

**TITLE:** EFFICIENCY OF WESTERN BLOT IN THE DIAGNOSIS OF HISTOPLASMOSIS IN HIV-PATIENTS FROM A NATIONAL INSTITUTE OF INFECTIOUS DISEASES IN RIO DE JANEIRO/BRAZIL

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**ABSTRACT:**

Histoplasmosis is a worldwide-distributed systemic disease. In HIV patients, histoplasmosis is one of the most frequent fungal opportunistic systemic infection. Among this population, the disease is responsible for high rates of morbidity and mortality, and it is mostly fatal without an early diagnosis and treatment. The gold standard diagnosis is based on isolation of the fungus in culture. However, in its absence, serology has been used as a presumptive diagnosis through antibody and antigen detection. Previous studies from our group demonstrated that the western blot immunoassay (WB) has an important role in the diagnosis of histoplasmosis. Here, we evaluated, retrospectively, the efficiency of WB in the diagnosis of HIV-patients with histoplasmosis from the Evandro Chagas National Institute of Infectious Diseases (INI), Fiocruz, during 2000 to 2015. The patients were identified by review of Mycology Laboratory registers. Laboratorial tests was performed in serum samples stored at 20°C at the same laboratory. In addition, clinical and epidemiological data were described in the same population by review of medical records. Among the 50 HIV patients with diagnosis of proven and probable histoplasmosis, 82% were man, and the mean age was 39.3 years. Histoplasmosis was the first opportunistic infection in 38% of cases. Lymphocyte T CD4+ < 150 cels/mm<sup>3</sup> level was observed in 62% patients. Disseminated histoplasmosis (DH) occurred in 84% patients, and pulmonary histoplasmosis (PH) in 16% of individuals. The overall mortality occurred in 16% of patients. The sensitivity of WB was 90%. Single antibody against M antigen was found in 62% of patients, and antibody against both M and H antigen in 28% of individuals; 10% of patients presented WB negative. WB was positive in all individuals with PH (*n*=7), and in 88% of patients with DH (*n*=38). Individuals (*n*=5) that had negative WB. The mean T CD4+ lymphocyte count in individuals (*n*=5) with a negative WB result was smaller than in patients with a positive WB (45.4 vs. 161.1 cels/mm<sup>3</sup>, respectively; *p* = 0.001). Despite this, the mean viral load was similar in both individuals with negative and positive WB (257,517/mm<sup>3</sup> vs. 230,801/mm<sup>3</sup>, respectively; *p* = 0.886). In conclusion, this study demonstrated that WB could be a useful laboratory tool for the diagnosis of histoplasmosis in HIV-patients with severe immunosuppression since the assay showed a good sensitivity for antibody detection in this specific population.

**Keywords:** histoplasmosis diagnosis, HIV-patients, western blot, antibody detection

**Development Agency:** CNPq, FAPERJ and INCT-HPI