

Support for the role of *Candida* spp. in extensive caries lesions of children

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SUMMARY

Candida spp. are frequently detected in the mouths of children with extensive caries lesions compared with caries-free subjects. In this study we evaluated the presence of *Candida* spp. in association with mutans streptococci and lactobacilli in the saliva of children with dental decay, before and after anti-caries treatment.

Samples of saliva from 14 children with caries lesions and from 13 caries-free subjects were evaluated for the presence of mutans streptococci, lactobacilli and *Candida* spp. by culture. Eleven of 14 carious subjects hosted *Candida* spp. in their saliva as against only 2 out of 13 subjects without caries lesions. Carious subjects were treated by adopting a conventional protocol for caries disease (rinses with a mouthwash containing 0.2% chlorhexidine and fluoride). After treatment, the salivary bacterial counts decreased for mutans streptococci and in some cases for lactobacilli, but large numbers of *Candida* spp. remained in the saliva of several children. The latter were treated with the antifungal drug nystatin (oral rinses) and evaluation of the level of yeasts in the saliva showed disappearance of the microorganism in several cases. The results indicate that antiseptic treatment alone for dental decay is not sufficient for the eradication of microorganisms potentially responsible for caries lesions, in particular when yeasts are present. We hypothesize that the oral cavity of children could act as a reservoir of fungi, and eradication could be needed to prevent both exacerbation of caries lesions, and colonization by *Candida* spp. of other host sites.

KEY WORDS: Oral microbiology, *Candida* spp., Dental caries, Feeding-bottle syndrome

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INTRODUCTION

Although mutans streptococci and lactobacilli are considered the main aetiological agents of human dental caries, fungal oral microflora has been found to be involved by numerous studies of dental decay, however its actual role as a risk factor has yet to be completely clarified. A certain body of clinical and microbiological evidence has sug-

gested a correlation between high prevalence of yeast *Candida* spp. in dental plaque and saliva and the development of active carious lesions (Russel *et al.*, 1991; Sedgley *et al.*, 1997; Jacob *et al.*, 1998; Marchant *et al.*, 2001; Moalic *et al.*, 2001; Nikawa *et al.*, 2003; Ersin *et al.*, 2006; Galbiatti de Carvalho *et al.*, 2006).

Yeasts are microorganisms normally present in the oral cavity of healthy individuals, and according to several studies, the percentage of *Candida* spp. colonization ranges from 20% to 40% of healthy individuals (Odds, 1998) and become predominant flora in more than 60% of immunocompromised subjects (Moore *et al.*, 1993). *Candida* spp. are able to colonize several surfaces of the oral cavity including the tongue, palate, cheek and hard surfaces of teeth so much as to be

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