The *Paracoccidioides lutzii* EXO-ANTIGENS APPLIED TO IMMUNODIAGNOSIS OF PARACOCCIDIOIDOMYCOSIS IN CENTRAL WEST REGION OF BRAZIL

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ABSTRACT:
Paracoccidioidomycosis (PCM) caused by *Paracoccidioides spp*, is an important endemic mycosis in Latin America. Two species are described to genus, *P. brasiliensis* and *P. lutzii*, which have been associated with immunodiagnostic implications. *P. lutzii*, a single monophyletic specie, presents in central, southwest, and north Brazil and Ecuador. While, *P. brasiliensis* too monophyletic, is widely distributed in South America and comprises distinct lineages named as S1, PS2, PS3, and PS4. Recently, was described a deep split of S1 into two clades (S1a and S1b). In central-west region of Brazil, where *P. lutzii* predominates, has been described low reactivity in immunological tests using *Paracoccidioides* standard antigen (AgB-339). The discovery of the *P. lutzii* species and the understanding of the complexity of the genus *Paracoccidioides* reveal the need to search for new PCM serum markers. Here, we aimed to evaluate the performance of exo-antigens from *P. lutzii* against patient sera from Brazilian central-west region (CWR), and to speculate their influence under PCM immunological diagnose, as well sorological follow-up of these patients. The cell-free culture antigens, known as exo-antigens, were obtained from *P. lutzii* (ATCC MYA-826), defined as PlAg, and proved by double agar-gel immunodiffusion (DID) test against 27 PCM suspect serum samples from CWR. The PCM confirmation was given in 37% of cases (10/27) by direct exam, biopsy specimens or culture. In samples with clinical PCM compatible, but without fungus identification (63%), serological tests were positive in most (14/17), being 10 and 4 reactive samples using Ag-339 and Pl-Ag, respectively. Herein, 90% (9/10) of PCM confirmed samples was negative when tested with AgB-339. Although the literature suggests high specificity and sensitivity to DID test (65 to 100%), we able to find only 10% (1/10) of reactivity using *Paracoccidioides* standard antigen. In the other hand, this percent increased to 70% (7/10), when we added PlAg on assay, highlighting its role to immunodiagnose. In addition, the requirement to identify new antigens in both species, as well antigens specific for *P. lutzii*, and to apply the combined use of these antigens, is pivotal to PCM monitoring and sorological follow-up in areas where both species occur. Finally, molecular identification of the clinical isolates are under progress, what will help us to clarify the PCM reactivity profile at Brazilian central-west region.

Keywords: systemic mycoses, serology, antigen preparations, immunodiagnosis, PCM.

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