

The Prevalence of Intestinal Protozoa in Patients Referred to Tabriz Imam Reza Hospital from January 2010 to December 2010

Milad Anvarian

Young researchers club, Tabriz Branch, Islamic Azad University, Tabriz, Iran.

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ABSTRACT

Intestinal parasitic infections are among the major diseases of concern to public health throughout the world. The aim of this study was to evaluation of intestinal protozoan frequency in hospitalized patients in Tabriz Imam Reza hospital. This descriptive study - cross over records and information was conducted in Tabriz Imam Reza Hospital. Patients that referred to this hospital in the first period January 2010 until December 2010 send for fecal examination by a physician were evaluate. Methods of this survey was a case of patient records were examined and information about the results that obtained by fecal examination. The 12-month period in 2515 number of fecal samples was referred to our center. Total of 57 numbers (2.26%) infestation by intestinal parasites were observed. The highest rate of infection related to Entamoeba histolytica cysts 20 cases (0.79%). Many other protozoa including Entamoeba histolytica trophozoites 2 cases (0.07%), Giardia cysts in 15 cases (0.59%), Giardia trophozoites 1 (0.03%) Entamoeba coli cysts 8 (0.31%) Endolimax nana cysts 11 cases (0.43%), respectively. The results showed that prevalence of intestinal protozoan in Tabriz area is similar with other parts of world, perhaps because of improvement of personal hygiene.

Key words: protozoan, intestine, human, Tabriz.

Introduction

Intestinal parasitic infections are among the major diseases of concern to public health throughout the world [39]. Some of the parasite species responsible are associated with severe morbidity often resulting in mortality, particularly in less developed tropical and subtropical countries [39,40]. Amoebiasis, giardiasis, ascariasis, hookworm infection, and trichuriasis are among the most common intestinal parasitic infections worldwide and are closely related to socio-economic status, poor sanitation, inadequate medical care and absence of safe drinking water supplies [5,17,19,38,39]. Intestinal parasitic infections are still a serious public health problem in the world, especially in developing countries [28]. The fecal oral route is significant in the transmission of parasite infections to humans via poor personal hygiene [24], environmental conditions

like contamination of soil and water sources with human feces [20]. Infection with intestinal parasite as a major problem has been recognized to spread within institutions for the mentally retarded because of inadequate personal hygiene and lack of toilet training [21]. Mentally retarded individuals are usually placed in institutions during childhood or adolescent and are highly debilitated patients who require care and treatment especially for infectious diseases [7]. Several surveys of institutions for the mentally retarded in the world have reported a wide range of prevalence (20–60%) of intestinal parasitism [41]. A prevalence rate of 7.3% was found among individuals with mental retardation in New York State [35]. Few epidemiological surveys performed in mentally retarded centers in Iran revealed a different prevalence of intestinal parasitic infection [16,29]. An investigation was undertaken to determine the prevalence of parasitic diseases in intellectual

Corresponding Author

Milad Anvarian, Young researchers club, Tabriz Branch, Islamic Azad University, Tabriz, Iran.
E-mail: milad.vet86@yahoo.com: Tel: +98 935 890 3710

disability persons in rehabilitation centers of Mazandaran province, northern Iran.

Methods and materials

This descriptive study - cross over records and information was conducted in Tabriz Imam Reza Hospital. Patients that referred to this hospital in the first period January 2010 until December 2010 send for fecal examination by a physician were evaluate. Methods of this survey was a case of patient records were examined and information about the results that obtained by fecal examination. A triple stool sample of each individual in three consecutive days was collected in P.V.A. and 10% formalin preservative and submitted to parasitology laboratory of Tabriz Islamic Azad University. The diagnosis was made on direct wet mount, formol-ether concentration, and with confirmation of positive stool specimens on Ziehl-Neelsen and trichrome stained slides. Statistical analysis was carried out using Chi square test.

Results and discussion

The 12-month period in 2515 number of fecal samples was referred to our center. Total of 57 numbers (2.26%) infestation by intestinal parasites were observed. The highest rate of infection related to *Entamoeba histolytica* cysts 20 cases (0.79%). Many other protozoa including *Entamoeba histolytica* trophozoites 2 cases (0.07%), *Giardia* cysts in 15 cases (0.59%), *Giardia* trophozoites 1 (0.03%) *Entamoeba coli* cysts 8 (0.31%) *Endolimax nana* cysts 11 cases (0.43%), respectively.

Discussion:

Intestinal parasitic infections are common major problem closely related to poverty, inadequate sanitation, and insufficient health care and overcrowding [4]. They cause significant morbidity among residents of mental institutions [3,12,37]. Previous reports have revealed that many institutions for mentally retarded patients have problem with endemic amebiasis and giardiasis [26,27,34]. In addition many of non-pathogenic parasites were frequently detected from fecal specimens of mentally retarded [31,36,42]. The presence of non-pathogenic protozoa could indicate a fecal contamination of the environment; in fact residents who had non-pathogenic parasites are more likely to be infected by pathogenic parasites [37]. According to recent reports in general populations in different parts of Iran, the prevalence rate of the intestinal helminth infections, were 0–3.6% [1,2,8,11,13,30,33]. It should be mentioned that in the recent years the prevalence of intestinal parasites, particularly of helminthic infections showed significant decrease, which can be

explained as follows: (a) substitution of untreated human excrement with chemical fertilizer, (b) installation and operation of reliable sewage system, (c) education on disinfecting vegetables before use, and (d) implementation of health educational programmes specially in Iran. As a result of the aforementioned intervention, helminth eggs were not observed in any of the stool samples in this study. Another reason for a low prevalence of helminthic infection was routine drug therapy with mebendazole undertaken in all rehabilitation centers under study and as a result the prevalence rate of helminthic infection in this survey was null, which corresponds with previous relevant reports from Iran. We found a 26.2% intestinal protozoan infection and no helminth eggs among the mentally retarded subjects in northern Iran, which is in accord with the results of a study by Sargeant *et al* [32] in South East England that showed 24.7% protozoa infection in patients in a group of mental hospitals and also reported no helminth in any specimen due to regular de-worming of the patients. Kasseem *et al* [14] in a study among children admitted to Ibne Sina hospital in Libya reported no intestinal helminth parasites. A study among inhabitants of rehabilitation centers of Tehran, Iran, revealed 59.4% prevalence rate of infection [29]. In another report, Mahyar *et al.* [16] showed 56.6% prevalence rate in mentally retarded children of Qazvin, Iran. The prevalence rate of the intestinal parasitic infections in mentally retarded individuals in the world, were 76.67% in Egypt [18], 30% in Abha, Saudi Arabia [25], 7.3% in New York [35], 53.8% and 23% in Italy [6,9,], 35.7% in Korea [15]. Recent reports in Iran, showed a prevalence rate of intestinal parasites between 18.4 and 29.75% in general populations [10,13,22,23,33]. When the data of the current study were compared with those of the reports of the recent years in different groups of people in Iran, no significant difference between infection rates in ID persons of northern Iran with the normal populations was observed. The minor differences in the prevalence rate reported in different studies may be due to different groups of study populations and the years in which those surveys were performed.

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