Molecular Identification of *Candida albicans* Genotypes in Dental Biofilms of Children with Early Childhood Caries Attending the Dental Teaching Hospital, Peradeniya, Sri Lanka

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Early Childhood Caries (ECC), or tooth decay, is a major health problem in Sri Lanka. Recent studies have revealed that *Candida albicans*, an opportunistic fungal pathogen in humans, plays a key role in caries progression. Further, *C. albicans* has multiple genotypes (A, B, and C) and its cariogenicity and antifungal susceptibility are found to vary depending on the genotype. Thus, identifying genotypes associated with ECC is crucial for effective disease control. However, this remains unexplored in Sri Lanka. Therefore, this study aimed to identify genotypes of *C. albicans* associated with children with ECC in Sri Lanka. Dental biofilm samples were collected from 19 children with ECC attending the Dental Teaching Hospital, Peradeniya and cultured on CHROMagar medium for presumptive identification of the fungus based on its characteristic green-coloured colonies. Five colonies were randomly selected from each of the positive samples. Following subculturing and DNA extraction, PCR was performed for confirmation of the species by targeting its pH-regulated *KER1* gene. Genotyping was performed using PCR targeting a group I intron within its 25S rDNA, which yielded a 450 bp amplicon for genotype A, 840 bp amplicon for genotype B, and both amplicons for genotype C. The results were further validated by sequencing the PCR amplicons. Out of the 19 subjects, 10 tested positive for *C. albicans*. Each *C. albicans*-positive child harboured only a single genotype, with genotype A being the most frequently observed genotype (70%), followed by genotype C (20%) and genotype B (10%). This data is consistent with studies conducted in other countries reporting that genotype A is predominant among children with ECC. In conclusion, this study provides the first insight into the genotypic diversity of *C. albicans* among Sri Lankan children with ECC. Further investigations with larger sample sizes are warranted to determine the prevalence of these genotypes.

Keywords: 25S rDNA, dental caries, ECC, group I intron

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