

CLINICAL PROFILE OF AMOEBIC COLITIS AND ITS ASSOCIATION WITH MALABSORPTION

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ABSTRACT

Background: The amoebiasis is a very common problem of tropical countries like India. The association of malabsorption with amoebic colitis was studied in the present study from 1978 to 1980 in the tertiary care centre of Western Uttar Pradesh (India).

Aims & Objective: The study was done with the aim of studying the clinical profile of chronic amoebic colitis and the incidence of malabsorption for fats, carbohydrates and proteins in cases of chronic amoebic infection of the intestine.

Material and Methods: The study was carried out in 102 cases of chronic amoebic colitis and 25 age and sex matched controls. For the evidence of malabsorption, faecal fat excretion, D – Xylose excretion, total serum protein and albumin were estimated in all the cases. The patients who showed malabsorption were subjected to jejuna biopsy to know the histopathological findings.

Results: Majority of cases (74%) were in the age groups of 21 – 40 years with decreasing incidence on either side. Pain in abdomen (98%) whether localised or diffuse was the commonest symptom followed by altered bowel habits (84%). Other common symptoms were tenesmus (44%), increased gastro colic reflex (41%) and gaseous dyspepsia (19%). Among the physical signs palpable sigmoid colon was the commonest. Faecal fat excretion was less than 6gm/24 hours in majority (94.12%) of cases and malabsorption was found only in 5.88% of cases. D – Xylose excretion was more than 5 gm in majority (97.06%) and excretion less than 5 gm (malabsorption) was found in only 2.94% cases. Total serum proteins and albumin were between 6.1 to 7 gm and 3.1 to 4 gm respectively in majority (76.4% and 74.5%).

Conclusion: Pain in abdomen was the most common symptom in amoebiasis. Amoebiasis does not cause significant malabsorption. Protein absorption was not affected much in amoebiasis.

KEY-WORDS: Amoebiasis; Colitis; Malabsorption

Introduction

Amoebiasis is as old as the development of human race but only about a century ago, it was suspected that *Entamoeba histolytica*, a protozoan, may be responsible for its causation. It remained controversial for some time that the organism causes damage to intestine or is present without that.

Since the organism involves basically large intestine, its role in production of malabsorption was not thought of till Lifitz and Holman^[1] suggested that rapid transit time through bowel results in steatorrhea in some individuals. Even after this concept much work has not been done in establishing the role of amoebiasis in creation of malabsorption of various substances. India being a tropical country and also a developing one, the incidence of amoebiasis as well as malnutrition is very high. Certain surveys have reported the

incidence as high as 58%.^[2] Because of economic conditions and poor sanitation, it is important to know how much of a role, amoebic colitis plays in the causation of malabsorption. Probably the workers studying the various aspects of amoebiasis have not given enough stress to this important aspect, because there is a lacuna in the knowledge about this part of the disease.

It was felt that the study of absorption of carbohydrates, fats, and proteins is needed in cases of amoebic colitis to advance our knowledge and improve the management of the disease. This study was done with the following aims and objectives:

- To study the clinical profile of chronic amoebic colitis.
- To find out the incidence of malabsorption for fats, carbohydrates and proteins in cases of chronic amoebic infection of the intestine.

Materials and Methods

The present study was carried out on 25 controls and 102 patients of chronic amoebic colitis attending tertiary care centre at Meerut (Uttar Pradesh) between 1978 to 1980 after consent of the patients and approval of institutional ethical committee. Control group was constituted of healthy subjects who had no abdominal symptoms, their stool examination for 6 days was normal and sigmoidoscopy was also normal. Initially 40 healthy subjects were taken up only 25 gave their consent for sigmoidoscopic examination. The diagnosis of amoebic colitis was based on the following criteria:

1. Patients having colonic symptoms for more than 6 weeks like disturbed bowel habits, gaseous dyspepsia, colonic pain etc.
2. Stool examination showing trophozoite and/or cysts of *Entamoeba histolytica* OR Sigmoidoscopic examination showing ulcerative mucosa intervening with healthy areas.

The patients were undergone stool examination, proctosigmoidoscopy, colonic swab of *Entamoeba histolytica*, faecal fat excretion, D - Xylose absorption test, serum proteins and jejunal biopsy.

Results

The present study comprised of 102 cases of chronic amoebic colitis and 25 age and sex matched controls. (Table 1 & 5) All the controls were subjected to faecal fat excretion test, D - Xylose test and estimation of serum proteins. (Table 2 & 3) On jejunal biopsy, partial villous atrophy was seen in only one case while in the rest, it was normal. (Table 4) Majority of cases were having symptoms for 6 months to 2 years. (Table 6) Analysis of the above shows that change in bowel habits and pain abdomen were the commonest symptoms present in 84% and 98% patients respectively. Pain in the abdomen was localized or diffuses and more often it was felt in the left iliac fossa. Tenesmus and increased gastrocolic reflex were also very common symptoms being complained of by 44% and 41% of cases respectively. (Table 7) Positive physical findings were present in a large number of cases.

Palpable sigmoid colon being the commonest finding present in about 59%. 3 cases did not show any physical findings (Table 8). Stool examination was done consecutively for six days by simple method as well as by concentration method, for trophozoites and cysts of *Entamoeba histolytica* (Table 9).

Sigmoidoscopy was done in all the cases. More than half the cases had no abnormal findings on sigmoidoscopy. (Table 10) In those cases in whom ulcers were seen on sigmoidoscopy, swab was taken from the ulcerated area and examined for cyst and trophozoite of *E. histolytica*. (Table 11) Swab was positive for *E. histolytica* in 85.7% cases where ulcers were present; however, this number was only 30% of the total cases. Faecal fat excretion test was done in all the cases of chronic amoebic colitis. (Table 12) D - Xylose test was done in all cases. (Table 13) As evident from the above, D - Xylose Excretion was between 6.1 - 7 grams in about 74% cases. No female case showed malabsorption for carbohydrates. Total serum proteins and serum albumin was done in all the cases. (Table 14) There was not much difference with sex. There was no case whose total protein was less than 5 and albumin less than 2.5 gm. When the results of faecal fat excretion and D - Xylose excretion test were combined the malabsorption was found in 7 cases (6.86%) out of 102 cases. Out of these 7 cases, 3 patients had malabsorption of both fats and carbohydrates. In one case there was malabsorption only for carbohydrates, while in three cases, only for fats. Total serum proteins and albumin were not statistically different ($p < 0.05$) in controls and in the cases.

Jejunal biopsy was carried out in the seven cases in whom malabsorption was detected by faecal fat excretion and D - Xylose excretion test. (Table 15) Even in those cases where malabsorption was present, jejunal biopsy showed abnormality in two cases, where one had partial villous atrophy and one had chronic nonspecific inflammatory changes. Duration of symptoms in the cases showing evidence of malabsorption by faecal fat excretion test and D - Xylose excretion test. (Table 16) As above, majority of the cases had symptoms for 5-7 years. There was no case having symptoms for less than 5 years and more than 10 years.

The symptoms in these cases were analyzed in detail. (Table 17) All the cases have altered bowel habits in the form of mucus and blood in stool. Majority had tenesmus and abdominal pain with increased gastro colic reflex. None of these cases had constipation. The physical signs in these cases were analyzed in detail. (Table 18) Stool examination, sigmoidoscopic findings, faecal fat excretion, serum proteins, d-xylose excretion and jejuna biopsy in cases of malabsorption. (Table 19) Sigmoidoscopic findings in cases having malabsorption were similar to that of other cases of amoebiasis, and serum proteins were also within normal limits.

Table-1: Age and Sex Distribution of Controls

Age Groups (in years)	Male	Female	Total	Percentage
15 – 20	2	0	2	8
21 – 30	10	3	13	52
31 – 40	5	1	6	24
41 – 50	2	1	3	12
51 – 60	1	0	1	4
Total	20 (80%)	5 (20%)	25	-

Table-2: Faecal Fat Excretion in the Controls

Faecal Fat Excretion (gm/24 hours)	Male	Female	Total	Percentage
3 – 3.9	4	2	6	24
4 – 5	12	3	15	60
5.1 – 6	4	0	4	16
More than 6	0	0	0	0
Total	20	5	25	-

Table-3: D – Xylose Excretion in Controls

D – Xylose Excretion (in 5 hrs) in gm	Male	Female	Total	Percentage
Less than 5	0	0	0	0
5 – 6	13	2	15	60
6.1 – 7	3	2	5	20
7.1 – 8	4	1	5	20
Total	20	5	25	

Table-4: Jejunal Biopsy in Controls

Jejunal Biopsy Findings	Male	Female	Total
Normal	3	1	4
Partial Villous Atrophy	0	1	1
Total	3	2	5

Table-5: Age and Sex Distribution of the Cases of Chronic Amoebic Colitis

Age Groups (in years)	Male	Female	Total	Percentage
15 – 20	8	2	10	9.80
21 – 30	36	9	45	44.11
31 – 40	23	7	30	29.41
41 – 50	7	2	9	8.82
51 – 60	5	1	6	5.88
Above 60	2	0	2	1.96
Total	81 (79.4%)	21 (20.6%)	102	

Table-6: Duration of Symptoms in Cases

Duration of Symptoms	Male	Female	Total	Percentage
2 – 6 months	5	1	6	5.88
6 months – 1 year	12	2	14	13.72
1 – 2 years	34	6	40	39.21
2 – 3 years	6	3	9	8.82
3 – 4 years	7	2	9	8.82
4 – 5 years	6	2	8	7.84
5 – 6 years	4	2	6	5.88
6 – 7 years	3	1	4	3.92
7 – 8 years	2	1	3	2.94
More than 8 years	2	1	3	2.94
Total	81	21	102	

Table-7: Symptoms in Chronic Amoebic Colitis

Symptoms		Male	Female	Total	%
COLONIC					
Altered Bowel Habits	Total	69	17	86	84.31
	Dysentery				
	Total	50	15	65	63.72
	With Mucus	40	10	50	49.01
	With Blood	3	2	5	4.9
	With Mucus and Blood	7	3	10	9.8
	Diarrhoea	15	2	17	16.66
	Constipation	3	0	3	2.94
	Alternate diarrhoea and constipation	1	0	1	0.98
	Total	79	21	100	98.03
Abdominal Pain	Diffuse	2	3	5	4.90
	Lower Abdomen				
	Total	50	10	60	58.82
	Rt. Iliac fossa	10	5	15	14.70
	Lt. Iliac fossa	40	5	45	44.11
	Upper abdominal				
	Total	25	7	32	31.37
	Epigastrium	18	4	22	21.56
	Rt. Hypochondrium	6	2	8	7.84
	Lt. Hypochondrium	1	1	2	1.96
Tenesmus	No pain but generalised discomfort	2	1	3	2.94
	Total	39	6	45	44.11
	Pain at defecation	9	1	10	9.80
	Unsatisfactory bowel evacuation feeling	30	5	35	34.31
Increased Gastro colic reflex		36	6	42	41.17
Belching	Total	4	14	16	17.64
	Gaseous Dyspepsia	3	13	16	15.68
	Excessive Flatus	1	1	2	1.98
	Nausea	1	2	3	2.94
Others	Anorexia	2	3	5	4.90
	Headache	0	1	1	0.98
	Pyrosis and Regurgitation	10	5	15	14.70
	Total	12	9	21	20.59
FOOD DISAGREEMENT					
Others	Milk	2	3	5	4.90
	Fried Food	1	4	5	4.90
	Non Vegetarian	6	2	8	7.84
	Vegetarian	1	9	10	9.80
	Cooked outside	15	3	18	17.64
PSYCHOLOGICAL					
Others	Anxiety	1	2	3	2.94
	Obsession	2	3	5	4.90
	Phobia (Liver)	2	6	8	7.84
OTHERS (MISC)					
Extra Intestinal Amoebiasis		0	0	0	0

Table-8: Physical Findings in the Cases

Signs		Male	Female	Total	%	
Palpable Colon	Total		73	17	90	88.23
	Sigmoid Colon	Total	50	10	60	58.82
		Tender	43	7	50	49.01
		Non tender	7	3	10	9.80
	Ascending Colon	Total	13	2	15	14.70
		Tender	10	1	11	10.78
		Non tender	3	1	4	3.92
	Ascending & Descending Colon	Total	12	1	13	12.75
		Tender	10	1	11	10.78
		Non tender	2	0	2	1.96
Palpable Caecum	Total		7	2	9	8.82
	Tender		3	1	4	3.82
	Non tender		1	0	1	0.98
	Gurgling		3	1	4	3.82
Non colonic amoebiasis	Liver		5	1	6	5.88
	Others		0	0	0	0
No Positive Signs			2	1	3	2.94

Table-9: Stool Examination Findings in Cases

Stool Examination Findings	Male	Female	Total	%
Positive for Trophozoites	23	3	26	25.49
Positive for Trophozoites and Cysts	48	17	65	63.72
Positive for Cysts only	10	1	11	10.78
Total	81	21	102	

Table-10: Sigmoidoscopic Findings in Cases

Sigmoidoscopic Findings		Male	Female	Total	%
Ulceration	Normal	45	16	61	59.86
	Total	30	5	35	34.31
	Colon	28	2	30	29.41
	Rectum	2	3	5	4.90
Congestion/Oedema of mucosa		2	0	2	1.98
Granular mucosa		1	0	1	0.98
Pale mucosa		2	0	2	1.98
Spasm of Rectosigmoid Junction		1	0	1	0.98
Total		81	21	102	

Table-11: Colonic Swab in Chronic Amoebic Colitis Cases

Colonic Swab	Male	Female	Total	%
Positive for <i>E. histolytica</i>	26	4	30	85.71
Negative for <i>E. histolytica</i>	4	1	5	14.28
Total	30	5	35	

Table-12: Faecal Fat Excretion in Cases

Faecal Fat Excretion (gm/24 hours)	Male	Female	Total	Percentage
3 – 4	6	3	9	8.82
4.1 – 5	59	15	74	73.54
5.1 – 6	11	2	13	12.74
6.1 – 7	3	0	3	2.94
7.1 – 8	2	1	3	2.94
Total	81	21	102	

Table-13: D – Xylose Excretion in Cases

D – Xylose Excretion (in 5 hrs) in gm	Male	Female	Total	%
3 – 4	1	0	1	0.98
4.1 – 5	2	0	2	1.96
5.1 – 6	7	2	9	8.82
6.1 – 7	60	15	75	73.52
7.1 – 8	6	2	8	7.84
8.1 – 9	5	2	7	6.86
Total	81	21	102	

Table-14: Total Serum Proteins and Serum Albumin in Cases

Protein (gm %)		Male	Female	Total	%
Total Serum Proteins	5.1 – 6	14	5	19	18.62
	6.1 – 7	64	14	78	76.47
	7.1 – 8	3	2	5	4.90
	Total	81	21	102	
Serum Albumin	2.5 – 3	13	4	17	16.66
	3.1 – 4	60	16	76	74.50
	4.1 – 5	8	1	9	8.82
	Total	81	21	102	

Table-15: Jejunal Biopsy Findings in Cases

Jejunal Biopsy Findings	Male	Female	Total	%
Normal Intestinal Mucosa	5	0	5	71.44
Chronic non-specific inflammatory changes	1	0	1	14.28
Partial Villous Atrophy	0	1	1	14.28
Total	6	1	7	

Table-16: Duration of Symptoms in Cases

Duration of Symptoms	Male	Female	Total
< 5 years	0	0	0
5 – 6 years	2	0	2
6 – 7 years	2	0	2
7 – 8 years	1	1	2
8 – 9 years	0	0	-
9 – 10 years	1	0	1
Total	6	1	7

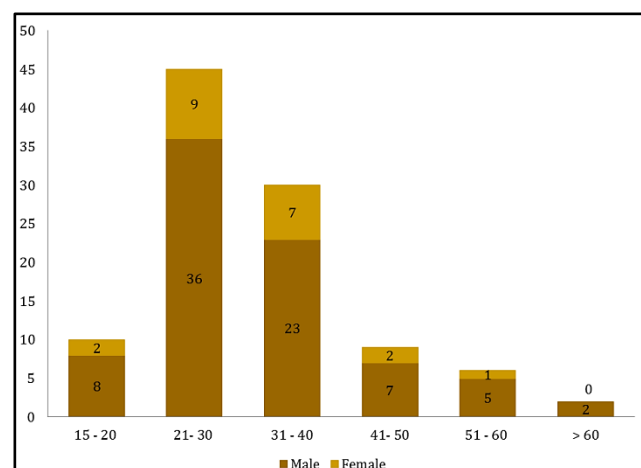
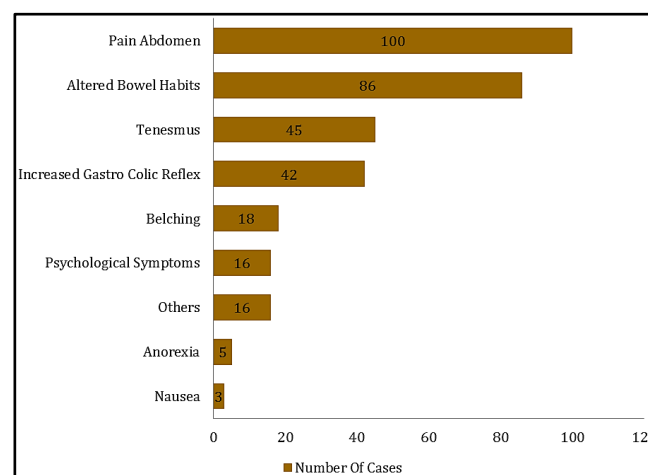
**Figure-1: Age and Sex Distribution of the Cases of Chronic Amoebic Colitis****Figure-2: Symptoms in Chronic Amoebic Colitis**

Table-17: Symptoms in Cases Showing Malabsorption

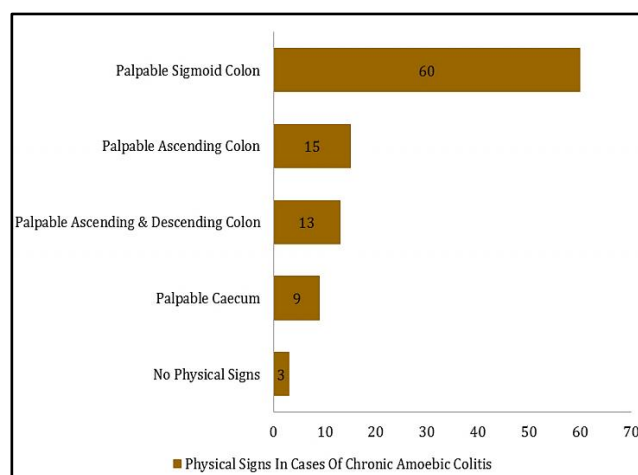
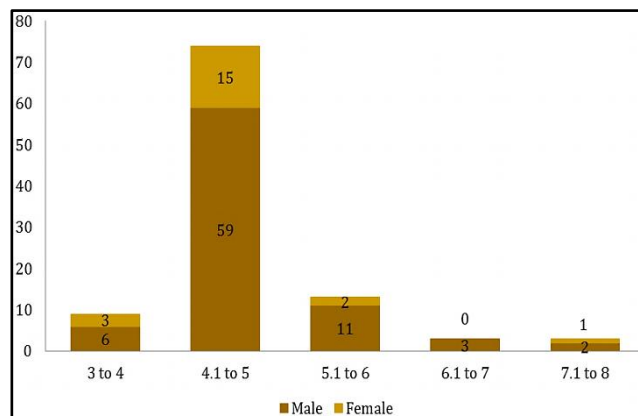
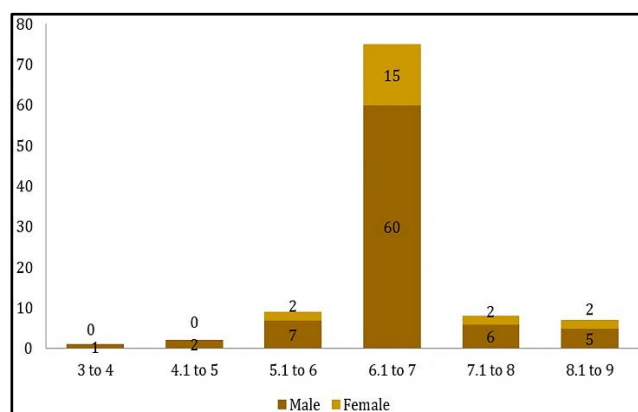
No.	Symptoms	Case Number						
		26	27	31	37	67	78	80
I. COLONIC								
1. Altered Bowel Habits		+	+	+	+	+	+	+
a. Dysentery								
i. With Mucus		+	-	+	+	-	+	+
ii. With Blood		-	+	-	-	+	-	-
iii. With Mucus and Blood		-	+	-	-	-	-	-
b. Diarrhoea		-	-	-	-	-	-	-
c. Constipation		-	-	-	-	-	-	-
d. Alternate diarrhoea and constipation		-	-	-	-	-	-	-
2. Abdominal Pain		+	+	+	+	+	+	-
a. Diffuse		-	-	-	-	-	-	-
b. Lower Abdomen		+	-	+	+	+	-	-
i. Rt. Iliac fossa		+	-	-	+	-	-	-
ii. Lt. Iliac fossa		+	+	+	+	+	-	-
c. Upper abdominal		-	+	+	-	-	+	-
i. Epigastrium		-	+	+	-	-	-	-
ii. Rt. Hypochondrium		+	-	-	-	-	-	-
iii. Lt. Hypochondrium		-	-	-	-	-	-	-
d. No pain but generalised discomfort		-	-	-	-	-	-	-
3. Tenesmus		+	-	+	+	+	+	+
a. Pain at defecation		+	-	+	-	-	-	-
b. Unsatisfactory bowel evacuation feeling		-	-	-	+	+	+	+
4. Increased Gastro colic reflex		+	+	+	+	-	+	-
5. Belching		+	-	-	-	-	+	-
a. Gaseous Dyspepsia		+	-	-	-	-	+	-
b. Excessive Flatus		-	-	-	-	-	-	-
6. Nausea		-	-	-	-	-	-	-
7. Others		-	-	-	-	-	-	-
8. Anorexia		-	-	-	-	-	-	-
II. FOOD DISAGREEMENT								
1. Milk		-	-	-	-	-	-	-
2. Others								
a. Fried Food		+	-	-	-	-	-	-
b. Non Vegetarian		-	-	-	+	-	-	-
c. Vegetarian		-	-	-	-	-	-	-
III. PSYCHOLOGICAL								
1. Anxiety		-	+	-	-	-	-	-
2. Obsession		-	-	-	-	+	-	-
3. Phobic (Liver)		+	-	-	+	-	-	-

Table-18: Physical Signs in Cases of Malabsorption

S. No.	Physical Signs	Case Number						
		26	27	31	37	67	78	80
1. Palpable Colon		+	+	+	+	+	-	+
a. Sigmoid Colon		+	+	+	-	+	-	+
- Tender		-	+	+	-	-	-	+
- Non tender		+	-	-	-	+	-	-
b. Ascending Colon		-	-	-	-	-	-	-
- Tender		-	-	-	-	-	-	-
- Non tender		-	-	-	-	-	-	-
c. Ascending and Descending Colon		+	-	-	-	-	-	-
- Tender		-	-	-	-	-	-	-
- Non tender		+	-	-	-	-	-	-
2. Palpable Caecum		-	+	-	+	-	+	-
- Tender		-	+	-	-	-	-	-
- Non tender		-	-	-	+	-	-	-
- Gurgling		-	-	-	-	-	+	-
3. No Positive Signs		-	-	-	-	-	-	-

Table-19: Stool Examination (SE), Sigmoidoscopic Findings (SF), Faeacal Fat Excretion (FFE), Serum Proteins (SP), D - Xylose Excretion (DXE) and Jejunal Biopsy (JB) in Cases of Malabsorption

Case No.	SE			SF	FFE	DXE	SP		JB
	V	C	Both				T	A	
26	-	-	+	Normal	6.67	4.18	7.2	3.1	Normal
27	-	-	+	Ulceration	6.73	3.77	7.0	3.1	Partial Villous Atrophy
31	-	-	+	Ulceration	6.45	5.32	6.9	3.5	Normal
37	+	-	-	Normal	7.23	5.24	7.2	3.2	Normal
67	-	-	+	Normal	7.81	6.10	7.6	3.2	Chronic Non Specific Inflammatory Changes
78	-	-	+	Normal	5.66	4.24	7.7	4.2	Normal
80	+	-	-	Normal	7.20	5.22	6.3	3.2	Normal

**Figure-3: Physical Findings in the Cases****Figure-4: Faecal Fat Excretion in the Cases****Figure-5: D - Xylose Excretion in Cases**

Discussion

Diarrhoea and dysentery are diseases known since time immemorial and their association with *Entamoeba histolytica* was also recognised about a century ago. In this study, in the majority of controls faecal fat excretion was between 4 – 5 gm and ranged between 3 – 6 gm. These subjects were taking diet with 50 – 100 gm fat per day. Other workers who have estimated faecal fat excretion in healthy population have reported similar findings. According to William Veale Thorpe^[3], faecal fat excretion should be less than 5 gm in 24 hours, when a person is taking diet containing fats less than 100 gm per day. George H Bell^[4] also holds the same view regarding the excretion of fats in faeces.

D – Xylose excretion test in urine for 5 hours after ingestion of 25 gm D – Xylose in the controls revealed 5 – 6 gm excretion in urine in three fifth of the cases, whereas in a lesser number, it was higher but in no case more than 8 gm. The estimation test was developed by Roe and Rice^[5] as a sensitive index for carbohydrate absorption. Other workers have also estimated D – Xylose in healthy persons and have shown similar results. According to G P Crean^[6], 5 hours 5 hours excretion should be between 5 – 8 gm. However, H Sleisenger^[7] observed lower limit up to 4.5 gm.

Total Serum proteins and albumin were also estimated in the present study, in healthy controls, which ranged from 6 – 7 gm/100 ml and 4 – 5 gm/100 ml, respectively. To find out the pattern of jejuna mucosa, jejuna biopsy was done in a few controls, which cooperated, and in spite of absence of symptoms and normal stool findings, one case had partial villous atrophy. A total of 102 cases of chronic amoebic colitis were studied, aged between 15 – 67 years with male to female ratio of 4 : 1. Majority of cases were between 20 – 40 years of age, which is not true incidence of the disease in our country because all the cases taken were from the medical outpatient department and indoors, and children were excluded. Male to female ratio of 4 : 1 also does not show prevalence of this disease in the two sexes, as the number of males attending hospital is much more than the number of females, and it is also difficult to get cooperation of females, especially sigmoidoscopy.

Patients were interrogated in detail for symptoms, which were present in the majority of cases. The commoner symptoms were pain in the abdomen (98%) and altered bowel habits (84.8%) present in cases with dysentery (64%) in the form of blood and mucus in stool. Diarrhoea was present in 16%, constipation in 2.94% and alternate diarrhoea and constipation in only one case. Other common symptoms were tenesmus, increased gastro colic reflex and flatulence (Gaseous dyspepsia).

Rangiah et al.^[8] found diarrhoea in 105 cases which was commonest symptom followed by pain in abdomen in 101 cases and mucus in stools in 91 cases, in their study of 136 cases of amoebic colitis.

Nath et al.^[9,10] recorded the observation from a study of 102 cases of intestinal amoebiasis and found flatulence in 55.8%, generalised pain in abdomen 41.1%, constipation 32.3%, pain in left and right iliac fossa in 36.2% cases. In the present study of 102 cases, palpable colon was the commonest sign (88.6%). Sigmoid colon was palpable in 58.9% cases which were tender in 49% cases. Nath et al.^[9] found tenderness in left iliac fossa in 32.6% cases, while in right iliac fossa in 25.6% cases.

In the present series, sigmoidoscopy was done in all the cases and it was normal in 58%. However, ulcers were seen in 34.3% cases of which majority were in colon (30 cases) and only 5 cases in the rectum. Chatterjee^[11] has described the ulcers may involve only the mucosa or there could be extensive superficial ulcers with hyperaemia or there could be marked thinning, dilation and saccululation of intestinal wall with adhesion to neighbouring viscera and narrowing of lumen of bowel. Madan Gopalan N^[11,12], in his study found amoebic ulcers in 17 cases out of 77 cases of chronic amoebic colitis. In 37 cases, it was normal. Other important findings were congestion and granularity of wall. Juniper^[14] found ulcer in 16 out of 22 cases of amoebic dysentery. Mittal^[15] found amoebic ulcers in colon in 17 cases out of 46 cases of amoebic colitis, while it was normal in 23 cases.

To find out the evidence of malabsorption, the faecal fat was estimated in 3 days stool sample to find the average for one day. In the present series out of 102, in 6 cases it was more than 6 gm, between 6 – 7 gm in three and more than 7 gm in three cases, so it seems likely that mild fat malabsorption may occur in cases of amoebiasis. Since none of the cases had more than 8 gm excretion of fat, it seems that amoebiasis does not cause severe malabsorption. Ravi Raman et al.^[6] studied 37 cases of chronic amoebiasis and 10 controls, for biochemical tests of intestinal absorption and jejuna biopsy. 4 out of 37 patients of chronic amoebiasis showed evidence of malabsorption. D – Xylose excretion was less than 5 gm in 3 out of 102 cases and all of them were males. Among the normal controls the 5 hours urinary excretion of D – Xylose is between 5 – 8 gm which is also reported by various workers like G.P. Crean.^[6] Another important finding was that in spite of chronic symptoms of gastrointestinal tract in the form of diarrhoea and dysentery for many years none of the cases had low plasma protein or even low albumin. It seems that protein absorption was not affected much in amoebiasis.

Conclusion

Pain in abdomen was the most common symptom in amoebiasis. Amoebiasis does not cause significant malabsorption. Protein absorption was not affected much in amoebiasis.

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