COMPARATIVE STUDY OF INTESTINAL PARASITIC INFESTATION AMONG FOOD HANDLERS IN ABU DHABI (U.A.E.) 1981 - 1982

Pages with reference to book, From 163 To 166

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Abstract

The present study deals with investigation of the prevalence of intestinal parasites among food handlers. A total of 42,022 specimen of faeces were examined for different intestinal parasites at the Public Health Laboratories of Abu Dhabi, U.A.E. These food handlers visited the Preventive Medicine Department for their medical fitness certificates. Findings revealed that the total of 14,136 (33.64%) persons were positive for different pathogenic intestinal parasites. They were found to show ten species of helminths and protozoa with overall incidence of 23.91% and 14.96% respectively. Ancylostoma duodenale was prevalent among the helminth group, with an incidence of 13.80%. E.histolytica were highly prevalent among the protozoan group with an incidence of 8.88%. Results are tabulated according to their nationalities, percentage of positivity of individual parasites and the total positive of faeces. The percentage of the total number of positive food handlers were 14,136 (33.64%) while the positivity of the individual parasites among these positive specimen was 16,326 (38.85%). The percentage of parasites were more as some of the faeces showed more than one parasites. The faeces of 42 different nationals were examined. Maximum food handlers were Indians (70.26%), second was Pakistanis (11.21%). From our findings we interpret that the intestinal parasites prevalence rate is high among Indians and also our findings suggest that the most common intestinal helminth was A. duodenale (JPMA 38: 163, 1988).

INTRODUCTION

Intestinal infestation causing public health hazards may not be apparently realised by common people causing tremendous loss of vitality and often fatally reducing resistance to other diseases. This grave problem has been realised during last half century in the advanced countries of the world and they have succeeded in lowering the intestinal parasitic load to such a degree that it is no longer considered to be of any danger, whereas in the developing countries the intestinal parasitic infections are a major problem in human beings[1]. The spread of these parasites is associated with poor personal and food hygiene, especially in handling and storing of raw vegetables and fruits. Asymptomatic carriers are particular public health hazard, especially if they work as food handlers where they may become a source of intestinal parasitic infection to others. Moreover, due to rapid travelling facilities the geographical barrier for many of the intestinal parasites is primarily a problem to those who risk getting infected, in the broad sense, it is also a problem to those who must have business connection with them. That is why the advanced countries of the world have controlled this problem by the application of preventive measures. In general the mode of transmission of most parasites are:-

1) Faecal contamination.
2) Eating of food containing infective forms.
3) Penetration of infective forms.
4) Inoculation by an arthropod vector.
5) Personal contact.
6) Presence of flies.

MATERIALS AND METHODS

The 42,022 food handlers who attended the health screening included catering staff, cooks, waiters, housemaids and others concerned with handling food. These food handlers are usually asymptomatic carriers of any parasitic infection. The faecal specimens were examined by the direct light microscopy of smear in normal saline and lugol iodine preparations, as well as by floatation technique of brine saturation solution. It is advisable to use lukewarm saturated solution to get better results. The laboratory diagnosis of intestinal parasites is based on demonstration of ova, cysts or trophozoites in faeces. If any parasitic infection is identified they are treated and reexamined until cleared of the parasitic infection.

RESULTS

A total of 42,022 specimens of faeces were examined from 44 different nations including the U.A.E.

Table I. Prevalence of Intestinal Parasitic infection among Food Handlers according to their nationality and positivity – Period : 1981 + 1982.

Nationality	Total No. of cases 42,022	Total No. of +ve faeces 14136(33.64)	Total No. of Parasites 16326(38.85)
Indians	29527(70.26)	11145(37.74)	12820(43.41)
Pakistanis	4714(11.21)	879(18.64)	1092(23.16)
Iranis	1231(2.92)	460(37.36)	507(41.18)
Bangladeshis	1141(2.71)	410(35.93)	488(42.77)
Filipinos	878(2.08)	201(22.99)	229(26.08)
Sri Lankans	761(1.81)	231(30.35)	274(36.00)
Lebanese	755(1.79)	198(26.22)	223(29.53)
Egyptians	578(1.37)	149(25.77)	169(29.23)
Syrians	553(1.31)	116(20.97)	136(24.59)
Yemenis	368(0.87)	103(27.98)	113(30.70)
Thais	342(0.81)	57(16.66)	59(17.25)
Other Countries	1174(2.79)	187(15.93)	216(18.39)

Nationals from 25 countries (154 specimens) showed no positivity of Intestinal Parasites.
Note: Figures in parenthesis indicate percentage of each group.

Table I shows the total number of positive cases and the prevalence rate of intestinal parasites among the various nationalities. The same table also shows the distribution of various nationalities. It was observed that Indians formed the bulk of the catering workforce 29,527 (70 .26%) and also the maximum number of positivity 37.74% of parasitic infection. While the total number of Iranians examined was 1231 (2.92%) and their positivity rate was 37.36%, which is very much closer to that of the Indians prevalence rate. Total number of parasites were more among Indians 43.41% followed by Bangladesh and Iran 42.77% and 41.18% respectively. Those from 25 countries (European, Far East, African and Asian) showed no positivity. Total positive cases were 33.64% and parasites were at the rate of 38.85%. Data shows that 5.21% have multiple intestinal parasitic infection. Among Arab countries Lebanon and Egypt showed highest prevalence rate of positivity at 2622% and 25 .77% respectively. U.A.E. nationals showed negligible positivity of intestinal parasites.

Table II. Prevalence rate of Intestinal Nematodes and Platyhelminths among Food Handlers according to Nationality Period : 1981 – 1982

Nationalities	Total Cases	Intestinal Nematodes					Platyhelminths			
		Ancylostoma	Ascaris lumbri-coides	T. trichiura	S.sterco-ralis	E.vermicu-laris	H.nana	Taenia	S.mansoni	Total
Indians	29,527	5141	810	2337	55	23	65	1	–	8432
	(70.26)	(17.41)	(2.74)	(7.91)	(0.18)	(0.07)	(0.22)	(0.003)	–	(28.55)
Pakistanis	4,814	223	82	146	4	2	30	3	–	490
	(11.21)	(4.73)	(1.73)	(3.09)	(0.08)	(0.04)	(0.63)	(0.06)	–	(10.39)
Iranis	1,231	71	20	49	2	3	30	1	–	176
	(2.92)	(5.77)	(1.62)	(3.98)	(0.16)	(0.24)	(2.43)	0.08)	–	(14.29)
Bangladeshis	1,141	165	69	109	4	3	1	–	–	351
	(2.71)	(14.46)	(6.04)	(9.55)	(0.35)	(0.26)	(0.08)			(30.75)
Filipinos	878	37	16	62	1	2	–	–	–	118
	(2.48)	(4.21)	(1.82)	(7.06)	(0.11)	(0.22)				(13.43)
Sri Lankans	761	71	27	86	1	–	–	–	–	185
	(1.81)	(9.33)	(3.54)	(11.30)	(0.13)					(24.31)
Lebanese	755	24	11	31	3	6	–	6	–	81
	(1.79)	(3.18)	(1.45)	(4.10)	(0.39)	(0.79)		(0.79)		(10.72)
Egyptians	578	15	9	21	3	1	–	–	–	49
	(1.37)	(2.60)	(1.55)	(3.63)	(0.51)	(0.17)				(8.48)
Syrians	553	10	17	20	–	1	–	–	1	49
	(1.31)	(1.80)	(3.07)	(3.61)		(0.18)			(0.18)	(8.86)
Yemenis	368	–	–	–	–	–	–	1	–	1
	(0.88)							(0.27)		(0.27)
Omanis	175	–	–	–	–	–	–	–	1	1
	(0.42)								(0.57)	(0.57)
Other Countries	1,341	43	21	52	1	1	–	4	–	118
	(3.19)	(3.20)	(1.56)	(3.87)	(0.07)	(0.07)				(8.79)
Total	42,022	5,800	1082	2913	74	42	126	12	2	10,051
	(100.0)	(13.80)	(2.57)	(6.93)	(0.17)	(0.09)	(0.30)	(0.03)	(0.004)	(23.92)

Note : Figures in parenthesis indicate percentages.

Table III. Prevalence of Intestinal Protozoa among Food Handlers in Abu Dhabi.

Nationality	Total cases	E.histolytica	G. lamblia	Total
Indians	29527	2643(8.95)	1745(5.90)	4388(14.86)
Pakistanis	4714	340(7.95)	262(5.03)	602(12.77)
Iranis	1231	195(15.84)	146(11.86)	341(27.70)
Bangladeshis	1141	77(6.74)	60(5.25)	137(12.01)
Filipinos	878	61(6.94)	50(5.69)	111(12.64)
Lebanese	755	95(12.18)	47(6.22)	142(18.81)
Egyptians	578	68(11.76)	52(8.99)	120(20.76)
Syrians	553	47(8.49)	40(7.23)	87(15.73)
Yemenis	368	38(10.33)	40(10.87)	78(21.20)
Other Countries	2277	170(7.46)	109(4.79)	279(12.25)
Total	42022	3734(8.88)	2551(6.07)	6285(14.96)

Note: Figures in parenthesis indicate percentages.

able II & III shows the prevalence rate of intestinal helminths and protozoa with regard of various nationalities.

DISCUSSION

The study of intestinal parasites were carried out among food handlers during 198 1-82. Most of the catering staff were Asians, while few were from Europe, Africa and Far East countries. Total number of reported positive cases were (33.64%), while the total number of parasites were 38.85%. The highest rate of parasites positivity among Indians could possibly be due to the fact that the maximum number of food handlers examined were from India (70.26%) (Table 1) and the rest were from 41 other countries. It should be noted that this present study was based from different nationalities working in food concerned organizations. Nationals from 25 countries showed no positivity of intestinal parasites. Total number of countries represented in this study was 42. During this study different types of intestinal parasites were detected, five types of nematodes, three types of platyhelminths and two type of protozoa (Table II & III). High prevalence rate were seen with Ancylostoma 13.80%, E. histolytica 8.88%, T. trichuira 6.93%, Giardia 6.07% and Ascaris lumbricoides 2.57%.The platyhel minth group revealed very low percentage (0.33%). H. nana was most common platyhelminth in Iranians (2.43%). The high incidence rate of Ancylostoma among Indians 17.41% and Bangladeshis 14.46% could be explained by the fact that the Indians who are working as food handlers were from Kerala state of India which has a similar climate as Bangladesh (tropical) indicating that this parasite is endemic in these areas. Chernin[2] reported 68% hookworm infection in India, while Ibrahim and Chowdhury[3] detected 81% of hookworm infection in Bangladesh. Compartively, the present study showed the lower positivity of Ancylostoma than these two worker's findings, this difference might be due to the epidemiological factors which has great bearing on the incidence of infection. T. trichiura (whip-worm) was found in 1130% of Sri Lanlcans. Bangladeshis showed the maximum positivity rate of Ascaris lumbricoides 6.04%. Moazzam[4] reported A. lumbricoides 33.9% among Bangladeshis. Arab countries showed low percentage of helminths, this might be due to the small number of persons examined compared to the Asians. Overall percentage rate of intestinal protozoa were 14.96%. High prevalence rates of 27.70%, 21.20% and 20.76% were found in iranis, Yemenis and Egyptians respectively. Our data about E.histolytica is very close to the Hoarse 1952 data, which reported 20% of the world population suffer from amoebic infection. Almost all amoeboids convert a varying proportion of patients into symptomless cyst passers. Intestinal parasites were not detected in some nationalities like Tunisia, Iraq, German, Tanzania, Afghanistan, etc., because the number of persons examined from these countries were low, having no statistical significance. We observed that presence of intestinal parasites were in variable range among different nationalities. It was also noted that some parasites were endemic in some places e.g. Ancylostoma. Finally the intestinal parasites and their control are intimately linked to mftny primary health care activities. Transmission of the majority of the intestinal parasitic infections is related to personal hygiene. Intestinal parasitic infections are contacted mainly through eating of contaminated food and raw vegetables. The disease is spread largely by food handlers if they don't wash their hands after defecating. Cockroaches and flies, which have been in contact with human faeces, can also cause intestinal parasitic infections. All these types of infection reveals the important role played by ignorance, poverty and resultant social backwardness in the transmission of amoebiasis and certain intestinal parasitic infections.

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