

# Clinicoepidemiological Profile and Short term Outcome of Abdominal Tuberculosis in Western Region of Bangladesh

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## Summary:

**Introduction:** Abdominal tuberculosis is not uncommon in daily medical practice. This study was done focusing variable presentations of abdominal tuberculosis

**Material and methods:** Data of consecutive patients diagnosed as abdominal tuberculosis were analyzed. Their epidemiological features, presentations, laboratory findings, and response to therapy were analysed.

**Result:** Total 69 cases (male 43, 62.3%, and female 26, 37.7%), age ranging from 15 to 85 years (mean 36.23) were enrolled. Rural (55, 79.7%), poor (49, 71%) and housewives (24, 34.8%) and people of 21-30 years age group (27, 39.1%) were more affected. Diagnosis was based on combinations of clinical, laboratory findings and therapeutic response. In this series 30 (43.5%), 23 (33.4%) and 12 (17.3%) were

diagnosed as intestinal, peritoneal and disseminated tuberculosis respectively. Of them 68 patients recovered with treatment. Five patients developed intestinal obstruction and one developed hepatitis and lost from follow up.

**Conclusion:** Diagnosis of abdominal tuberculosis is by combinations of clinical findings, without gold standard method. In our series intestinal tuberculosis and peritoneal tuberculosis were common clinical types with weight loss and abdominal pain as common clinical symptoms. And outcome of Treatment of TB was excellent

**Key words:** Abdominal tuberculosis, intestinal tuberculosis, peritoneal tuberculosis

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## Introduction:

Tuberculosis is a life threatening disease which can affect any organ system<sup>1</sup>. Abdominal tuberculosis (ATB) is defined as an infection in the gastrointestinal tract, peritoneum or intra-abdominal solid organs by Mycobacterium tuberculosis. It constitutes about 12%

of extra pulmonary tuberculosis and 1-3% of all cases of tuberculosis<sup>2,3</sup>. Abdominal tuberculosis although less common in western countries, constitutes a major public health problem in developing countries and associated with significant morbidity and mortality<sup>4,5,6</sup>. It can have varied presentations, frequently mimicking other common and rare diseases such as malignancy, bacterial infectious disease, and inflammatory diseases<sup>7,8</sup>. Approximately 15-25% of cases with abdominal tuberculosis have concomitant pulmonary tuberculosis<sup>9,10</sup>. The World Health Organization estimates that one third of world's population is infected with M. tuberculosis, with the highest prevalence of TB in South east Asia<sup>11</sup>. Abdominal tuberculosis is predominantly a disease of young adult. Two third of the patients are 21-40 year old with equal sex incidence<sup>12</sup>. Abdominal tuberculosis has a myriad of presentation. Presentation varies from asymptomatic state to surgical emergency. Abdominal pain, constipation and vomiting, recurrent attacks of sub-acute intestinal obstruction, localized or generalized ascites and abdominal distension, diarrhea, fever, weight loss, per rectal bleeding or melaena may be the presenting features<sup>13</sup>. Like other countries tuberculosis especially abdominal tuberculosis is also encountered in daily practice in our country, but

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epidemiological data is scanty. With this background this study was designed focusing clinical profile of patients of abdominal tuberculosis in North East Part of Bangladesh.

#### Materials and method:

This observational study was carried out from January 2012 to December 2016 in Sylhet. All patients diagnosed as abdominal tuberculosis in the department of Gastroenterology of North East Medical College Hospital, Sylhet, Bangladesh were included. Clinical informations, including age, sex, medical, personal history, symptoms, signs - physical findings, laboratory reports, imaging findings, endoscopic or colonoscopic findings with histopathological reports, ascetic fluid analysis were retrieved. Depending on clinical and laboratory findings, diagnosis were made and treatment with anti-tubercular drugs were given with follow up.

#### Statistical analysis:

Statistical analysis was done using SPSS version 20. Descriptive analysis of the data was done by using frequency and percentage for categorical variables, and mean and standard deviation for quantitative variables.

#### Result:

Total 69 patients (male 43, 62.3% and female 26, 37.7%), age varying from 15 years to 85 years (mean 36.23 and SD 14.97) were enrolled. Among them 55 (79.7%) were from rural area. Of them housewives (24, 34.3%) were affected more, followed by farmers (10, 14.5%) and students and business men (9, 13%). In this series 49 (71%) were from poor economic group and 19 (27.7%) were from middle class group. Among all 44 (63.8%) and 24 (34.8%) were smoker and betel nut chewer respectively. In this series 11 (15.9%) had family history of tuberculosis.

Common symptoms were abdominal pain (42, 60.9%), weight loss (48, 69.6%), fever (22, 31.9%), ascites (25, 36.2%), diarrhea (23.2%) and abdominal mass (16, 23.2%). In this series 30 (43.5%) had intestinal tuberculosis, 23 (33.4%) had peritoneal tuberculosis. Disseminated tuberculosis was found in 12 (17.3%) cases. In addition one case of oesophageal (1, 1.4%), one case of duodenal (1, 1.4%), one case of splenic (1, 1.4%) and one case of pancreatic tuberculosis (1, 1.4%) were found in this study. Fifteen patient had foci of pulmonary tuberculosis and two had pleural effusion

**Table-I**

*Showing demographic and clinical findings*

Variables		Frequency	Percentage
Age group	Up to 20 years	8	11.6%
	21-30	27	39.1
	31-40	11	15.9
	41-50	14	20.3
	51 and above	9	13
Sex	Male	43	62.3
	Female	26	37.7
Residence	Urban	14	20.3
	Rural	55	79.7
Occupation	student	9	13
	service	3	4.3
	Housewife	24	34.8
	Business	9	13
	Farmer	10	14.5
	Selfemployed	8	11.5
	Others	6	8.6
Economic group	Poor	14	20.3
	Lower middle class	35	50.7
	Middle class	19	27.5
	Rich	01	1.4
Personal habit	Tobacco chewer	24	34.8
	Smoker	25	36.2
Family history of Symptoms	Tuberculosis	11	15.9
	Diarrhoea	16	23.2
	Mass in abdomen	16	23.2
	Bleeding per rectum	1	1.4
	Ascites	25	36.2
	Intestinal obstruction	5	7.2
	dysphagia	1	1.4
	Constipation	1	1.4
	Fever	22	31.9
	Cough	7	10.1
	Weight loss	48	69.6
	Pain abdomen	42	60.9
	Diagnosis	Intestinal TB	30
Peritoneal TB		24	34.8
Oesophageal TB		1	1.4
Duodenal TB		1	1.4
Splenic TB		1	1.4
Pancreatic TB		1	1.4
Disseminated TB		11	15.9

**Table-II**

<i>Investigations</i>		
Variables		Frequency Percentage
X-R ay chest P-A View n=47	Normal	29
	TB	15
	Hilar lymphadenopathy	1
	Pleural Effusion	2
USG of abdomen (N=56)	Ascites	31
	Abdominal lymphadenopathy	2
	Abdominal masses	10
	Splenic lesion	1
Colonoscopy (n=40)	Normal	12
	Ileo-caecal lesion	19
	Ascending colonic lesion	18
	Transverse colonic lesion	1
	Ileal lesion	1
Upper GI endoscopy (n=2)	Left colonic lesion	1
	Oesophageal lesion	1
	Duodenal lesion	1
CT guided FNAC (n=2)	Splenic TB	1
	Pancreatic TB	1
Sputum for AFB	Positive	2

**Table-III**

<i>Findings of Patients with ascites</i>		
Variables	Range	Mean
Age	15-85	34.7 SD 17.62
Albumin in ascetic fluid	1.54 - 4.12 gm/dl	2.47 SD .52
SAG	0.35-1.05	0.82 SD 0.227
Ascitic fluid ADA	30-165	67.87

**Table-IV**

<i>Outcome after treatment</i>		
Outcome with treatment	Frequency	percentage
Recovered – no complication	63	91.6
Obstruction need surgery - recovered	03	04.2
Obstruction without surgery recovered	02	02.8
Hepatitis and lost from follow up	01	01.4

among 48 patients undergoing X-Ray chest examinations. Two patients had cervical lymphadenopathy. Two patients were sputum positive for AFB among those having pulmonary foci. ESR of patients varied from 06 mm to 153 mm of Hg in first hour (mean 51.41). In this series six patients with

intestinal tuberculosis had ascites. Among intestinal tuberculosis, predominant sites of involvement were ileocaecal region(47.5%) and ascending colon(45%). Histopathology showed granulomatous lesion. Mantoux test was equal or more than 10mm in eight patients out of 13 (61.53%) cases having done.

Of 25 cases having ascites, SAG level varied from 0.35 to 1.4 (mean 0.82 and SD 0.22), lymphocyte counts varied from 80% to 100% (total count 50 to 7500 per cubic mm, mean 1306.66) and ascitic fluid ADA level from 30- 165 (mean 67.87). Ascitic fluid culture for AFB was not done. But AFB staining of ascitic fluid were negative in all cases of ascites. Mantoux test was performed in 10 patients and found 10 or more in six (60%) cases

All the cases of intestinal, oesophageal, duodenal, splenic and pancreatic tuberculosis cases had lesion histopathologically or cytopathologically consistent with tuberculosis. Peritoneal tuberculosis was diagnosed on basis of clinical features, findings of Mantoux test, ascitic fluid analytic results positive response to anti-TB therapy. Disseminated tuberculosis cases were diagnosed by various combinations of clinical and laboratory findings.

Most affected age group in this series is 21 -30 year (27, 39.1%). In this series one patient developed hepatitis and lost from follow up, five patients developed intestinal obstruction and three of them required surgery. At the end of six months treatment 68 patients recovered.

#### **Discussion:**

Tuberculosis is a chronic granulomatous disease caused by *Mycobacterium tuberculosis*. Pulmonary tuberculosis is most common form and it primarily involves the lungs, but any part of body can be involved by the disease<sup>12</sup>. Among extra pulmonary tuberculosis, abdominal tuberculosis is one of the common disease<sup>14,15,16</sup>. Abdominal tuberculosis constitutes a major public health problem in developing countries and carries significant morbidity and mortality<sup>15,17,18,19,20</sup>.

In this study males were predominantly affected which is consistent with other studies<sup>12,20,21,22</sup>. But from literature review the reason for this gender difference is not known. Majority of patients in this series were between 21 – 40 year age group followed by 41-50 year group and it is consistent with report from India<sup>23</sup>. The disease affects people at peaks of their productive life and causes considerable financial losses to the individual and family.

Common symptoms were abdominal pain and weight loss. Other symptoms were fever, abdominal swelling etc. Abdominal pain is a common symptom in other studies also.<sup>20,23</sup>. Intestinal tuberculosis and peritoneal tuberculosis are commonest form in this series which is also consistent with other reports<sup>20,21,24</sup>. Among intestinal tuberculosis, predominant site of involvement were ileocaecal region and ascending colon which supports the data from other studies<sup>5, 21</sup>.

In our study fifteen patient had foci of pulmonary tuberculosis and two had pleural effusion on chest X-Ray examinations. Two patients were sputum positive for AFB. We cannot comment how many patients had primary abdominal tuberculosis as chest X-ray and other relevant investigations were not done in all cases.

In this series most of the patients represented poor economic class. Overcrowding, poor hygienic practice and poor nutritional status may play a role. In this series rural people are more affected and this could not be explained.

#### **Limitations of the study:**

Due to lack of facility and financial constrain culture for AFB and PCR for *M. tuberculosis* could not be done. So majority of the abdominal TB cases were diagnosed on the basis of clinical data, histopathological findings and response to anti TB drug trial. Disseminated tuberculosis was found in 12 cases (27.3%). Disseminated TB was higher (37.74%) in another study from Bangladesh<sup>15</sup>. In this study CXR, endoscopy of upper GIT and lower GIT and USG examinations were not done in all patients. And it might be the cause of lower rate of disseminated tuberculosis. We cannot say how many patients had drug resistant TB as culture and GeneXpert tests were not done. But 68 patients recovered with anti TB drugs suggesting that none had drug resistant TB.

#### **Conclusion:**

Abdominal tuberculosis is an important clinical entity among extra-pulmonary tuberculosis. Diagnosis of abdominal tuberculosis is by combinations of clinical findings, without gold standard method. In our series intestinal tuberculosis and peritoneal tuberculosis were common clinical types with weight loss and abdominal pain as common clinical presentation. And outcome of Treatment of TB was excellent

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