



Available online at: www.basra-science_journal.org

ISSN -1817 -2695



Intestinal parasitic infections among rural villages in Basrah marshes regions

Hind Mahdi Jarallah

Marine Science Center, University of Basrah, Basrah, Iraq

E-mail: jarallah9@yahoo.com

Received 15-12-2011, Accepted 27-2-2012

Abstract:

An epidemiological study were conducted during the period from June 2011 till October 2011. A total of (294) stool samples were collected and examined for intestinal parasites infections. The samples were taken from children (159 male and 135 female) from 1< to 14 years old in two rural villages (Abu-Malah and Harer) found in Basrah marshlands regions.

The total prevalence of infection with *Enterobius vermicularis* was (50.32% , 44.6%) in Abu-Malah and Harer village, respectively. Moreover, the total prevalence of infection with *Entamoeba histolytica* and *Giardia lamblia* was, (23.87% , 30,93%) and (45.16% , 18.7%) in Abu-Malah and Harer village respectively. While, the lower prevalence of infection was recorded for *Ascaris lumbricoides* and *Hymenolepis nana* (2.58% , 3.59%) and (3.87% , 6.47%) in both villages, respectively. The total prevalence of infection with intestinal parasites was (75.51%) in both villages.

Key words :Epidemiology, intestinal parasites, marshlands

1- Introduction

Intestinal parasitic infections are still the most common public health problem in the world. WHO reported about 3.5 billion people are affected, and 450 million are ill as a result of these infections, the majority being children [1].

Intestinal parasitic infections are more prevalent among the poor sections of population. A previous study indicated that schools children in Basrah marshlands villages have higher rate infection with intestinal parasites than cities [2], that's related with many factors which increased the high rate of infection with intestinal parasites from one region to another, these include environmental factors, personal

hygiene, poor sanitary and climatic factors [2 ; 3]. The high prevalence of infection in children is attributed to the economic and social situation of the individuals which is the important cause of the prevalence of intestinal parasites [4].

Several studies have been done on the prevalence intestinal parasites in Iraq [5 ; 6 ; 7 ; 8] but there are still epidemiological information prevalence is poor about fact of population infections in Iraq marshland regions. Therefore, this study was performed to assess the prevalence of the intestinal parasitic infections in rural villages found in Basrah marshlands regions.

2- Materials and Methods

A total of (294) stool samples were collected randomly from children their ages ranged from (1<-13) years old in two villages Abu-Malah and Harer which belong to Basrah marshlands. This survey was performed from period June till October 2011.

The stool samples, then were transferred to the laboratory of communicable diseases of Marine Science Center for parasitological

examination by direct stool smear methods (Lugol's solution) and formaline-ether sedimentation technique methods [9]. The specimens were examined microscopically for the presence of trophozoites, cysts, eggs and larval stages of protozoa and helminthes parasites. Chi-square test was used to compare the data P value, less than 0.05 was considered significant [10].

3- Results

Prevalence of infection with different intestinal protozoan and helminthes parasites according to age and sex for children of Abu-Malah and Harer villages in Basrah marshlands is shown in Table (1). The results of this study show no infection with *Hymenolepis nana* and *Ascaris lumbricoides* in age group (1<-4) years old.

The variation in prevalence of infection in single and double infections in two villages was showed and recorded in Table (2). The total prevalence of infection was (75.51%) in both villages. Statistically, there are significant differences (P<0.05) between single and double infections with intestinal parasites in both villages.

Table (1): Prevalence of intestinal parasitic infection in both villages according to age and sex groups

Age years	Sex	Villages											
		Abu-Malah Infe. No.(%)						Harer Infe. No.(%)					
		n	En	Gl	Ev	Hn	Al	n	En	Gl	Ev	Hn	Al
1<-4	♂	40	13(32.5)	21(52.5)	10(25)	0	0	39	15(38.46)	19(48.71)	9(23.07)	0	0
	♀	31	11(35.48)	17(54.83)	2(6.45)	0	0	24	9(37.5)	1(4.16)	5(20.83)	0	0
	B	71	24(33.8)	38(53.52)	12(16.9)	0	0	63	24(38.09)	20(31.74)	14(22.22)	0	0
5-8	♂	20	2(10)	7(35)	20(100)	1(5)	0	25	5(20)	11(44)	19(76)	1(4)	0
	♀	35	4(11.42)	13(37.14)	29(82.85)	0	2(5.71)	19	0	5(26.31)	7(36.84)	2(10.52)	0
	B	55	6(10.9)	20(36.36)	49(89.09)	1(1.81)	2(3.63)	44	5(11.36)	16(36.36)	26(59.09)	3(6.81)	0
9-14	♂	16	3(18.75)	7(43.75)	10(62.5)	3(18.75)	1(6.25)	19	9(47.36)	5(26.31)	11(57.89)	5(26.31)	3(15.78)
	♀	13	4(30.76)	5(38.46)	7(53.84)	2(15.38)	1(7.69)	13	5(38.46)	3(23.07)	11(84.61)	1(7.69)	2(15.38)
	B	29	7(24.13)	12(41.37)	17(58.62)	5(17.24)	2(6.89)	32	14(43.75)	8(25)	22(68.75)	6(18.75)	5(15.62)
Total	♂	76	18(23.68)	35(46.05)	40(52.63)	4(5.26)	1(1.31)	83	29(34.93)	17(20.48)	39(46.98)	6(7.22)	3(3.61)
	♀	79	19(24.05)	35(44.30)	38(48.1)	2(2.53)	3(3.79)	56	14(25)	9(16.07)	23(41.07)	3(5.35)	2(3.57)
	B	155	37(23.87)	70(45.16)	78(50.32)	6(3.87)	4(2.58)	139	43(30.93)	26(18.7)	62(44.6)	9(6.47)	5(3.59)

En: *Entamoeba histolytica*, Gl: *Giardia lamblia*, Ev: *Enterobius vermicularis*, Hn: *Hymenolepis nana*, Al: *Ascaris lumbricoides*, B: Both

n: Examined No.

♂: Male

♀: Female

Table (2): Single and double intestinal parasitic infections in both villages

Villages	Double infection			Single infection			Total		
	Exam. No.	Infe. No.	%	Exam. No.	Infe. No.	%	Exam. No.	Infe. No.	%
Abu-Malah	155	90	58.06	155	37	23.87	155	127	81.93
Harer	139	70	50.35	139	25	17.98	139	95	68.34
Total	294	160	54.42	294	62	21.08	294	222	75.51

4- Discussion

Intestinal parasitic infections cause a public health problem in Iraq. The results of the present study showed the occurrence of several protozoa and helminthes parasitic infections among poor population of marshland regions in two villages found in Basrah. *Giardia lamblia* and *Entamoeba histolytica* were common parasitic protozoa among children in different regions of Iraq [2].

In this study the prevalence of the infected with giardiasis was higher in Abu-Malah village (45.16%) when compared with Harer village (18.7%). Amoebiasis and giardiasis are common causes of intestinal protozoal infection in Basrah marshlands villages [2]. In this study, protozoan infections were in general higher in pre school-children especially in the age group (1<-4) years. The reason could be due to contaminated milk and drinking water and personal hygiene measures. For both sexes there are no significant ($P>0.05$) differences between males and females infection in both villages. Both sexes, males and females in different ages, were exposed to chance of infection because all of them were living under the same conditions of infection in villages [11, 4].

Another study by Kadir *et al.* [12] reported the infection with *Entamoeba histolytica* (4.1%) and *Giardia lamblia* (10.9%) while the present study indicated infections with *E. histolytica* and *G. lamblia* (23.87% , 30.93%) and (45.16%, 18.7%) in Abu-Malah and Harer village, respectively, high prevalence of *E. histolytica* and *G. lamblia* in this study might be due to the fact that the socioeconomic and environmental

conditions were bad, on the other hand, Amoebiasis and giardiasis are transmitted through contaminated hand, food and water, thus children can be the first vulnerable group to be contaminated [13]. Statistically, there were significant differences ($P<0.05$) between the two villages regarding the total prevalence of giardiasis, while there were no significant differences ($P>0.05$) between the two villages concerning the total prevalence of amoebiasis.

In the present study, the rate of infection of helminthes, especially *Enterobius vermicularis*, was higher compared to protozoan infections. There are no significant differences ($P>0.05$) between the two villages according to the total prevalence of *Enterobius vermicularis* infection.

The results of this study showed the infection with *Ascaris lumbricoides* observed in age group (5-8) years for Abu-Malah village in contrast with Harer village, the infection was noticed in the age group (9-14) years. In this study, infection with *Ascaris lumbricoides* and *H. nana* was not reported in age group (1<-4) years for both villages. In agreement with the previous reports [14 & 15], the study showed a low prevalence of ascariasis (2.58%) in Abu-Malah and (3.59%) in Harer village.

The results of the present investigations demonstrated that the total prevalence of single and double intestinal parasitic infection was (54.42% , 21.08%) respectively in the two villages. On the other hand, there are significant differences ($P<0.05$) between single and

double infection with intestinal parasites in each village.

In conclusion, the high rate of infection with intestinal parasites in Basrah marshlands was attributed to the low socio-economic status of families in marshlands villages which indicated the higher

intestinal parasitic infections in their children. Measures including health education program on personal and environmental hygiene must be taken to reduce the prevalence of infection for marshlands population.

5- References

- [1] World Health Organization (1998). Control of Tropical Disease. Geneva.
- [2] Mahdi, N.K. & Jassim, A.H. (1987). Intestinal parasitic infections of primary school children in three regions of southern Iraq. *Med. J. Basrah Univ.*, 6(1):55-61.
- [3] Scolari, C. ; Torti, C. ; Beltrame, A. ; Matteelli, A. ; Castellh, F. ; Gulletta, M. ; Ribas, M. ; Morana, S. and Urban, C. (2000). Prevalence and distribution of soiltransmitted helminth (STH) infections in urban and indigenous schoolchildren in Ortigueira, State of Parana, Brasil: implications for control. *J. Trop. Med. Int. Health*, 5: 302-307.
- [4] Tappe, K. H. ; Mohammadzadeh, H. ; Khashaveh, S. ; Rezapour, B. and Barazesh, A. (2011). Prevalence of intestinal parasitic infections among primary school attending students in Barandooz-Chay rural regions of Urmia, West Azerbaijan province, Iran in 2008. *Afr. J. Microb. Res.* 5(7): 788-791.
- [5] Al-Zubaidy, A.B. & Aubaid, Q.N. (1996). Parasitic infections among population of Tunis village, Babylon, Iraq. *J. Babylon Univ.*, Ser. C: Pure Appl. Sci., 1(3): 283-290.
- [6] Al-Dulaimi, S.S. (1996). Parasitic etiology of diarrhea in Al-Anbar Province. *Al- Mustansiryah, J. Sci.*, 7(2): 64-68.
- [7] Al-Tae, A.A. ; Risan, F.A. and Mirza, M.Y. (1998). Prevalence of intestinal parasites in children attending Medical city. *J. Fac. Med. Baghdad.* 40 (4): 441-446.
- [8] Al-Izzi, N. S. (1998). Prevalence of intestinal parasitic infection in preschool children in Mosul city. *J. Fac. Med. Baghdad*, 40(4): 478-480.
- [9] Al-Hadithi, I. A. & Habash, A.H. (1986). Parasitology. *Basrah Univ.*, pp 485.
- [10] Spss (1999). Spaa for Windows. 10. Spss.
- [11] Al-Abiady, N.A.K. (1988). The correlation of helminthic ova and protozoa cysts in human and indust in and around houses in some villages around Mosul. *M.Sc. Thesis, Univ. Mosul*: 83 pp.
- [12] Kadir, M.A. ; kader, A.A. and Faraj, K.K. (1987). Survey study of the intestinal parasites among different population of Arbil city. *J. Fac. Med. Baghdad*, 29 (4): 455-458.
- [13] Mengistu, A. ; Gebre-Selassie, S and Kassa, T. (2007). Prevalence of intestinal parasitic infections among urban dwellers in southwest Ethiopia. *Ethiop. J. Health. Dev.* 21(1): 12-17.
- [14] Jassan, B.A. ; Al-Dujail, A. A. And Saleh, M. M. (1986). Prevalence of intestinal parasites in school children of Kirkuk city, Iraq. *J. Bio. Sci. Res.*, 17(2): 119-125.
- [15] Jarabo, M.T. ; Garcia-Moran, N.P. and Garcia-Moran, J.I. (1995). Prevalence of intestinal parasites in student population. *Enferm. Infec. Microbiol. Clin.*, 13(8): 464-486.

Jarallah: Intestinal parasitic infections among rural villages in Basrah marshes ...