

DIAGNOSIS OF INTESTINAL PARASITIC INFECTIONS USING FLUORESCENCE MICROSCOPY

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Intestinal parasites are a real public health problem in developing countries. They are generally responsible for many symptoms among which malabsorption, anemia, abdominal pain. Diagnostic methods based on microscopic identification of parasites remain common in developing countries, despite their low sensitivity. Recently, new fluorescent microscopes with light emitting diodes have improved the diagnosis of other protozoan parasites such as malaria using a DNA-specific dye DAPI (4',6-diamidino-2-phenylindole. This study was designed to compare a rapid fluorescence microscopy - based method for diagnosis of intestinal parasites to classical microscopy and to collect epidemiological data in rural and urban settings to Cameroon. From september 2009 to march 2010, 583 stool samples from outclinic patients were analyzed, including 300 in the city of Douala and 283 in the rural area of Njombe. Each sample was submitted to direct microscopic examination and formalin-ether concentration technique. The observation under fluorescence and white light was made using a fluorescence microscope CyScope® (Partec GmbH, Görlitz, Germany). Stool samples had less visible artifacts under fluorescence and helminth eggs were very clearly observed. In opposite, protozoa were better distinguished using white light. The search for parasites was positive in 155 (26.6%) of the 583 patients in the study. The prevalence in Njombe was significantly higher than Douala (39.2% against 14.7%, $P < 0.001$). The most common prevalent species in Douala was *Entamoeba histolytica* (10.3%), while in Njombe, *Schistosoma mansoni* dominated 13.1%. This work has confirmed a high prevalence of intestinal parasites in a rural area of Cameroon and has also shown that the simultaneous use of white and fluorescence lights for stool exams could help to better observe parasites. Thus, the use of fluorescence microscopy for routine diagnosis of intestinal parasites deserves further investigation.

KEY WORDS: diagnosis, intestinal parasites, fluorescence microscopy, CyScope®, DAPI