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PARASITIC INFECTIONS IN PRIMARY AND SECONDARY SCHOOLS IN GIZA GOVERNORATE, EGYPT

By

SOAD I. HASSAN

Theodor Bilharz Research Institute, Imbaba, Giza, Egypt.

ABSTRACT

Four primary and two secondary schools at Kafr Hakeem, El-Mansuria and Berkash villages in Imbaba district were surveyed. Urine and stool specimens of 791 students were examined. Results revealed amoebiasis (22.4%); hymenolepiasis *nana* (6.2%); ancylostomiasis *doudenale* (5.7%); ascariasis (1.5%) and enterobiasis (1.1%). Parasites transmitted by autoinfection represented 15.9% of the total infected subjects; those transmitted by the skin penetration 27.2% and by contaminated food 56.9%. There was no statistical difference between primary and secondary school students as regards the rate of infection.

INTRODUCTION

The rate of infection with intestinal parasites is widely variable from one area to another even within the same country or city. Parasitic infection is still one of the main health problems specially among school students who are the group at risk. To present information on frequancy and current distribution of parasitic infection in Imbaba (Giza Governorate), this study was carried out on primary & secondary school students in the villages of Kafr-Hakeem, El-Mansuria and Berkash (Giza Governorate).

SUBJECTS AND METHODS

A total of 791 students from four primary and two seconadry schools in Kafr-Hakeem, El-Mansuria and Berkash villages were examined. The ages of the primary school students ranged between 9-12 years old while in the secondary schools, it was between 14-20 years old. Stool specimens were examined by merthiolate-iodine-formaldehyde concentration (M.I.F.C.) according to Blagg et al. (1955). Urine specimens were examined by centrifugation sedimentation method according to El-Shafei (1962). Statistical analysis was done by chi-square test and test for difference between two proportions according to Peterie (1978).

RESULTS

The results are shown in tables (1 & 2).

Table (1): Frequancy of parasitic infections among primary and secondary school students in Imbaba district, Giza Governorate.

Parasitic infection	Primary Schools		Secondary Schools		Total	
	No.	%	No.	%	No.	%
Schistosoma mansoni	20	4.8	27	7.2	47	5.90
Schistosoma haematobium	2	0.5	6	2	8	0.01
Entamoeba histolytica	88	21.3	89	23.6	177	22.40
Giardia lamblia	12	2.9	8	2.1	20	2.50
Hymenolepis nana	31	7.5	18	4.8	49	6.20
Entrobius vermicularis	7	1.7	2	0.5	9	1.10
Ascaris lumbricoides	4	1.0	8	2.1	12	1.50
Ancylostoma doudenale	22	5.3	23	6.1	45	5.70
Negative Subjects	288	69.6	196	51.9	424	53.6
Total Tested	414		377		791	

* No statistical difference in rate of parasitic infection between both groups.

Table (2): Mode of infection in primary and secondary schools in Giza G.

Mode of infection	Frequancy of infection		
	Primary Schools	Secondary Schools	Total
Contaminated food	28.3 %	28.6 %	56.9 %
Skin penetration	11.9 %	15.3 %	24.2 %
Autoinfection	10.4 %	5.5 %	1.9 %

DISCUSSION

The oral therapy of schistosomiasis with praziquantel and its high cure rate for both species of schistosomiasis together with the change in the ecological factor resulted in the decrease in frequancy of schistosomiasis. In this study, the rate of infection of *Schistosoma mansoni* was 5.9% and for *Schistosoma haematobium* was 0.1%. In Giza Governorate, Bebawy et al. (1982) found a frequancy of 43 % for *S. mansoni* and 7% for *S. haemastobium*. El-Sahly et al. (1989) reported that S. mansoni infection in school students in El-Shimbab and Kafr-Hegazy (Giza Governorate) was 8-15% and 25-71% for *S. haematobium*. As regards the intestinal protozoa, *Entamoeba histolytica* was the most prevalent parasitic infection among school students (22.4%). This finding could be attributed to the wide spread of amoebic infection in the Tropical and Subtropical regions. (Sanjiva, 1985). There was insignificant difference in amoebic infection between both primary and secondary school students. Tadros (1973) in Giza G., reported a prevalence rate of 2.6% for amoebiasis. El-Naggar et al. (1978) in Cairo, reported 15%. El-Shaly et al. (1989) in Giza, reported a rate of 24-25 % in school children 6-12 years old. Morsy et al. (1991 in Qualyobia Governorate, found 7.81% of the primary school students having *E. histolytica* infection. On the other hand, in this study infection with *Giardia lamblia* was less prevalent than *Entamoeba histolytica* (2.5%). Similar results (1.7%) had been reported by Tadors (1973). Mohamed et al. (1985) in Tahrir Province, reported lower rate (6.32%) of *G. lamblia* as compared to *E. histolytica*.

The present results showed that the prevalence rate of *Hymenolepis nana*

was 6%. This result is similar to that previously recorded by Mohamed et al. (1988) in Sharkia G. (5.8%) and Morsy et al. (1991) in Qualyobia Governorate (9.87%). In this study, the prevalence of *H. nana* exceeded that of enterobiasis. This result is in agreement with the results reported by Mohamed et al. (1988) in Sharkia. On the other hand, most of the previous studies showed that the prevalence of enterobiasis exceeded that of hymenolypiasis nana (El-Naggar et al., 1978 in Cairo, Morsy et al., 1982, in Ismailia G. and Mohamed et al., 19[illegible] in Tahrir Province). The prevalence rate of *E. vermicularis* infection in the study was 1%. Different rates of infection were reported by several authors. Tadros (1973) reported 6.6%; El-Naggar et al. (1978) reported 16.7%, Mohamed et al. (1985) reported 0.96%; Sabry (1991) in El Faiyum G. reported 27.4%. No doubt, these differences may be due to differences in methods of diagnosis, socio-economic levels or environmental differences (Morsy et al., 1991).

The prevalence rate of *Ascaris lumbricoides* was 1.5%. Tadros (1973) reported 6.6%; El-Naggar et al. (1978) reported 11.7%; Mohamed et al. (1985) reported 8.43%; Mohamed et al. (1988) reported 3.7%; and Morsy et al. (1991) reported 9.05%. The rate of *Ancylostoma doudenale* infection in the diffrent Egyptian localities ranged between zero & 5.3% (Tadros, 1973; Mohamed et al., 1985 & 1988; Salem et al., 1990; and Sabry, 1991). In this study, the rate was 5.3% in primary school students and 6.1% in the secondary school students but without significant difference.

It was concluded that annual examination of the school students and treatment of the positive cases is a must. This is particularly important with parasites transmitted by autoinfection.

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