

# Frequency of Intestinal Tuberculosis in Patients of Intestinal Perforation Presenting in Surgical Emergency

Zulfiqar Ali Shahid, Irfan Ahmad and Muhammad Zarak Awais

## ABSTRACT

**Objective:** To determine the frequency of intestinal tuberculosis in patients of intestinal perforation presenting in surgical emergency.

**Study Design:** Cross sectional study

**Place and Duration of Study:** This study was conducted at the Department of Surgery, Nishtar Hospital Multan from January 2016 to June 2016.

**Materials and Methods:** Total 83 patients having age from 20-50 years, either male or female with intestinal perforation were selected. Laparotomy was performed in all selected patients and tissue was sent to laboratory for histopathology.

**Results:** Mean age of the age range was 20-50 years with mean age  $33.88 \pm 9.82$  years. Out of 83 patients, intestinal tuberculosis was found in 20 (24%) patients. In age group 36-50 years out of 39 (46.99%) patients, intestinal tuberculosis was found in 10 (25.64%) patients. No association ( $P = 0.800$ ) between age and intestinal tuberculosis was found. Total 40 (48.19%) patients were malnourished and intestinal tuberculosis was found in 16 (40%) patients. Total 43 (51.81%) patients were properly nourished and intestinal tuberculosis was noted in 4 (9.30%) patients. Significantly (0.001) higher rate of intestinal tuberculosis was noted in malnourished patients as compared to properly nourished patients.

**Conclusion:** Acute abdominal condition is one of the most common emergencies in trauma room, and acute abdominal tuberculosis is one of common causes of acute abdomen in endemic areas as Intestinal tuberculosis is a common extra-pulmonary Manifestation of tuberculosis. Its incidence is increasing in urban and rural areas due to poverty, under nutrition and overcrowding, Intestinal and abdominal tuberculosis is a systemic disease.

**Key Words:** Intestinal tuberculosis, acute abdomen, perforation, gastrointestinal infection, morbidity, mortality

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## INTRODUCTION

Tuberculosis has been declared a global emergency by the World Health Organization (WHO) and is the most important communicable disease worldwide.<sup>1</sup> Approximately one third of the world population is infected with TB and about three million die each year from this disease.<sup>2</sup> Tuberculosis remains the principal cause of death in the developing countries, probably due to poverty, lack of education, low detection rate, non-availability of experienced staff and insufficient coverage of the community by immunization programme.<sup>3</sup>

Department of Surgery, NMC / Nishtar Medical College Multan.

Correspondence: Dr. Zulfiqar Ali Shahid, Assistant Professor, Department of Surgery, Nishtar Medical College Multan.  
Contact No: 03008635836  
Email: drzulfiqarali56@gmail.com

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The incidence of tuberculosis is again on the rise in developed countries, due to the influx of immigrants from third world countries, HIV infection and increasing use of immunosuppressive therapy.<sup>4</sup>

The disease may involve any system of the body but abdomen is one of the commonest site involvement after lungs.<sup>5</sup> Though potentially curable, abdominal tuberculosis continues to be a major cause of morbidity and mortality. In the abdomen, tuberculosis may affect the gastro-intestinal tract, peritoneum, lymph nodes, and solid viscera.<sup>6</sup>

Perforation is a serious complication of abdominal TB, associated with high morbidity and mortality. The low incidence of tuberculous perforation is due to reactive fibrosis of the peritoneum. However, in recent years, intestinal perforation, which was relatively rare in the past, has been reported more frequently. The cause of this remains unknown.<sup>7</sup> Intestinal tuberculosis has usually one of the three main forms i.e. ulcerative, hypertrophic or ulcerohypertrophic, and fibrous structuring form.<sup>8</sup> The disease can mimic various gastrointestinal disorders, particularly the inflammatory

bowel disease, colonic malignancy, or other gastrointestinal infections.<sup>9</sup>

It usually runs an indolent course and presents late with complications especially acute or sub-acute intestinal obstruction due to mass (tuberculoma) or stricture formation in small gut and ileocaecal region or gut perforation leading to peritonitis.<sup>9</sup>

In spite of advancement in medical imaging, the early diagnosis of abdominal tuberculosis is still a problem and patients usually present when complications had occurred. This study will be found out the prevalence of Intestinal Tuberculosis in cases of Acute Abdomen, presenting as intestinal obstruction/peritonitis. We can minimize these fatal complications by early diagnosis and timely treatment of the cases.

## MATERIALS AND METHODS

In this cross sectional study, total 83 patients with intestinal perforation either male or female having age range from 20-50 years were selected from the Department of surgery, Nishter Hospital Multan from January 2016 to June 2016. Patients with history of typhoid, patients with duodenal perforation (Hole in the anterior wall of duodenum after exploration) and patients with traumatic perforation (Hole in any part of the gut after trauma) were excluded from the study. An approval was taken from institutional review committee and written informed consent was taken from every patient. Laparotomy was performed in all selected patients and tissue was sent to laboratory for histopathology. Findings of the Lab was entered in pre-designed proforma in term of intestinal tuberculosis (Yes/No). Demographic profile (age, gender, area of residence) of all the patients was also entered in Performa.

## RESULTS

Total 83 patients with intestinal perforation presenting in surgical emergency were recruited for this study. Mean age of the age range was 20-50 years with mean age  $33.88 \pm 9.82$  years. Out of 83 patients, intestinal tuberculosis was found in 20 (24%) patients (Table 1). Patients were divided into two age group i.e. age group 20-35 years and age group 36-50 years. In age group 20-35 years, out of, 44 (53.01%) patients, intestinal tuberculosis was found in 10 (22.73%) patients. In age group 36-50 years out of 39 (46.99%) patients, intestinal tuberculosis was found in 10 (25.64%) patients. No association ( $P = 0.800$ ) between age and intestinal tuberculosis was found (Table 2). Male patients were 52 (62.65%) and female patients were 31 (37.35%) and intestinal tuberculosis was noted in 13 (25%) male patients and 7 (22.58%) female patients. But insignificant association between gender and intestinal tuberculosis was noticed with p value 1.00 (Table 3). Total 40 (48.19%) patients were malnourished and intestinal tuberculosis was found in

16 (40%) patients. Total 43 (51.81%) patients were properly nourished and intestinal tuberculosis was noted in 4 (9.30%) patients. Significantly (0.001) higher rate of intestinal tuberculosis was noted in malnourished patients as compared to properly nourished patients (Table 4).

**Table No.1: Frequency of intestinal tuberculosis**

Intestinal Tuberculosis	No.	%
Yes	20	24.0
No	63	76.0

**Table No.2: Association of age with intestinal tuberculosis**

Age group	Intestinal tuberculosis		Total	P value
	Yes (%)	No (%)		
20-35	10 (22.73)	34 (77.27)	44 (53.01)	0.800
36-50	10 (25.64)	29 (74.36)	39 (46.99)	
<b>Total</b>	20 (24)	63 (76)	83 (100%)	

**Table No.3: Association of gender with intestinal tuberculosis**

Gender	Intestinal tuberculosis		Total	P value
	Yes (%)	No (%)		
Male	13 (25)	39 (75)	52 (62.65)	1.00
Female	7 (22.58)	24 (77.42)	31 (37.35)	
<b>Total</b>	20 (24)	63 (76)	83 (100)	

**Table No.4: Association of nutritional status with intestinal tuberculosis**

Nutritional status	Intestinal tuberculosis		Total	P value
	Yes (%)	No (%)		
Malnourished	16 (40)	24 (60)	40 (48.19)	0.001
Properly nourished	4 (9.30)	39 (90.70)	43 (51.81)	
<b>Total</b>	20 (24)	63 (76)	83 (100)	

**Table No.5: Association of area of residence with intestinal tuberculosis**

Area of residence	Intestinal tuberculosis		Total	P value
	Yes (%)	No (%)		
Rural	14 (45.16)	17 (54.84)	31 (37.35)	0.001
Urban	6 (11.54)	46 (88.46)	52 (62.65)	
<b>Total</b>	20 (24)	63 (76)	83 (100%)	

Out of 83 patients, 31 (37.35%) patients belonged to rural area and 52 (65.65%) patients belonged to urban area and intestinal tuberculosis was noticed in 14 (45.16%) patients and 6 (11.54%) patients of rural and urban area respectively. Higher rate intestinal tuberculosis was noticed in patients of rural area as compared to urban area with p value 0.001 (Table 5).

## DISCUSSION

Extra-pulmonary tuberculosis (TB) can involve any part of the gastrointestinal tract from mouth to anus, the peritoneum, and the pancreatobiliary system.<sup>10</sup> The clinical presentation of abdominal TB may mimic other common and rare gastrointestinal diseases thus presenting a diagnostic challenge.<sup>11</sup> Abdominal tuberculosis may be present as a complication of advanced pulmonary tuberculosis or may manifest itself without active pulmonary disease.<sup>12</sup> Before the era of effective antitubercular drug therapy, the prevalence of intestinal tuberculosis on autopsies of patients who died with active pulmonary tuberculosis was 55% to 90%.<sup>13</sup> One of the previous studies conducted in Pakistan has shown intestinal tuberculosis as the second leading cause of intestinal obstruction.<sup>14</sup> A patients with gastrointestinal TB can present with an acute abdomen mimicking acute intestinal obstruction and or peritonitis resulting in a diagnostic and management dilemma.<sup>15</sup>

Intestinal and abdominal tuberculosis, like tuberculosis elsewhere in the body affects the young people at the Peak of their productive life, this fact has serious impacts on the national economy and production, as working and productive class of community is replaced by sick and ill individuals.<sup>16</sup>

Mean age of the age range was 20-50 years with mean age 33.88±9.82 years. This is closer to those reported by Gondal et al<sup>17</sup> 29 years and Iqbal et al<sup>8</sup> 25 years.

Patients were divided into two age group i.e. age group 20-35 years and age group 36-50 years. In age group 20-35 years, out of, 44 (53.01%) patients, intestinal tuberculosis was found in 10 (22.73%) patients. In age group 36-50 years out of 39 (46.99%) patients, intestinal tuberculosis was found in 10 (25.64%) patients. No association (P = 0.800) between age and intestinal tuberculosis was found. Seventy three percentages (73%) of the patients in one study were below 40 years. and 45.5% of the patients were between 20–40 years.<sup>16</sup> This is agree with the results of our study.

Male patients were 52 (62.65%) and female patients were 31 (37.35%) and intestinal tuberculosis was noted in 13 (25%) male patients and 7 (22.58%) female patients. But insignificant association between gender and intestinal tuberculosis was noticed with p value 1.00. But Jaskani S et al<sup>18</sup> reported female (59.6%) predominance as compared to male (40.4%).

In our study, out of 83 patients, intestinal tuberculosis was found in 24% patients. In a study by Shaikh et al,

frequency of intestinal tuberculosis is 16%.<sup>8</sup>In one study by Shimy et al,<sup>16</sup> out of 90 patients with acute abdomen 14 patients (15.5%) found with abdominal tuberculosis which is in agreement with our findings. Similarly Iqbal MN et al<sup>19</sup> found 16.19% patients with intestinal tuberculosis after abdominal surgery. Farooq et al<sup>20</sup> reported higher (29.03%) rate of intestinal tuberculosis than our study. Mukhopadhyay et al<sup>21</sup> reported frequency of intestinal tuberculosis as 10%, these findings are not comparable with our findings.

## CONCLUSION

Acute abdominal condition is one of the most common emergencies in trauma room, and acute abdominal tuberculosis is one of common causes of acute abdomen in endemic areas as Intestinal tuberculosis is a common extra-pulmonary Manifestation of tuberculosis. Its incidence is increasing in urban and rural areas due to poverty, under nutrition and overcrowding, Intestinal and abdominal tuberculosis is a systemic disease. Early diagnosis is the key factor in avoiding systemic and local complications of intestinal tuberculosis, and Anti-tuberculous therapy remains main stay of treatment after the surgery as early as possible surgical interference in acute abdominal tuberculosis is important to decrease the prevalence of morbidity and mortality in the patients.

### Author's Contribution:

Concept & Design of Study:	Zulfiqar Ali Shahid
Drafting:	Irfan Ahmad
Data Analysis:	Muhammad Zarak Awais
Revisiting Critically:	Zulfiqar Ali Shahid
Final Approval of version:	Muhammad Zarak Awais & Irfan Ahmad

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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