

Prevalance of Intestinal Parasites in Children of the Orphanage in Sivas, Turkey

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Certain intestinal parasitoses may be observed more in kindergartens, boarding houses, hostels, schools and orphanages where children live together under poor sanitary conditions. Both the climatic conditions and the eating habits of the people affect the prevalence of intestinal parasites(1-10). Some differences in the rate of prevalence have also been observed because of different diagnostic methods and difficulties in identifying certain parasites(9,10). We studied the prevalence and distribution of intestinal parasitoses among children at routine examination of stool and scotch tape (ST) specimens.

Material and Methods

Of 122 children, living in the Sivas

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Orphanage, we obtained stool specimens and ST preparations in 116 children. The children were grouped according to age and sex. Informed consent was obtained in all cases and the adverse effects of intestinal parasites on health were emphasized. Later on, with the help of orphanage nurses, ST specimens from children were obtained by the investigators. ST specimens were then wrapped up in labelled papers. Containers for stool specimens were distributed to the orphanage administration and collected a day later.

While examining the stool specimens, a direct preparation in saline was prepared from each specimen and examined by 10% and 40% objectives. For differential diagnosis of protozoan cysts, either Lugol solution was added or the preparation was prepared in Lugol solution. ST preparations were examined either directly or by dropping 1-2 drops of xylol in between the ST and slide. All the stool specimens that could not be examined the same day were kept at the room temperature. The ST specimens were, however, kept at 4°C in a refrigerator.

Results

All the children were 6-14 years old. Of 116 children, 44 were girls and 72 boys. One or more parasites were determined in 109 (42 girls, 67 boys) (94%), out of 116 children whose ST and stool specimens had been examined.

Forty five (38.8%) children had one whereas 64 (55.2%) had more than one parasite. Findings obtained in the children's ST and stool specimens and distributions of parasites are shows in *Table I*.

TABLE I-Parasites in Stool and Scotch-Tape (ST) Specimens

Parasite	Female (n=44)	Male (n=72)	Total (n=116)
<i>Ascaris lumbricoides</i>	9 (7.8)	7 (6.0)	16(13.8)
<i>Trichuris trichura</i>	6 (5.1)	-	6(5.1)
<i>Enterobius vermicularis</i>	37(31.0)	57(49.1)	94(80.0)
<i>Hymenolepis nana</i>	6 (5.1)	11 (9.5)	17(14.6)
<i>Tenia saginata</i>	4 (3.1)	16(13.7)	20(17.2)
<i>Giardia intestinalis</i>	3 (2.6)	26(22.4)	29(25.0)
<i>Escherichia coli</i>	6 (5.1)	12(10.3)	18(15.5)
Others*	1 (0.9)	5 (4.3)	6 (5.2)

* Include *I. butschlii* and *C. mesnilli*.

Figures in parenthesis indicate percentage of total children.

Discussion

The prevalence of intestinal parasites in children in Turkey varies between 30-90% in stool examinations(3,5-8,10). Helminthiasis has been determined to be 60-70% in ST examination of the children of the same group(5-8,10). When both specimens were examined concurrently, the number of persons afflicted with parasitoses and those with one or more parasites increased. In this work, when we examined stool and ST specimens together, we determined a rather high rate (94%) of parasitosis.

In these orphanage children, parasitic infections originated from soil were less than that which related with personal hygiene and direct contact with the infected persons. The main reason for the high rate of *Enterobius vermicularis* (94%) among the children was the close contact between them. *Ascaris lumbricoides*, is another nematode frequently encountered in our region. However, it has not

been determined to be as prevalent as *E. vermicularis* in children. The reason for this is that the orphanage children are screened by us every year and given appropriate treatment by the doctor responsible. *Tenia saginata* had a high rate of 17.2% in children. Moving *Tenia* proglottids were occasionally observed on the hips of children while obtaining ST specimens. Another helminth infection which spreads with the person to person contact is *Hymenolepis nana*. This parasite was also encountered among the population at a rate of 14.6%, a rate that cannot be underestimated.

Of the protozoa, *Giardia intestinalis* is a most frequently encountered parasite in every age group and populations of different socio-economic levels. Considering that children with *G. intestinalis* can infect directly non-infected children, the rate of 25% is not exceedingly high. Similar findings were obtained in investigations made in Sivas earlier(7,8). In

view of the harmful effects of worm infection, we suggest that adequate measures be taken to prevent and treat these conditions.

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Wolman's Disease

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Wolman's disease is an extremely rare, fatal, autosomal recessive, lysosomal storage disease of cholesterol esters caused by deficiency of lysosomal lipase. About 50 cases have been

reported in literature of which three cases are from India(1). We report here a new case because of its rarity and certain unusual features.

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