

Molecular diagnosis of *Entamoeba* spp. versus microscopy in the Great Cairo

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Abstract

Amoebiasis is a human disease produced by *Entamoeba histolytica* which causes widespread mortality and morbidity worldwide through diarrheal disease and abscess establishment in parenchymal tissues such as liver, lung, and brain. The true prevalence of infection is unknown for most areas of the world due to the difficulty to characterise *Entamoeba histolytica* versus other non-pathogenic amoebas with identical morphology, as *Entamoeba dispar*, and *Entamoeba moshkovskii*. To overcome microscopy misidentification issues, we tested a nested multiplex polymerase chain reaction (PCR) and a real-time PCR on 194 stool samples collected from incoming dysentery patients in Cairo hospitals diagnosed with *E. histolytica* by microscopy. Nested PCR showed only 20 (10.3%) samples positive to *E. histolytica* and 17 (8.7%) to *E. dispar*. The real-time PCR detected only 19 and 11 samples positive to *E. histolytica* and *E. dispar* respectively, showing less sensitivity than the nested PCR. The data show that prevalence of *E. histolytica* in Cairo is lower when specific diagnosis methods are used instead of traditional microscopy, allowing to differentiate between morphologically identical human amoebas species.

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