OP 033

Molecular identification of *Candida dubliniensis* in patients with type 2 diabetes for the first time in Sri Lanka

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Introduction & Objectives:

Candida dubliniensis is an emerging medically relevant pathogenic yeast which is primarily associated with oral infections in patients with human immunodeficiency virus and diabetes mellitus. *C. dubliniensis* shares many phenotypic similarities with *C. albicans* that leads to misidentification. The study aimed to evaluate the efficacy of a duplex PCR in differentiating *C. albicans* from *C. dubliniensis*.

Methods:

Hundred diabetes patients who were positive for oral *Candida* were included in this study. *C. dubliniensis* and *C. albicans* type strains were used to optimize the duplex PCR. Concentrated oral rinse specimens were applied to both duplex PCR and phenotypic identification tests including CHROMagar Candida, germ tube test, sugar assimilation and chlamydospore formation. Molecular identifications were confirmed by sequencing.

Results:

Out of 100 *Candida* positive patients, 49 had colony counts >2000 CFU/ml and were at risk of *Candida* infection. *C. albicans* was the predominant pathogen. Three patients were positive for *C. dubliniensis* by duplex PCR and had Candida colony counts of >3000 CFU/ml. They had a history of diabetes for >15 years. Out of these three patients who carried *C. dubliniensis*, one patient had *C. dubliniensis* together with *C. albicans*. All three isolates gave a positive result for germ tube test and gave green colour colonies on CHROMagar Candida medium. One out of three failed to assimilate xylose and trehalose. Sequencing results gave a >95% identity when subjected to BLAST search. Duplex PCR yielded a sensitivity of 20 Candida cells/ml of oral rinse sample.

Conclusion:

Duplex PCR was found to be an effective tool in accurate differentiation of *C. albicans* from *C. dubliniensis* compared to the phenotypic tests.