TITLE: DETECTION OF IgG TO *Paracoccidioides brasiliensis* AND *P. lutzii* IN SERA FROM THE POPULATION OF GUARAPUAVA, PR, BRAZIL.

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ABSTRACT:

Paracoccidioidomycosis (PCM) is a systemic mycosis caused by *Paracoccidioides* spp. The disease is considered endemic in South America, but the geographical distribution of *P. lutzii* seems to be restricted to the Central-West region of Brazil, while *P. brasiliensis* of three different clades occurs in the rest of the continent. The south of Brazil, where Paraná is located, has high rates of PCM disease. Current research aimed to analyze sera from inhabitants of an inland city of Paraná, Guarapuava, in order to evaluate the endemicity of the region. Serum was obtained randomly from 377 individuals who were seeking medical attention for any reason at clinical laboratories of the city. Indirect ELISA was performed: plates were coated with 25 µg/mL of cell free antigen (CFA) from *P. brasiliensis* B339 and *P. lutzii* LDR2 and IgG was detected (Sigma A-6029). In order to oxidize carbohydrates that may cause unspecific reactions, the positive sera were tested in a new ELISA with treatment of the CFA with 10 mM sodium metaperiodate. As a confirmatory test, these sera were further tested to detect IgG anti-gp43 from *P. brasiliensis* B339. Ninety-five (25.2%) sera were considered positive for CFA, of which 63 and 16 reacted solely with *P. brasiliensis* or *P. lutzii*, respectively. After the treatment with sodium metaperiodate, 55 (14.6%) sera remained positive (one for both strains, 51 and 5 for *P. brasiliensis* and *P. lutzii*, respectively). Seventeen of these sera (4.5% of all samples) were positive to gp43. The positivity rate with CFAs is in accordance to other published data using total antigens. The reaction with *P. lutzii* is probably due to antigens in common with *P. brasiliensis.* As expected, the elimination of possible non-specific reactions decreased the positivity rate. Gp43 is the accepted antigen to confirm PCM diagnosis in this region of Brazil, which is supposedly endemic for *P. brasiliensis*. This test had low positivity and is in accordance with the low rate of PCM disease in the city (unpublished data). Although Guarapuava has its economy mostly based on agriculture and timber industry, possibly causing exposure of more people to the fungus, the final rates were low. The moderate/subtropical climate of the region may hamper the growth of the fungus. PCM infection can be used as an indicator for health related projects, raising awareness among health professionals to be watchful about PCM.

Keywords: Epidemiology; Paracoccidioidomycosis infection; Serodiagnosis; Systemic mycosis.

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