Parasitic Infections Among Population Tunis Village, Babylon, Iraq

Ali Bannawi Al-Zubaidy and Qasim Najem Aubaid
Dept. of Biology, College of Science, University of Babylon.

Abstract

The present study was carried out 436 faecal samples from persons in Tuins village, Babylon, Iraq. During the period of April , 1993 to March 1994. Were examined for intesinal pathogens, 250(57.3%) were found the intestinal, Parasities both protozoa and heminths . Enteropthogens were recovered from 2506(57.3% persons, from whom 217(49.8%) were revealed a singl enteropathogen and 33(7.5%) a mixed infection. The following parasites were noted :

1- Entamoeba coli : 10.5%
2- Entamoeba histolytica : 3.4%
3- Giardia lamblia : 9.4%
4- Iodomoeba buetschlii : 5.9%
5- Endolimax nana : 2.9%
6- Blastocystis hominis : 16.7%
7- Chilomastic mesnili : 2.7%
8- Ascaris lumbricoides : 1.8%
9- Enterobius vermicularis : 3.6%

Introduction

In Iraq, the prevalence of intestinal parasitic of human have been stuidied by some workers . Halawani (1942), reported the prevalence rates of intestinal protozoa as the Entamoeba histolytica (1.8%), Entamoeba coli (7.5%), Endolimax nana (1%), Lodaoeba buetschlii (3%), Chilomastic mesnili (2.3%), and Giarda Lamblia (2.1%), and the prevalence rates of helminths as the Ascaris Lumbricoides (2.3%), and Enterobius vermicularis (0.4%). Bailey (1955), was studied intestinal helminths in 497 individuals, and found Ascaris Lumbricoides to be the most prevalent helminth (28.8%), and Ancylostoma duodenal came next with rate of (9.5%). Al-Hanoon and Mukhlis (1982), investegated the intestinal parasites among 164 secondary school students were reported the prevalence rates of Entamoeba coli (29.8%), Entamoeba histolytica (23.8%) Giardia lamblia (16.4%), Iodamoeba buetschlii (3%) , Endolimax nana (2.4%), and Chilomastic mesnili (2.4%), also detected helminths Hymenolepis nana was more prevalent then other species (7.9%), and Enterobius vermicularis (2.4%), and Ascaris lumbricoides (0.5%). The prevalence rates of intestinal parasites among primary school children was detected by Mahdi and Jassim (1987), reported the Entamoeba coli (54.2%), Endolimax nana (17.4%), Giardia lamblia (15.9%), Iodomoeba buetschlii (14%), Chilomastic mesnili (8.1%), and Entamoeba histolytica (4.9%), and also Enterobius vermicularis and

Ascaris lumbricoides were detected in less than (1%), of smaples. Aubaid, (1990) also studied the prevalence rates of some intestinal parasites among Foodhandlers in Basrah, southern of Iraq, was reported B lastocystis hominis (37.2%), Giardia lamblia (11.8%), and Entamoeba histolytica (7.5%).

The present paper to detect intestinal parastites both protozoa and helminths - Among protozoa . Blastocystis hominis was more prevalent than other species detected. The percentage of infection rate; Blastocystis hominis was (16.7%), Entamoeba coli (10.5%), Entamoeba histolytica was (3.4%), Endolimax nana was (2.9%), and Giardia lamblia (9.4%), Iodomoeba buetschlii was (5.9%), Chilomastic mesnili was (2.7%). While the helminths were dtected as Enterbius vermicularis was (3.6%), and Ascaris lumbricoides was (1.8%). Single and multiple parastic infections, age distribution, were also detected in this study .

Materials and Methods

During the period of April, 1993 to March, 1994. Faecal samples were collected from 436 persons. All samples were examined for parasites by the following procedures (WHO, 1983; Beavern and Jung , 1985; Belding, 1965) .

The parameters which have been followed in this study are;
A) Direct smear using 0.5% Eosin.
B) Floatation method using brine solution .
C) Physiological saline solution and
D) Iodine smears using lugols iodine solution .

Results

Out of 436 faecal samples from persons in Banylon, were examined for intestinal pathogens, 250(57.3%). Were found this intestinal parasites, both protoazoa and helminths. Enteropathogens were recovered from 250(57.3%) of persons, from whom 217(49.8%) were revealed a single entropathogen and 33(7.5%) showed a mixed infections. In those with a single infection, intestinal protozoa were detected from 195(44.8%) while in a single infection, intestinal helminths detected from 22(5%) table (I). Distribution of single infections was shown in table (2). Mixed parasites "protozoa" (more than one) were recoverd from 28(6.4%) and helminths mixed with protozoa was detected in 5(1.1%) individuals . Distribution of mixed infections was shown in table (3). Distribution of infection among persons according to age groups as shown in table (4). The higher rate of positivity was found in age groups 5-14 years (75%) . Table (5) shows the distibution and types of parasites detected in various age groups . The rates of recovery ranged from (75%) which was detected in age groups 5-14 years and (27.7%) which was detected in age groups of ages greater than 55 years . The most commonly isolated parasites was B. hominis , G. lamblia and E. vermicularis and the highest rates (20% . 16.6% and 16.6%) respec-

tively of their recovery were found in age groups (15-24 and 5-14) years.

Discussion

Infection rate with intestinal parasites among persons accounted for 57.3%. Surveys in Iraq (Jassim, 1967; Al-Hanoon and Mukhlis, 1982) and Egypt (El-Sherif *et al*, 1985) reported an intestinal parastic infection more or less or comparable rate to the figures obtained from this study. However, lower rate (24.8%) of parasitic infections was also reported by (Arif and Hassoun , 1969). On the other hand studies from Saudia Arabia (Khan and Al-Jama , 1987) reported infection rate lower than ours . This can be explained on the basis of different sampling methods , field and laboratory techniques , age , Socioeconomic status , number of individuals examined and the higher endemicity of such enteropathogens in our area .

Single and mixed enteropathogens were recoverd from 49.8% and 7.5% of persons respectively. These figures are consistent with the results from other studies in Iraq (Jassim , 1967; Arif and Hassoun, 1969; Al-Hanoon and Mukhlis, 1982; Aubaid , 1990). These figures were much higher than that reported from Saudia Arabia, which might be due to the higher endemicity of such enteropathogens in our area.

B. hominis was the most common parasit recoverd among persons , although other parasitc agents were also recoverd in varying percentages . However , further investigations may be needed to assess the factors that are important in transmission of B. hominis . B. hominis was shown lower (16.7%) than reported by Aubaid (1990) .

The prevalence of E. coli in this study , was shown to be lower (10.5%) than repoted works in Iraq and the prevalence of G. lamblia also was shown to be lower (9.4%) than the reported figures in Iraq (Al-Hanoon and Mukhlis, 1982; Mahdi and Jassim, 1987; Aubaid, 1990). E. histolytica was found with an average of (3.4%). Higher prevalence rate of E. histolytica were reported in some studies in Ieaq, which ranged from 15.3% and 23.8 (Arif and Hassoun , 1969; Al-Hanoon and Mukhlis, 1982; Aubaid , 1990) lower rate of infection was reported on one occassion (Halawani, 1942). However, lower prevelance rate of E. histolytica were also reported from Egypt (El-Sherif *et al*, 1985) and Saudia Arabia (Khan and Al-Jama, 1987) .

I. buetschlii and E. nana in this study were shown to be higher (5.9% and 2.9%) respectively than the reported by (Halalwani, 1942 ; Al-Hanoon and Mukhlis, 1982) but lower than the reported by (Mahdi and Jassim , 1987). C. mensinili was shown to lower (2.7%) than the reported by (Mahdi and Jassim, 1987) but comparable with the results of (Halalwani, 1942; Al-Hanoon and Mukhlis, 1982). The concentration

method is better than the direct smear method espcially in the dection of helminths (Jassim, 1988). The prevalence rate of A. lumbricoides in this study, was shown lower (1.8%) than the some studies in Iraq (Halalwani, 1942; Bailey , 1955) but higher than the reported by (Mahdi and Jassim, 1987). E. vermecularis the prevalence rate of this helminth was shown to be higher (3.6%) than reported by some studies in Iraq (Halalwani, 1942; Al-Hanoon and Mukhlis, 1982; Mahdi and Jassim, 1987).

In Babylon, since there is no report available on the prevalence rate of the intestinal parasites from human . This study may well be the first in this Governorate. The variation between the results in this paper and also, other some studies were carried out in some Governorates in Iraq. This can be explaind on the basis of different sampling methods; number of individuals examined; age; laboratory techniques and socioeconomic status.

References

1-Al- Hanoon , Z., and Mukhlis, S. (1982). Prevalence of intestinal parasites among secondary school students in Mosul - Iraq . J.Fac.Med.Baghdad, 24(2) : 225-230 .

2- Arif , A.E., and Hassoun, A.S. (1969). An intestinal parasite survey amongest foodhandlers in Baghdad - 1966. Bull. End. Dis, 11:7 .

3- Aubaid, Q.N. (1990) . Workers in food establishments in Basrah: Microbiological and epidemiological MSC. thesis,University of Buniversity of Basrah .

4- Baily, V.M. (1955). Notes on the incidence of human parasites in Samawa, Iraq. Bull. End. Dis., 1: 250.

5- Beaver. C.P. and Juny, C.R. (1985). Animal agents and vectors of human disease. 5th ed., Lea and Febiger philadelphia, P. 250 .

6- El-Sherif, M.A.F., Salwa, A.H. and Samir, A. (1985). foodhandlers as apotential hazard in transmision of pathogens in Dakhalia in Egypt. J.Egypt. Soc. Parasitol., 15 (15): 213 - 218 .

7- Halawani, A. (1942). Endemic diseases reports. J.R. Fac. Med. Iraq. 6 (6): 311-327.

8- Jassim, K.A. (1967). Intestinal parasites among army recruits as determined by concentration technique of stool examination. J. Iraq Army Medical Service, 3 : 43.

9- Jassim , A. H. (1988). Intestinal parasitic infections in Basrah - retrospective study of six years . Emirates med J., 6 (3) : 233-237.

10- Khan, Z.A., Al-Jama, A.A., Madan (1987). Parastic

infections among foodhandlers in Damam and Al-Khobar, Saudia Arabia. Ann. Saudia Med., 7 (1): 47-50.

11- Mahdi, N.K. and Jassim, A.H. (1987) Intestinal Parasitic infections of primary school children in three regions of southern Iraq. Med. J. of Basrah university, 6 (1): 55-61.

12- WHO (1983). Manual for laboratory investigation of acute enteric infection: special analytical tests for pathogenicity of E. coli. WHO/CDD/83.3.

Table 1 : Enteropathogens isolated from 436 individuals

Type of infection	No.	%
* Singl 1- Protozoa 2- Helminths	 195 22	 (44.8) (5.0)
Total	217	(49.8)
*Mixed 1- Protazoa / Protazoa 2- Protazoa / Helminths	 28 5	 (6.4) (1.1)
Total	33	(7.5)
Total	250	(57.3)

Table 2 : Distribution of single infection among 436 individuals

Type of infection	No.	%
E. coli	39	(8.9)
E. histolytica	12	(2.9)
G. lamblia	30	(6.8)
I. buetschlii	26	(5.9)
E. nana	13	(3.0)
B. hominis	63	(14.4)
C. meanili mesnili	12	(2.9)
A. lumbricoides	8	(1.8)
E. vermicularis	14	(3.2)
Total	217	(49.8)

Tbale - 3 : Distribution of mixed infection among 436 individualas

Type of infection	No.	%
* protozoa / Protozoa		
- Blastocystis hominis + E. coli	8	(1.8)
- Giardia lamblia + Blastocystis hominis + E. histolytica	8	(1.8)
- Giardia lamblia + E. histolytica	7	(1.7)
- E. coli + E. histolytica + Blastocystis hominis	5	(1.1)
- Giardia lamblia + E. vermicularis	5	(1.1)
Total	33	(7.5)

Tbale -4 : Distribution of mixed infection among individualas according to age - groups

Age-groups (years)	No. of tested	No. of positive	%
5 - 14	60	45	75.0
15 - 24	150	100	66.6
25 - 34	130	73	56.1
35 - 44	40	17	42.5
45 - 54	28	10	35.0
55 +	18	5	27.7
Total	436	250	57.3

Table 5 . The distribution of parasites according to age groups and the types of parasites

Age groups (years)	No. tested	PARASITES									
		E.Coli No. %	E.histolytica No. %	G.lamblia No. %	I.buetschlii No. %	E.nana No. %	B.hominis No. %	C.mesnili No. %	A.lumbricoides No. %	E.vermicularis No. %	Total No. of parasites (%) detected
5 ___ 14	60	4(6.6)	3(5.0)	6(10.0)	7(11.6)	2(3.3)	8(13.3)	5(8.3)	0.0	10(16.6)	45(75)
15 ___ 24	150	20(13.3)	4(2.6)	25(16.6)	6(4)	5(3.3)	30(20)	0.0	4(2.6)	6(4)	100(66.6)
25 ___ 34	130	15(11.5)	3(2.3)	7(5.3)	11(8.4)	4(3.0)	24(18.4)	6(4.6)	3(2.3)	0 0	73(56)
35 ___ 44	40	4(10.0)	5(12.5)	0 0	0.0	0.0	6(15.0)	1(2.5)	1(2.5)	0 0	17(42.5)
45 ___ 54	28	2(7.1)	0.0	1(3.5)	2(7.1)	2(7.1)	3(10.7)	0.0	0.0	0 0	10(35)
55+	18	1(5.5)	0.0	2(10.1)	0.0	0.0	2(10.1)	0.0	0 0	0 0	5(27.7)
Total	436	46(10.5)	15(3.4)	41(9.4)	26(5.9)	13(2.9)	73(16.7)	12(2.7)	8(1.8)	16(3.6)	250(57.3)