

## Current Complications of the Diagnosis of Intestinal Amebiasis

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Defining the etiology of infectious diarrhea is an algorithm that can be complicated. While only the species *E. histolytica* was known, this was the causal agent of all cases suspected of amebiasis in the world. In the light of the knowledge of 1997, when a morphologically identical but not pathogenic species, called *E. dispar*, was described in a forum of experts in amebiasis, everything changed. From that moment the WHO proposed the use of specific techniques that allow to distinguish between both species, on suspicion of an amebiasis. This institution considers as true producer of amoebiasis, solely and exclusively to *E. histolytica*.

The main problem is that the routine method for the diagnosis of enteroparasites in many parts of the world is the microscopic examination of the fecal sample. In these circumstances, it is practically impossible to distinguish between *E. histolytica* and *E. dispar*, except in the presence of hematophagous trophozoites, which is almost exclusive of *E. histolytica*. More recently, the existence in humans of a third amoeba, indistinguishable from the aforementioned and apparently non-pathogenic (such as *E. dispar*), has been described. This new amoeba has been named *E. moshkovskii* (former Laredo strain of *E. histolytica*) and has been identified by several authors mainly in children. Situation that far from clarifying the possibilities of diagnosis, complicates it even more. As if this were not enough, in 2012 was described the presence of a fourth amoeba called *E. bangladeshí*, of which to date, has only been reported its presence in Dhaka, Bangladesh.

Of course, the microscopic diagnosis is totally ineffective to discriminate between these amoebas and therefore when this is the method used in the laboratory, the presence of trophozoites or cysts should be referred to as *Entamoeba* complex, to indicate that we may be in the presence of some of the four species and we do not know which is actually present. The gold technique that makes the precise and definitive diagnosis of ameba present is the polymerase chain reaction (PCR) in any of its variants, from separates PCR, through nested PCR and until real-time PCR, since this way you can distinguish between the four species of the complex.

Therefore, in the case of a patient with diarrheal disease and suspected amoebiasis, a microscopic examination is not enough, since it does not allow identification of the pathogenic amoeba, *E. histolytica*. The exclusive use of microscopy for the diagnosis of amoebiasis lends itself to an over diagnosis of *E. histolytica*. Since the presence of any of the non-pathogenic amoebae (*E. dispar* or *E. moshkovskii*) resembles morphologically this parasite and in conjunction with the clinic that could be presented by the patient (diarrhea, colic, abdominal pain) by any other etiology, may be confused with a *E. histolytica* case, with consequent mistaken treatment.

In these cases, by demonstrating trophozoites or cysts compatible with *E. histolytica*, other laboratory procedures such as PCR, ELISA or some other discriminatory technique should be performed to detect the true causative agent. The problem lies in the availability of molecular biology tools in poor or third world countries, that have neither the infrastructure nor the budget to carry them out [1-6].

In conclusion, we should not continue to use the same microscopic procedure for the diagnosis of amoebiasis, in the knowledge that this technique is incapable of identifying its real causal agent, *E. histolytica* and, if it continues to be used, complementary discriminatory techniques should be used.

## Bibliography

1. Diamond LS, *et al.* "A redescription of *Entamoeba histolytica* Schaudinn, 1903 (Emended Walder, 1911) separating it from *Entamoeba dispar* Brumpt, 1925". *Journal of Eukaryotic Microbiology* 40.3 (1993): 340-344.
2. World Health Organization. "Amoebiasis". *Weekly Epidemiological Record* 72.14 (1997): 97-100.
3. Clark CG, *et al.* "The Laredo strain and other "Entamoeba histolytica-like" amoebae are *Entamoeba moshkovskii*". *Molecular and Biochemical Parasitology* 46.1 (1991): 11-18.
4. Haque R, *et al.* "A case Report of *Entamoeba moshkovskii* infection in a Bangladesh Child". *Parasitology International* 47 (1998): 201-202.
5. Sard B, *et al.* "Amebas intestinales no patógenas; una visión clínico analítica". *Enfermedades Infecciosas y Microbiología Clínica* 29. 3 (2011): 20-28.
6. Royer T, *et al.* "*Entamoeba* Bangladeshi nov.sp., Bangladeshi". *Emerging Infectious Disease* 18. 9 (2012): 1543-1545.

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