

PRELIMINARY NOTE

INTESTINAL PARASITES IN A SAUDI CENTER FOR MENTALLY RETARDED CHILDREN

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Intestinal parasitic infections are common in mental institutions (Jeffrey, 1960; Yoeli *et al*, 1972). In Saudi Arabia, previous studies have revealed that higher prevalences, especially of giardiasis and amebiasis, exist among residents of closed institutions such as orphanages, child nurseries, rehabilitation centers and schools compared to urban or rural populations (Al-Madani *et al*, 1989; Omar *et al*, 1991 a, b).

In the course of epidemiological studies on the prevalence of intestinal parasites in various population groups in Asir Province of southwestern Saudi Arabia, the present survey was undertaken to obtain additional information on parasitic infections in this relatively unstudied geographical area. We therefore examined the stools for intestinal parasitism of residents in a center for disabled and mentally retarded children in the city of Abha (Asir).

The study center is a non-governmental charity organization that provides long-term care for mentally retarded persons in Asir region. The center housed in two buildings 103 patients, most of whom are severely or profoundly mentally retarded. There are 13 rooms in the two buildings and 7-8 children occupy each room. A staff of 67 professional and administrative employees are permanently engaged in training and maintenance of health care in the center.

Fresh fecal samples (one per patient) were collected from the patient population during October to December 1990. Stools were placed in a vial of merthiolate preservative solution and submitted to the University Parasitology Laboratory in Abha. Each specimen was examined by the qualitative Merthiolate-Iodine-Formaldehyde Concentration technique (MIFC) for the detection of fecal cysts

and ova as described previously (Omar *et al*, 1991a). Fecal samples were examined from 100 children (median age 7.4 years, range 2-17 years); 38 samples were obtained from males and 62 from females.

Of the 100 stool specimens examined, only 14 contained intestinal parasites. Single infections with the protozoan parasites, *Giardia lamblia*, *Entamoeba histolytica* or *E. coli* and one helminth, *Hymenolepis nana* and their distribution between male and female patients are shown in the Table 1. Although somewhat more females than males were infected, the difference was not significant ($X^2 = 0.019$, $p > 0.05$). There was no evidence of symptomatic diarrhea at the time of the study.

G. lamblia, which is probably endemic in Abha area (Al-Madani *et al*, 1989; Omar *et al*, 1991 a, b) accounted for 50% (7/14) of all infections. This was followed by the nonpathogenic parasite, *E. coli* (5/14 = 35.7%) which was recovered exclusively from female patients. A single infection with *E. histolytica* was found in the stool of a 4-year-old girl. Both patients with amebiasis and hymenolepsiasis subsequently developed symptoms 3 months after examination and were treated with metronidazole (Flagyl) and with niclosamide (Yomesan) respectively. Of the 7 asymptomatic children with *Giardia*, only one developed symptoms later. In view of this and the ease of person-to-person transmission, all individuals who were passing *Giardia* cysts were treated. Treatment of both giardiasis and amebiasis consisted of oral administration of metronidazole 40 mg/kg 3 times a day for 10 consecutive days. Examination of follow up stools after treatment of those positive for *G. lamblia*, *E. histolytica* or *H. nana* showed that there were no pathogenic parasites in two successive stools.

Table 1

Showing prevalence of intestinal parasites in a Saudi mental institution.

Patients	No.	No. of cases infected with				Total
		<i>G. lamblia</i> *	<i>E. coli</i>	<i>E. histolytica</i> *	<i>H. nana</i> *	
Male	38	5	0	0	0	5
Female	62	2	5	1	1	9
Total	100	7	5	1	1	14

* One patient developed symptoms (abdominal pain and/or diarrhea) after initial examination.

In this preliminary study, the overall prevalence of infection (14/100 = 14%) was considerably lower than that encountered in patient populations of similar institutions in the USA, Canada and elsewhere (Jeffrey *et al*, 1960; Yoeli *et al*, 1972; Sholten *et al*, 1977; Naiman *et al*, 1980; Thacker *et al*, 1981). These surveys have demonstrated infection rates ranging from just under 50% to over 85%. It is noteworthy that previous stool examination results have demonstrated a prevalence rate of 13.2% among apparently healthy urban populations in Abha (Al-Madani *et al*, 1989), a finding similar to the present prevalence ($X^2 = 0.054$, $p > 0.05$) but lies far below that reported earlier (30.3%) in local closed communities (Omar *et al*, 1991 b) ($X^2 = 9.64$, $p < 0.05$).

The factors which are likely responsible for this marked difference in prevalence must be sought in the uncrowded quarters, the high level of environmental sanitation in the study center along with an adequate supervision by a dedicated nursing and lay staff.

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REFERENCES

- Al-Madani AA, Omar MS, Abu-Zeid HA, Abdulla SA. Intestinal parasites in urban and rural communities of Abha, Saudi Arabia. *Ann Soc Med* 1989; 9 : 182-5.
- Jeffrey GM. A three-year epidemiologic study of intestinal parasites in a selected group of mental patients. *Am J Hyg*, 1960; 71 : 1-8.
- Naiman HL, Sekla L, Albritton WL. Giardiasis and other intestinal parasitic infections in a Manitoba residential school for the mentally retarded. *Can Med Assoc J* 1980; 122 : 185-8.
- Omar MS, Abu-Zeid HAH, Mahfouz AAR. Intestinal parasitic infections in schoolchildren of Abha (Asir), Saudi Arabia. *Acta Trop* 1991a; 48 : 195-202.
- Omar MS, Al-Awad ME, Al-Madani AA. Giardiasis and amoebiasis infections in three Saudi closed communities. *J Trop Med Hyg* 1991b; 94 : 57-60.
- Sholten T, Jang J, Palmer J. Parasitism in an Ontario mental institution: Preliminary report. *Can Med Assoc J* 1977; 116 : 1114-8.
- Thacker SB, Kimball AM, Wolfe M, Choi K., Gilmore L. Parasitic disease control in a residential facility for the mentally retarded. Failure of selected isolation procedures. *Am J Public Health* 1981; 71 : 303-5.
- Yoeli M, Most H, Hammond J, Scheinessan GP. Parasitic infections in a closed community: Results of a 10-year survey in Willowbrook State School. *Trans R Soc Trop Med Hyg* 1972; 66 : 764-76.