

***In vitro* evaluation of virulent factors of *Candida albicans* and its association with selected host factors in oral leukoplakia**

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Candida albicans is an endogenous commensal found in the mouth and it may alter its state from the harmless to a pathogenic fungi due alteration of the oral environment which favours its growth. Various virulent factors and host factors contribute to the colonization and the pathogenicity of candida. This study aimed to evaluate selected virulent factors of *C. albicans* to correlate them with host factors in patients with oral leukoplakia.

A total of 37 *C. albicans* isolates recovered from oral leukoplakia lesions were analyzed in the study. Esterase, phospholipase, proteinase and haemolysin activity were determined using Tween-80 opacity test medium, egg yolk agar, bovine serum albumin agar and SDA-supplemented with human blood, respectively. Biofilm formations of the *C. albicans* strains were also investigated.

Of the 37 candida isolates, phospholipase activity was seen in 29 (78.38 %) and proteinase activity was seen in 24 (64.86%) while haemolytic and esterase activities were noted in all isolates with 33 (89.19%) and 4 (10.81%) isolates showing strong and moderate haemolytic activities, respectively. Biofilm formation was demonstrated in 28 (75.68%) isolates. Enzymatic activities and biofilm formation were observed among smokers, alcoholics and betel chewers. Among phospholipase positive isolates, 22 (75.86%) were from smokers; 20 (68.97%) were from alcoholics and 24 (82.76%) were from betel chewers. Among the proteinase positive isolates, 18 (48.64%) were from smokers; 17 (45.9%) were from alcoholics and 20 (54.05%) were from betel chewers. Of the isolates given positive haemolysin and esterase activities, 29 (78.38%) were from smokers; 25 (67.57%) were from alcoholics and 32 (86.49%) were from betel chewers. Of the isolates with positive biofilm formation, 23 (82.14%) were from smokers; 20 (71.43%) were from alcoholics and 25 (89.29%) were from betel chewers. There was no significant association ($p>0.05$) noted between expression of selected virulent factors of *C. albicans* and the risk factors tested for oral leukoplakia in the current study. Expression of hydrolytic enzymes and biofilm formation were seen among the pathogenic strains of *C. albicans*. However, no significant association was found in the expression of virulent factors with the risk factors tested.

Keywords: *Candida albicans*, virulent factors, host factors, oral leukoplakia.