THE PROFILE OF INTESTINAL AMAEBIASIS IN DAKAHLIA GOVERNORATE USING THE CELLULOSE ACETATE PRECIPITIN TEST

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INTRODUCTION

Amoebiasis is a major health problem. In Egypt an incidence of 8.9-31% was reported in Dakahlia Governorate, Sheir et al. (1979) found that the incidence of amoebiasis was 62.5%. Patients with invasive amoebiasis suffer from intestinal ulceration with haematophagous trophozoites in their stools (Rees, 1986).

Sera of patients with invasive amoebiasis or harbouring pathogenic strains of *E. histolytica* contain specific anti-amoebic antibodies, while those harbouring non pathogenic strains are usually serologically negative (Healy, 1971; Nilson et al., 1980 and Jackson, 1985).

It has been reported that the indirect haemagglutination (IHA) test is

considered as the most sensitive test to detect anti-amoebic antibodies (Healy et al., 1971; Gilman et al., 1976 and Bonilla et al., 1982).

The aim of the present work is to study the prevalence of invasive amoebiasis among the different population groups in Dakahlia Governorate using the cellulose acetate precipitin (CAP) test and comparing its efficiency with the IHA test.

MATERIAL AND METHODS

Two hundred and one patients attending the outpatient clinic of Mansoura University Hospital during the period from April, 1986 to January, 1987 were submitted for examination of fresh stool samples or three suc-

cessive days by the Merthiolate Iodine Formaldehyde concentration technique (Blagg et al., 1955). Sera of 32 parasite-free persons were used as controls. The IHA test was performed according to the method of Kessel et al. (1961) using a commercial kit (Behring-werke Co.). A titre of 1/128 or more was considered as a positive reaction. (Milligram et al., 1966).

The CAP test was performed according to the method of Stamm (1970). The positivity depend on the development of arcs.

RESULTS

Are shown in tables 1, 2 and 3.

DISCUSSION

Stool examination for *E. histolytica*

may give false negative results as the cysts appear in intermittent showers (Stamm, 1970) and usually disappear if the ulcers are secondarily infected (Meagraith, 1973). In the present study, the prevalence of *E. histolytica* by stool examination ranges from 10.5 to 50% in the different groups. The total prevalence rate was 27.3% among males and 34.0%

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The sensitivity of IHA test was 83.3% and its specificity was 97.0% in cases with invasive intestinal amebiasis. This is in accordance with the results of Morris et al.

(1970) who recorded 96.0% sensitivity and 98.2% specificity in invasive amebiasis. In cyst passers, the sensitivity of the test was 16.6%. On the other hand CAP test gave 78.8% sensitivity and 93.8% specificity in invasive amebiasis. In cyst passers the test gave positive results in 11.1%. The difference is a statistically significant.

Amoebiasis is statistically higher in females in the child-bearing period ($P < 0.5$). This may be due to multiparity. Besides the role of contraceptive pills causing hypercholesterolaemia and increased plasma cortisol level (Wynn et al., 1966; and Hall et al., 1974).

There was no statistical significant difference ($P > 0.5$) between males and females. Sheir et al. (1979) recorded a prevalence rate of 62.5% in the same locality. The high prevalence recorded by the previous authors may be related to the fact that they selected a group of patients suffering from chronic colitis. Moreover the wide use of anti-amebic drugs, may be another contributing factor.

cant in the prevalence of amaebic antibodies between patients hasbouring haematophagous trophozoites and cyst passers by b both methods $P>0.001$. This was in agreement with the results of James et al. (1981).

The prevalence of invasive amae^abiasis among the investigated group was 12.9% elicited either by the detection of haematophagous trophozoites in stool, or by the presence of anti-amae^abic antibodies by the CAP test. On the other hand the IHA test gave a pit higher results than both methods (14.1%). However, there was no statistical difference between the three method ($P>0.05$).

As the CAP test is easy to perform it can be used as a screening test in sero-epidiologica, surveys.

SUMMARY

Entamoeba histolytica is a highly endemic disease in Egypt. The

present work was carried out to study the prevalence of amaebiasis in different population groups in Dakahlia province. Two hundreds and one patients were examined, of them 110 were males and 97 were females of different age groups. The total infection rate, was found to be 27.3% and 31% among males and females respectively, while invasive amoebiasis was present in 11.9%.

Three methods of diagnosis were used including stool examination by the Merthiolate iodine formaldehyde concentration (MIFC) method, the indirect haemagglutination (IHA) and the cellulose acetate precipitation (CAP) tests. The IHA test was found to be more specific and sensitive while the CAP test was easier in the application and gave more qualitative information about invasive amoebiasis which favours its application in sero-epidemiological studies.

Table (1) : Results of stool examination for *E. histolytica*.

Age groups	MALES					FEMALES				
	No.		No.		No.		No.		No.	
	+ve	%	C	T	C+T	+ve	%	C	T	C+T
-10	10	(20.0)	0	0	2	10	(30.0)	1	0	2
11-20	18	(33.3)	2	1	1	23	(34.8)	4	1	3
21-30	16	(31.3)	4	1	0	22	(40.9)	4	3	2
31-40	25	(24.0)	5	0	1	11	(45.4)	2	2	1
41-50	22	(50.0)	9	1	1	13	(30.8)	3	1	0
> 50	19	(10.5)	1	0	1	12	(16.6)	1	0	0
Total	110	(27.3)	21	3	6	91	(34.0)	16	7	8

C : Cyst
T : Trophozoite.

Table (2) : Indirect haemagglutination and cellulose acetate precipitin tests in intestinal amoebiasis.

Cases	No.		EX.		no.		no.		%	
	+ve		+ve		+ve		+ve		+ve	
	C. A. P.		I. H. A.		C. A. P.		I. H. A.		C. A. P.	
Trophozoite-passer*	24	(78.8)	20	(83.3)	19	(78.8)	4	(11.1)	2	(6.2)
Cyst-passer	36	(11.1)	6	(16.6)	4	(11.1)	1	(3.1)	1	(3.1)
Controls	32	(6.2)	1	(3.1)	2	(6.2)	0	(0.0)	0	(0.0)

* Cases showing haematophagous trophozoites.

. Cases showing cysts only.

P < 0.01

Table (3) : Stool examination, IHA and CAP in invasive amoebiasis.

No.	E. histolytica trophozoites		IHA		CAP	
	+ve	%	+ve	%	+ve	%
201	24	(11.9)	27	(13.4)	24	(11.9)

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