

Prevalence of *Candida Albicans* in Pediatric Patients' Dental Biofilm

Castillo-Gastelum Mayra, Arias-Chávez Alan, Hernández-Solis Sandra, Rueda-Gordillo Florencio, Chuc-Gamboa Martha
Universidad Autónoma de Yucatán

BACKGROUND

Biofilm is a consortium of microorganisms adhered to a substrate conformed by salival proteins on dental surface.

C. albicans is an oportunist pathogen associated with dental caries due to: its acidogenic properties, ability to form biofilm, carbohdydrate fermentation and production of enzymes that degrade collagen.

PURPOSE

Determine the prevalence of *C. albicans* in dental biofilm samples collected from 165 pediatric patients with and without caries that attended Universidad Autónoma de Yucatán.

METHODS

1. Sample recollection

Recollected with sterilized swab from first primary molars' biofilm from healthy children (1-5 years) that haven't received antibiotic/fungal therapy within last 3 months.

2. Sample cultivation

All samples were cultivated in SDA plates (37° C for 24 h)
Selected colonies were cultivated in CHROMagar Candida for *C. albicans* presumptive identification.

3. Species confirmation

Determined by polymerase chain reaction technique (PCR). ADN extraction was by heat and freeze tecnique and oligonucleotide from gene 25SrRNA was used for Candida species confirmation.

RESULTS

Children	With caries No. (%)	Without caries No. (%)	Total
Male	51 (30.90)	27 (16.35)	78 (47.27)
Female	59 (35.75)	28 (16.96)	87 (52.72)
Total	110 (66.6)	55 (33.33)	165 (100)

Candida species distribution	With caries No. (%)	Without caries No. (%)	Total
<i>C. albicans</i>	42 (38.18)	6 (10.90)	48 (29.09)
<i>C. tropicalis</i>	6 (5.45)	2 (3.63)	8 (4.84)
<i>C. glabrata</i>	1 (0.90)	2 (3.63)	3 (1.81)
<i>C. krusei</i>	1 (0.90)	-	1 (.60)
<i>C. parapsilosis</i>	1 (0.90)	-	1 (.60)
Total	51 (46.36)	10 (18.18)	61 (36.96)

The association between *C. albicans* and caries was analyzed by chi-squared test ($P=.001$) and odds ratio ($OR=5.04$).

DISCUSSION

C. albicans is the most prevalent species of candida reported in different studies. It has been reported a prevalence of 30 – 56 % in samples obtained from children between 4-6 years old.

C. albicans promotes the demineralization process and interacts with other microorganisms, such as *Streptococcus mutans*. It has been reported a prevalence of 62.3% of *C. albicans* in caries lesions from children between 3-6 years old, and clinical studies have shown an association of *C. albicans* with ECC, reporting that children colonized with *C. albicans* have a greater risk of developing ECC.

CONCLUSIONS

An association between *C. albicans* and caries was observed, where the presence of *C. albicans* increases 5 times the probability of developing caries.

REFERENCES

1. Fakhruddin KS, Perera Samaranayake L, Egusa H, Ngo HC, Pesee S. Profuse diversity and acidogenicity of the Candida-biome of deep carious lesions of Severe Early Childhood Caries (S-ECC). J Oral Microbiol. 2021;13(1):1–2.
2. Lomelí-Buyoli G, Mejía-González AM, Rodríguez-González K. Resultados del Sistema de Vigilancia Epidemiológica de Patologías Bucles SIVEPAB 2020. 2020;01–70.
3. Nydia A., Castillo M, Rosa R., José M. LA, Martin. Factores relacionados a candidiasis oral en niños y