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Research Article

**EFFICACY OF THE TREATMENT OF ABDOMINAL  
TUBERCULOSIS AND ITS DIAGNOSIS BY DIFFERENT  
DIAGNOSTIC METHODS**<sup>1</sup>Dr. Hamza Babar, <sup>1</sup>Dr. Syed Hassaan Ahmed Bokhari, <sup>2</sup>Dr. Ahmed Muneeb<sup>1</sup>Rawalpindi Medical College, Rawalpindi, Pakistan<sup>2</sup>Army Medical College, Rawalpindi, Pakistan**Abstract:**

**Objective:** To record the experience of observational study on abdominal tuberculosis and to emphasize different diagnostic modalities and the outcome of treatment.

**Study plan:** A retrospective descriptive study.

**Configuration and duration:** In the Surgery Department Unit I Mayo Hospital, Lahore for two years from December 2015 to December 2017.

**Methodology:** This retrospective study was performed in patients with diagnostic TB for 2 years. Patients with prolonged abdominal pain and associated symptoms were included. The final histopathology was diagnosed and TB was started.

**Results:** There were 11 females and 5 males; the mean age was 38.7. Abdominal pain (100%) and ascites (56%) were the most common clinical features. Laparoscopy was diagnostic in 6 patients. Histology confirmed tuberculosis in all patients. All had a satisfactory response to anti-tuberculosis treatment in 3 patients who died due to associated diseases and pulmonary embolism.

**Conclusion:** clinical presentation was not specific; therefore, a high clinical suspicion index is required. Laparoscopy is the most diagnostic method with guided biopsy. Anti-tuberculosis treatment was effective.

**Keywords:** Tuberculous Peritonitis, Abdominal Tuberculosis, Laparoscopy, Ultrasound.

**\*Corresponding author:**

**Dr. Hamza Babar,**  
Rawalpindi Medical College,  
Rawalpindi, Pakistan

QR code



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**INTRODUCTION:**

Abdominal tuberculosis (TB) is rarely found in developed countries, but remains a problem in developing countries. The incidence of abdominal tuberculosis in the Middle East is not well known, but accounted for 16% of all extra pulmonary tuberculosis in Pakistan. Tertiary care hospitals in Pakistan offer healthcare services to a large number of people from different nationalities. Since abdominal tuberculosis can simulate various abdominal disorders, a high clinical suspicion index is necessary to prevent morbidity and mortality due to late diagnosis. While computed tomography is a useful tool among different diagnostic tools, laparoscopy with targeted biopsies provides early diagnosis especially in patients with unexplained exudative diseases. The abdominal TB clinical presentation is useful of different diagnostic modalities and the superiority of laparoscopy in the diagnosis of abdominal TB.

**MATERIALS AND METHODS:**

This retrospective study was performed in patients with diagnostic TB for 2 years at the Mayo Hospital in Lahore. Patients with prolonged abdominal pain and associated symptoms were included. The final histopathology was diagnosed and TB was started. Data were collected in a designed manner. Patient selection criteria were older than 12 patients with prolonged abdominal pain and associated symptoms

were recorded. Departmental protocol was applied for the management of patients with chronic abdominal pain. The final diagnosis was determined by tissue pathology and all were treated following a treatment protocol for abdominal tuberculosis. The patients continued for 9-12 months and their symptoms improved and they gained weight. The patients who died during the observation period were examined and presented in another publication. From July 2015 to July 2017, we retrospectively reviewed the files of patients admitted to Mayo Hospital and Lahore with the diagnosis of Abdominal Tuberculosis. Data evaluated of age, gender, nationality, clinical presentation, diagnostic studies, treatment and results.

**RESULTS:**

During this study, 16 patients were diagnosed with abdominal tuberculosis. The median age was 37 (15-83) and the male: female ratio was 1: 2. Common symptoms were abdominal pain, weight loss, fever, and abdominal distension (Table 1). Four patients presented with acute abdomen, two had ileal perforation and two had acute tuberculosis peritonitis. Three patients died, two of whom died from associated diseases, and one patient died due to pulmonary embolism diagnosed by ECG and spiral thoracic computed tomography (CT) changes. One patient had incisional hernia.

**Table I. Clinical features in 16 patients with Abdominal Tuberculosis**

Symptoms & Sign	No.	%
<b>Abdominal pain</b>	<b>16</b>	<b>100</b>
<b>Weight loss</b>	<b>9</b>	<b>56</b>
<b>Fever</b>	<b>6</b>	<b>37</b>
<b>Abdominal distension</b>	<b>6</b>	<b>37</b>
<b>Vomiting</b>	<b>5</b>	<b>31</b>
<b>Ascites</b>	<b>9</b>	<b>56</b>
<b>Anemia</b>	<b>6</b>	<b>37.5</b>
<b>Guarding</b>	<b>6</b>	<b>37.5</b>

Table 1. Operative findings, procedures and outcome

Operative findings	Total <i>n</i>	SBR <i>n</i>	HC <i>n</i>	Stoma <i>n</i>	Complications, <i>n</i>				ICU admission <i>n</i>	Death <i>n</i>
					ECF	AL	WI/WD	Hernia		
Perforation	13	8	3	10	1	1	2	3	10	7
Obstruction	7	3	3	4	-	1	2	1	1	2
Frozen abdomen	10	-	-	2	2	1	-	1	2	5
Glands/mass	19	-	2	2	-	-	-	-	5	5
Total, <i>N</i>	49	11	8	18	3	3	4	5	18	19

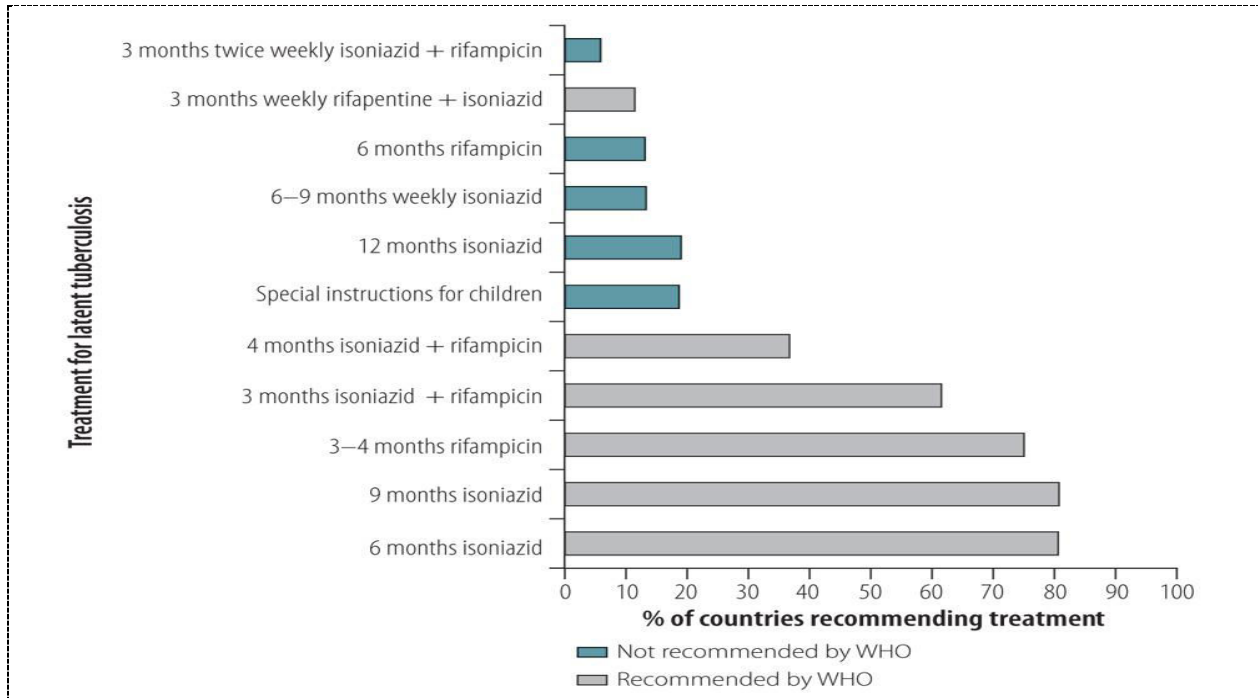
SBR = small-bowel resection; HC = hemicolectomy; ECF = enterocutaneous fistula; AL = anastomotic leak; WI/WD = wound infection/wound dehiscence; ICU = intensive care unit.

TB colitis has been proven in a patient with bleeding in the rectum, colonoscopy and biopsy. A typical clinical presentation of acute appendicitis was presented to a patient, but he had normal appendix and mesenteric lymphadenopathy; Lymphadenitis TB was seen in lymph node biopsy. One patient presented as acute appendicitis, but there was a mass in the ileocecal region during the surgery, right hemicolectomy was performed and histopathological examination revealed ileocecal tuberculosis. The mean hemoglobin was 10.5 g / dl (range 6.8-12.3). Chest radiography was normal in all cases. Analysis of the ascitic fluid in 6 patients revealed an exudative fluid and the smears showed mainly lymphocytes and were negative for acid and rapid bacilli. Abdominal ultrasonography was performed in 12 patients with acute rectal bleeding due to acute appendicitis and in a patient with rectum bleeding, except for two patients who died due to abdominal CT. Abnormal symptoms include: ascites, enlarged mesenteric lymph nodes, thickened omentum and thickened intestines. Nine patients (56%) underwent computed tomography examination because their abdominal ultrasound findings were inadequate.

Six patients (37.5) underwent laparoscopy and directed biopsy. In all six patients, the diagnosis of TB was made based on a combination of multiple white nodules, circulating lymph nodes, ascites, fibrous wires and omental thickening. The diagnosis was confirmed with peritoneal nodules and omentum biopsies. Fourteen patients (87.5) underwent quartet anti-tuberculosis treatment with rifampicin, isoniazid, etambutol and pyrazinamide for 6-9 months. This was in addition to the treatment of concomitant disorders. The response to anti-tuberculosis treatment was good.

#### DISCUSSION:

It is known that abdominal tuberculosis continues as a complication of pulmonary tuberculosis. However, its clinical presentation has changed widely and is not related to the severity of the disease. Abdominal tuberculosis should take into account the differential diagnosis of patients with nonspecific abdominal discomfort. Abdominal tuberculosis is defined as the infection of the peritoneum, hollow or solid abdominal organs with *Mycobacterium tuberculi*. Treatment of Tb is given in Figure 1.



The most probable sites of peritoneal and ileocecal region infection and the spread of hematogenous or infected sputum are most often held by swallowing primary pulmonary tuberculosis. Abdominal tuberculosis accounted for 16% of all extrapulmonary TB in Pakistan, and gastrointestinal TB is the most common type of TB following pulmonary tuberculosis. Peritoneal TB is the most common form of abdominal TB. In most cases, it is the result of reactivation of peritoneal latent TBC foci planted in a healthy primary lung infection in general, while previously radiologically. The most commonly used route is hematogenous spread during pulmonary or active militant tuberculosis. Rare cases are caused by the contiguous spread of tuberculosis lesions of the intestine, abdominal lymph nodes or fallopian tubes. More than 90% of patients are exudative and acidic. Others have a more advanced type of fibro adhesive and offer a typical "paste" belly. Peritoneal tuberculosis is a common acid formation especially in developing countries. With this series, as shown by the actual results or non-acidity of the fever, when changing the pathology of the abdominal clinical symptoms, abdominal pain was found in each case as the main symptom along with more than 50% weight. All other symptoms were nonspecific pain, and in most cases weight loss. As in the literature, the results show that peritoneal TB is a disease of predominantly young adults and slightly more common in women. As reported here, in most cases peritoneal TB has a sneaky onset that lasts for several months. Others, however, reported a higher incidence of acute abdomen (50%) requiring emergency

laparotomy. Emergency service was performed in four cases (25%). At the time of admission, more than 50% of patients had weight loss and acne. These and other clinical features have been reported. In fact, nonspecific symptoms and findings are the hallmarks of TB peritonitis. In this series, increases in clinical examination or ultrasound findings in most cases are reflected in the pathological lesion in peritoneum. The right diagnosis can be difficult to distinguish from another disorder and we usually need more research. The present findings did not show that abdominal CT is a more prominent patonomic TB than ultrasound characteristics, but not as a means to confirm the diagnosis. . Ultrasonography was useful to demonstrate fluid, lymph nodes and thickening of the intestine. It was performed in six patients and all were positive for acetic fluids.

### CONCLUSION:

An explanatory laparotomy may be necessary if the diagnosis is suspected. Our findings prove that laparoscopy with targeted biopsy is an excellent tool for the diagnosis of tuberculosis peritonitis in patients with unexplained exudative ascites and unresponsive imaging findings. All patients in this series responded well to anti-tuberculosis treatment during follow-up between 9 months and 18 months, except for patients who died.

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