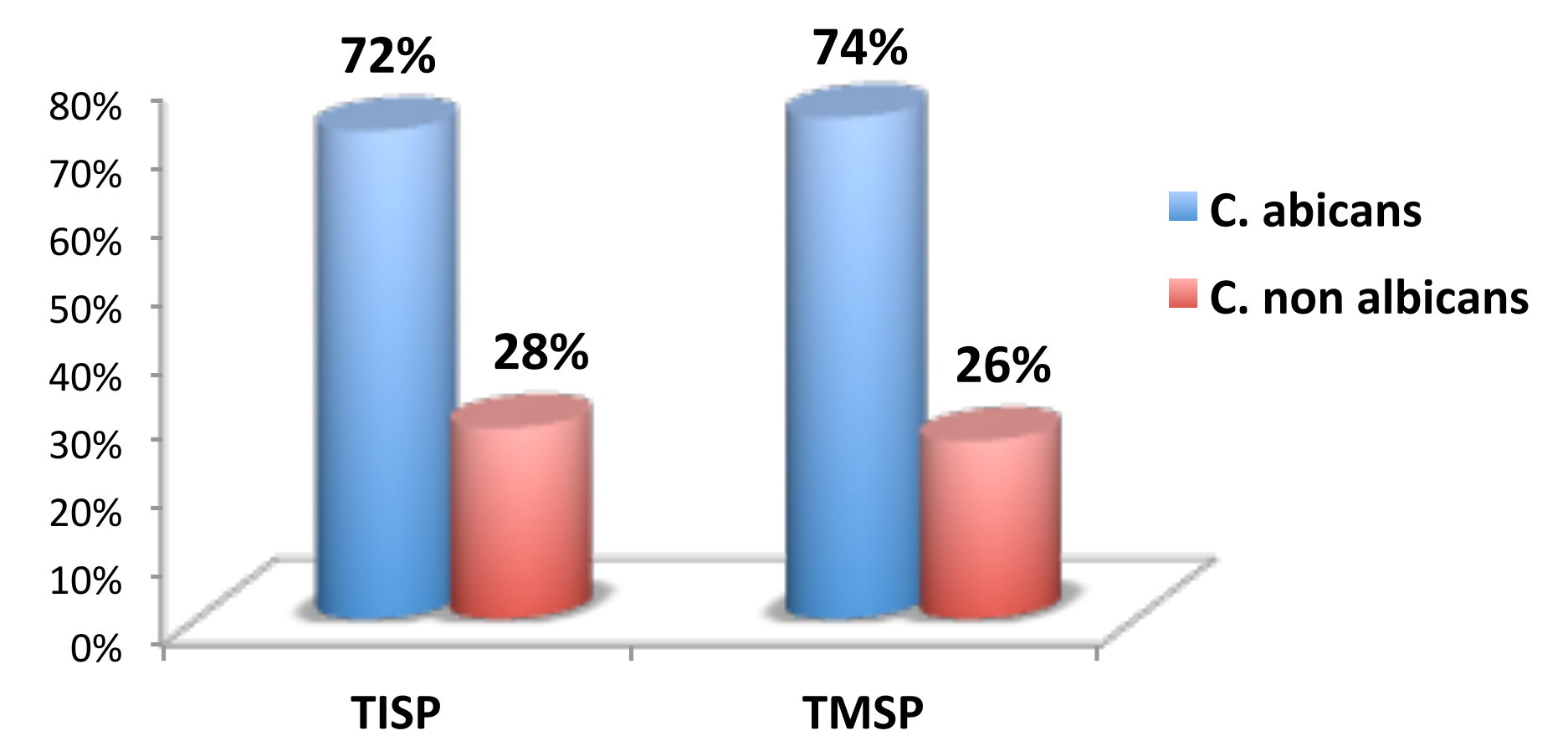


Figure 2 – Comparison of *Candida* species between TISP and TMSP

Comparison of non-*C. albicans* colonization

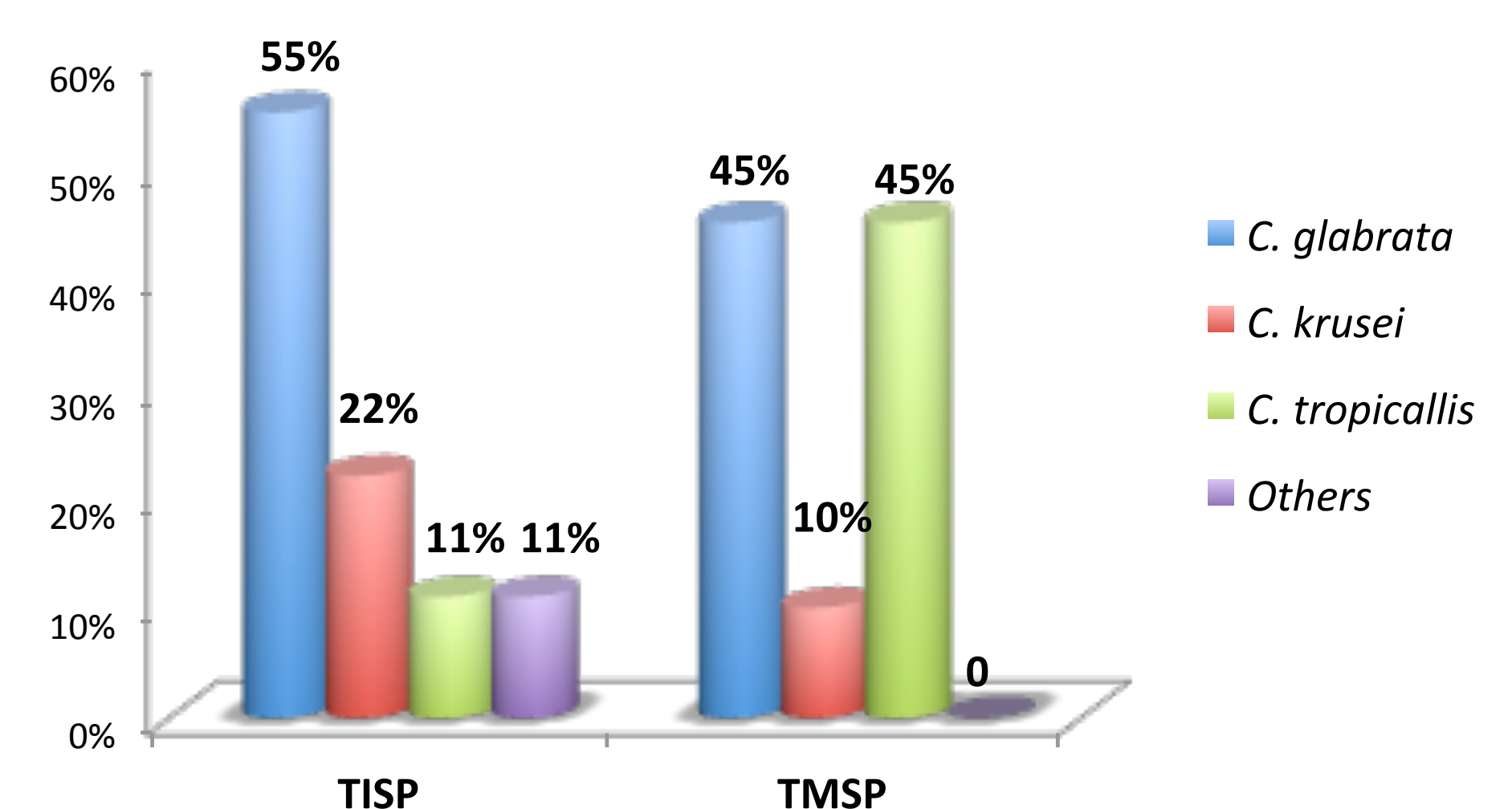


Figure 3 – Comparison of non-*C. albicans* between TISP and TMSP

RESULTS AND DISCUSSION

A TISD group of 30 subjects, comprising 31% men and 69% women with an average age of 64.8 ± 11 years, was compared with a group of 60 subjects wearing total mucous-supported dentures comprising 35 % men and 65% women with an average age of 65.3 ± 11 years. The relative colonization of both types of prostheses (mucous and implant) were evaluated by the chi-square test.

No significant differences were found ($p > 0.05$) in the colonization of TISD (63% of the subjects colonized) and TMSD (58%) (figure 1). Equally, no differences were detected when the simultaneous colonization by one, two, or more different yeast were compared. *C. albicans* was the most prevalent species detected in 72% of the TISD and 74% of the TMSD (figure 2), leading to the conclusion that the mode of prosthetic support is not a risk factor for colonization with this species. Within the non-*C. albicans* species we found in TISD *C. glabrata* (55%), *C. krusei* (22%), *C. tropicalis* (11%) and other 3 species (11%) while in the TMSD, only 3 species were found *C. glabrata* (45%), *C. tropicalis* (45%) and *C. krusei* (10%) (figure 3). Apparently, the implant-support dentures are prone to colonization by more species of *Candida*.

CONCLUSION

The type of prosthesis does not seem to influence the colonization by yeast

REFERENCES

- [1] Hyland, R., Ellis, J., Thomason, M., El-Feky, A., & Moynihan, P. (2009). A qualitative study on patient perspectives of how conventional and implant-supported dentures affect eating. *Journal of Dentistry*, 37(1), e116–e121
- [2] Real-Osuna, J., Almedros-Marques, N. and Gay-Escoda, C. (2012). Prevalence of complications after the oral rehabilitation with implant-supported hybrid prostheses. *Medicina Oral Patología Oral Y Cirugía Bucal*, 17(1), e116–e121
- [3] McManus, B. and Coleman, D. C. (2014). Molecular epidemiology, phylogeny and evolution of *Candida albicans*. *Infection, Genetics and Evolution*: *Journal of Molecular Epidemiology and Evolutionary Genetics in Infectious Diseases*, 21, 166
- [4] Manfredi et al. (2013). Urban legends series: oral candidosis. *Oral Diseases*, 19(3), 245–61.