

R490

Publication Only

Travel medicine, Tropical Diseases and Parasitology: Travel medicine, tropical and parasitic diseases

Multiple intestinal parasitic infections among school students in Malakal area, Upper Nile state, Sudan

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Objectives: To estimate prevalence and distribution of intestinal parasites among school students in Malakal Area, Upper Nile State in Sudan.

Methods: Sensitivity of routine direct wet mount and formalin-ethyl acetate concentration methods were compared by examination of stool samples collected from randomly selected 450 school students aging from 7 to 22 years. The study took place during the period from August-November 2010.

Results: Overall prevalence of the intestinal parasitic infection in this study was 16.2% using direct wet mount and 18.6% using formalin-ethyl concentration method. Both examination methods showed that *Giardia intestinalis* was the most predominant parasite followed by *Hymenolepis nana*, *Entamoeba coli*, *E. histolytica* / *E. dispar*, *Ascaris lumbricoides*, *Schistosoma mansoni* and *Trichuris trichiura*. Moreover, double or multiple infection appeared in some cases as protozoa-protozoa or protozoa-helminthes. Infections in males and basic level school children showed higher prevalence than females and those of secondary level. The study demonstrates that formalin-ethyl acetate concentration method is more sensitive than direct wet mount method.

Comparison between number of protozoic and helminthic infections estimated by direct wet mount or formalin-ethyl acetate concentration method was very high statistically significant by Chi<sup>2</sup> test ( $p$  was 0.00001).

Conclusions: *Giardia intestinalis* and *Hymenolepis nana* are the most predominant parasites in the study and formalin-ethyl acetate concentration method will be recommended for diagnosis of parasites.