Original Article

A SURVEY ON INTESTINAL PARASITIC INFECTIONS IN PATIENTS REFERRED TO A HOSPITAL IN TEHRAN

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ABSTRACT

Objectives: To determine the prevalence of parasitic infections in people referred to Kashani Hospital Tehran during Summar season in 2005.

Methodology: Fecal samples were examined by direct examination, formalin-ether concentration and staining with Ziehl-Neelsen. To identify *Strongyloides stercoralis* samples were cultured on the nutrient agar medium.

Results: In a total of 205 cases examined 29.75% were found infected with at least one parasite. The rates was as follows: Blastocystis hominis 20.9%, Giardia lamblia 5.36%, Iodamoeba butschelii 0.48%, Dientamoeba fragilis 0.48%, Trichomonas hominis 0.48%, Endolimax nana 0.97%, Enterobius vermicularis 0.48% and Taenia 0.48%

Conclusion: Results included the significance of *Giardia* infection in children along with symptoms. 76.74% of patients with *Blastocystis* infection have presented with intestinal symptoms. More research is encouraged to identify the relationship of *B. hominis* and the symptoms.

KEY WORD: Intestinal parasite, Giardiasis.

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INTRODUCTION

Parasites are one of the important casual agents of gastrointestinal disorders such as diarrhea, loss of weight, abdominal pain, nausea, vomiting, lack of appetite, abdominal distention and also sometime mentally related disorders.[1] These infections are still a hygienic problem particularly in developing countries as well as tropical and sub tropical zones.[2]

Several factors such as poor hygienic environment, poor socioeconomic statues, climate and overcrowding of people are the major causes of increasing incidence of parasitic infections. Differentiation of parasitic agents is an important step for initiation of tailored treatment and prevention of these infections.

Therefore, proper hygienic conditions in the society and diagnosis are important priorities. Epidemiological surveys carried out in different countries have shown that in summer time the rate of parasitic infestation increases because of high temperature and more usage of public water sources which are usually unsafe in places with poor sanitary condition. So surveys on such infections are necessary for any control strategy. Hence research priorities in developing countries include to study status of intestinal infections.

The aim of this study was to determine the rate of parasitic infections in people referred to Kashani Hospital, Tehran, Iran during summer 2005 in order to help the health authorities for planning prevention and control program for such infections.

METHODOLOGY

The fecal samples of 205 patients who were referred to Kashani Hospital, Tehran, Iran during the summer 2005 were collected for parasitological examinations. For every patient a questionnaire was filled including information about age, sex, presence of intestinal symptoms and presenting complaints of the patients. These samples were transferred to the Parasitology laboratory, School of Public Health, Tehran University of Medical Sciences.

Table-I: Rate of infection with each intestinal parasite in 205 patients referred to Kashani Hospital in Tehran, Iran during summer 2005

Parasite Subjects	*No*	*%*
B. hominis	43	20.97
G. lamblia	11	5.36
I. butschelii	1	0.48
D. fragilis	1	0.48
T. hominis	1	0.48
E. nana	2	0.97
E. vermicularis	1	0.48
Taenia	1	0.48
Total	61	100

Direct microscopy was performed[1] for detecting parasites ova, protozoal cysts, trophozoite form of protozoa, specially the motile trophozoites. In the next step, in order to concentrate the sample, formalin-ether concentration technique was applied according to Garcia protocol.[1] In addition staining with Ziehl-Neelsen was prepared for coccidial identification.[1]

To identify *Strongyloides stercoralis,* 4gr of stool was put on the surface of nutrient agar plate and sealed with parafilm for prevention of contamination. 48 hour later and for 7 consecutive days the plates were scrutinized for larva or adult form of nematodes.

RESULTS

Overall 205 stool samples were examined, including 95 (46.34%) male and 110 (53.65%) female. Of these, 43 (20.97%) were children less then 12 years old and 162 (79.02%) adults. A total of 155 individuals had intestinal symptoms.

According to the results, 61 (29.75%) of the 205 subjects were infected at least with one species of intestinal parasites. The rate of infection with each parasite has been presented in Table-I. Accordingly, the most prevalent parasite was *Blastocystis hominis* (20.97%). Among 43 people infected with this parasite including 8 children and 35 adults, overall 33 patients (76.74%) had intestinal symptoms (Table-II) especially abdominal pain and diarrhea.

The second-most prevalent parasite was *Giardia lambila* all 11 cases occurred in children under 12 years old and all also presented with intestinal disorders.

DISCUSSION

In this study 29.75% of study subjects were infected with intestinal parasites. There was no statistical significant correlation between the infectivity with intestinal parasites either with gender or age.

Table-II: Association of intestinal clinical symptoms in 43 patients infected with Blastocystis hominis

	No	*%*
B.hominis with symptoms	33	76.74
B.hominis without symptoms	10	23.25
Total	43	100

Protozoal infections were found to be much higher than helminthes infestations. This is in agreement with several studies carried out in different parts of Iran which showed that in recent year's the prevalence of intestinal helminthes had undergone remarkable decrease compared to previous decades.[2-6] Indeed both helminthes and protozoan parasites were much prevalent as stated by Rezaeian (1986) who found 53.8% infectivity with intestinal parasites (18.3% helminthes & 45% protozoan parasites) in people referred to the school of Public Health, Tehran Medical University during 1980 – 1983.[7]

In the current study all cases of Giardiasis were found in children. This is in agreement with other studies[1,2] emphasizing the higher prevalence of this parasite in children and its association with intestinal disorders in this age group.

Also *B.hominis* was found as the most prevalent parasite. In the study of Yazici et al(2007) among 58 food workers in Aydin hospitals of Turkey similar results were obtained.[8] However, in contrast to the present study Shahbazi et al reported only 1.6% infectivity with *B. hominis* among 755 people from rural areas of saveh, Markazi Province, Iran.[5] This contradiction is probably due to the sample groups which were selected from a community population in the Shahbazi et al (2006) study,[5] while in the present study it was from those referred to the hospital, most showing clinical symptoms.

In the current study, among infected people with *B. hominis*, 33 individuals (76.74%) showed clinical symptoms. In the study of Shazly et al (2005) in 23 patients with clinical symptoms *B. hominis* was the only causative agent.[9] In addition, Dogan et al (1998) demonstrated that all 88 patients with *B. hominis* had clinical symptoms such as abdominal pain and lack of appetite.[10] Therefore, although the pathogencity of *B. hominis* is still controversial.[1,11] The findings of our study support the role of this pathogen as causative agent of intestinal clinical symptoms in infected people.

Further studies with larger groups, especially in infected patients without any other infectious agents will improve our knowledge about correlation of the infectivity with *B. hominis* and accompanying clinical symptoms.

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