

**Simple species diagnosis of human intestinal microsporidia in stools by an immunofluorescence test using specific monoclonal antibodies: an evaluation study in two hospitals in France.**

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**ABSTRACT**

Differentiation between the two intestinal microsporidia *Encephalitozoon intestinalis* and *Enterocytozoon bieneusi* is required for an adequate therapy management. To date, the species diagnosis is performed using electronic microscopy or PCR. We produced two monoclonal antibodies (MAb) of IgG type, directed against the spore wall of each species. A retrospective study carried out on 78 positive stool samples (64 *E. bieneusi*, 6 *E. intestinalis* and 8 mixed-infections), showed that these MAb's reacted strongly and specifically with the mature spores in stool samples using Immunofluorescence antibody test (IFA). Two prospective studies were then performed in HIV positive patients in Bordeaux (n = 143), and in Paris (n = 562). Stool samples were assayed by two different optical microscopy methods in each centre (the IFA-MAbs was associated with the Weber's modified trichrome blue in Bordeaux and with the van Gool Uvitex 2B in Paris). Positive or doubtful samples were subsequently controlled in PCR using species specific primers. Unspecific staining techniques corrected by PCR were used as the standard reference. Prevalence of *E. bieneusi* in HIV infected patients was identical in Bordeaux and in Paris, respectively 7 and 7,1 per 1000. No cases of *E. intestinalis* infection were diagnosed in Paris or in Bordeaux. The IFA-MAbs *E. bieneusi* was perfectly correlated with the standard reference in both centres, (100% for sensitivity, specificity and predictive values). For the unspecific techniques, the results of positive predictive value were 57% with Weber's modified trichrome blue and only 9% with van Gool Uvitex 2B. The IFA-MAbs technique is sensitive and convenient for the species routine diagnosis of human intestinal microsporidiosis. Both MAbs are now commercially available (Bordier Affinity products, CH-1023 Crissier, Switzerland).

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