CORRELATION BETWEEN PHOSPHOLIPASE ACTIVITY, PRESENCE OF GENES PLB1 / PBL2 AND SUSCEPTIBILITY TO FLUCONAOZOLE OF Candida albicans

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ABSTRACT

Phospholipase constitute one of the main factors related to the process of fungal virulence, especially in yeasts of the genus Candida. C. albicans, most frequently isolated species in infectious processes caused by yeast, has four types of known phospholipases (A, B, C and D). However, only the products of PLB1 and PLB2 genes will allow the detection in the extracellular level. Currently, the enhanced expression of these genes has been correlated with the most virulent isolates and low sensitivity to antifungal agents, especially to azole agents. Thus, aiming to determine the presence of PLB1 and PLB2 genes in yeasts of C. albicans, this study used Polymerase Chain Reaction (PCR) technique and the results were compared to the activity of phospholipase and susceptibility to fluconazole. Fourteen C. albicans strains isolated from 94 samples of vaginal swabs of women in labor admitted to the emergency of the Maternity Hospital Januário Cicco (Federal University of Rio Grande do Norte, Natal - RN) were subjected to DNA extraction and amplified PLB1 and PLB2 genes. Phospholipase activity was determined by inducing medium containing egg yolk and its fluconazole susceptibility was determined using broth microdilution. Investigated genes were amplified in all isolates; however, three of them (21.4%) showed no phospholipase activity, revealing an inactivation of PLB1 and PLB2 genes. It was possible to establish a sensitivity rate to fluconazole of 92.9% (13/14), with only one isolate with intermediate sensitivity, which showed a high level of phospholipase activity. Thus, there are indications of a possible correlation between virulence factors, such as the phospholipase and decreased sensitivity to antifungal agents. However, it is necessary further studies and a larger sample size.

Keywords: Candida albicans, phospholipase, fluconazole.

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