

ORIGINAL ARTICLE**Clinical and Laboratory Findings in Patient's with Hepatobiliary Tuberculosis**

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ABSTRACT:

Background: Tuberculous involvement of liver as a part of disseminated tuberculosis is seen in up to 50-80% cases. Indirect involvement of liver in the form of amyloidosis, fatty liver or drug toxicity in tuberculosis (TB) is common. The present study was conducted to assess various cases of HBTB. **Materials & Methods:** It included 320 cases of tuberculosis visited the department for treatment. The presence of hepatobiliary involvement was suspected on the basis of abnormal liver function tests (LFT) and/or imaging findings. In all patients detailed clinical history and clinical examination was done. Liver function tests, viral markers, USG, CT, MRI and histopathology/microbiology & culture for mycobacteria were done as and when required. **Results:** Out of 320 TB patients, 252 did not show any hepatobiliary involvement and only 68 showed hepatobiliary involvement. 40 had hepatobiliary TB (HBTB) and 28 had not. Those who had HBTB, 20 were of biliary TB, 15 were of hepatic TB and 5 were of mixed TB. The difference was non significant ($P>0.05$). Commonly seen symptoms were fever, weight loss, jaundice, hepatomegaly and splenomegaly. Bilirubin, ALT, AST, ALP raised in hepatic, biliary and HBTB cases. **Conclusion:** Hepatobiliary tuberculosis is not uncommon form of tuberculosis. Clinical features and laboratory findings are useful in diagnosis of the disease.

Key words: Hepatobiliary tuberculosis, hepatomegaly, splenomegaly.

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INTRODUCTION

The term abdominal tuberculosis includes tuberculous infection of the gastrointestinal tract, the mesentery, its nodes, and omentum, the peritoneum, and the solid organs related to the gastrointestinal tract, such as the liver and spleen. Genitourinary tuberculosis, which itself is a separate entity is not discussed here. Abdominal tuberculosis is rare in the Western population and is declining in incidence in certain parts of India. In developed countries the disease is largely limited to immigrants from areas of the world endemic for tuberculosis. Strict control of tuberculosis in dairy herds and pasteurization of milk have almost eliminated bovine tuberculosis in many countries; however, despite efforts aimed at effective treatment of tuberculosis, the disease is not uncommon in developing countries.¹ Abdominal tuberculosis is common in gastroenterology practice and with the advent of colonoscopy, laparoscopy and upper gastrointestinal endoscopy, it is easier to make accurate diagnosis and avoid undue delay in management. Tuberculous involvement of liver as a part of disseminated tuberculosis is seen in up to 50-80% cases. Indirect

involvement of liver in the form of amyloidosis, fatty liver or drug toxicity in tuberculosis (TB) is common. In contrast to this, localized hepatobiliary tuberculosis (HBTB) is uncommonly described even in countries like India with high prevalence of tuberculosis.² HBTB can mimic liver tumors, hilar tumors causing biliary obstruction, cholangiocarcinoma, periampullary tumors and liver abscesses. Some patients with hepatic TB can present with pyrexia of unknown origin and liver histology shows caseating granulomas (CG). Hepatic TB can mimic other types of granulomatous hepatitis like sarcoidosis. Hepatic biochemical abnormalities and imaging abnormalities can be encountered in abdominal TB without involvement of the liver due to TB.³ The present study was conducted to assess various cases of HBTB.

MATERIALS & METHODS

This study was conducted in the department of general pathology. It included 320 cases of tuberculosis visited the department for treatment. The presence of hepatobiliary involvement was suspected on the basis of abnormal liver function tests (LFT) and/or imaging findings. Cases with

disseminated or miliary TB, immunosuppression, (HIV) infection, immunosuppressants or organ transplant and cases receiving prior anti-tuberculosis therapy (ATT) were excluded. All were informed regarding the study and written consent was obtained. Ethical clearance was taken from institutional ethical committee. Diagnosis of TB was established based on (1) presence of CG or non-caseating granuloma (NCG) with Langhans giant cells on histology, (2) demonstration of acid-fast bacilli (AFB) on smear or on histological section, (3) positive culture for mycobacteria,

(4) positive guinea pig inoculation, (5) positive polymerase chain reaction for Mycobacterium tuberculosis (TB PCR). In all patients detailed clinical history and clinical examination was done. Liver function tests, viral markers, USG, CT, MRI and histopathology/microbiology & culture for mycobacteria were done as and when required. Results were tabulated and subjected to statistical analysis using chi-square test. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Tuberculosis- 320	
No hepatobiliary involvement (252)	Hepatobiliary involvement (68)
HBTB- 40	
Biliary TB- 20	NO HBTB- 28
Hepatic TB- 15	
Mixed TB- 5	

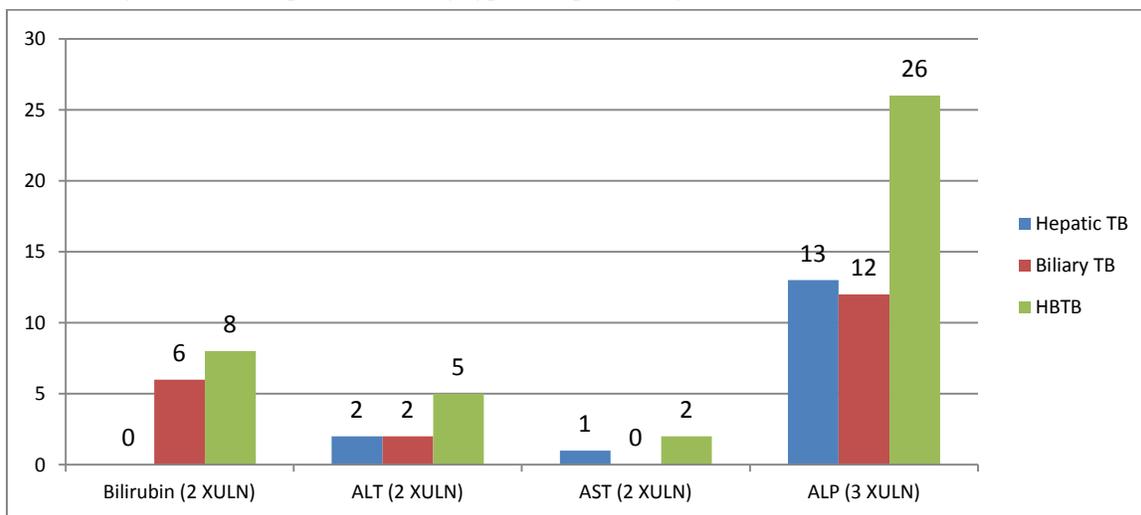
Table I shows that out of 320 TB patients, 252 did not show any hepatobiliary involvement and only 68 showed hepatobiliary involvement. 40 had hepatobiliary TB (HBTB) and 28 had not. Those who had HBTB, 20 were of biliary TB, 15 were of hepatic TB and 5 were of mixed TB. The difference was non significant (P>0.05).

Table II Comparison of clinical features of hepatic and biliary type of hepatobiliary tuberculosis

Characteristic	Hepatic TB (20)	Biliary TB (15)	HBTB (40)	P value
Fever	16	12	30	1
Weight loss	14	10	25	1
Jaundice	1	7	9	0.01
Abdominal pain	10	8	20	0.5
Hepatomegaly	16	3	22	0.01
Splenomegaly	6	4	10	1

Table II shows that fever was seen in 16 cases of hepatic TB, 12 cases of biliary TB and 30 cases of HBTB, weight loss in 14 cases of hepatic TB, 10 cases of biliary TB and 25 cases of HBTB, jaundice in 1 case of hepatic TB, 7 cases of biliary TB and 9 cases of HBTB. The difference was significant (P<0.01). Hepatomegaly was seen in 16 cases of hepatic TB, 3 cases of biliary TB and 22 cases of HBTB, splenomegaly in 6 cases of hepatic TB, 4 cases of biliary TB and 10 cases of HBTB.

Graph I Laboratory features of hepatic and biliary type of hepatobiliary tuberculosis



Graph I shows that bilirubin was 2 fold high in 6 cases of hepatic TB and 8 cases of HBTB. ALT was 2 fold high in 2 cases each in biliary TB, hepatic TB and 5 cases in HBTB. AST was 2 fold high in 1 case of hepatic TB and 2 cases of HBTB. ALP was 3 fold high in 13 cases of hepatic TB, 12 cases of biliary TB and 26 cases of HBTB. GGTP was also 3 fold high in 12 cases of hepatic TB and 9 cases of biliary TB and 24 cases of HBTB.

DISCUSSION

Mycobacterium tuberculosis (TB) usually infects the lungs, called pulmonary TB, but can infect almost any organ in the body, causing an extrapulmonary infection. TB infection of the liver, called hepatic TB, is an extrapulmonary manifestation of an active infection. In 15–20% of active cases, the infection spreads outside the lungs, causing other kinds of TB. These are collectively denoted as "extrapulmonary tuberculosis". Extrapulmonary TB occurs more commonly in immunosuppressed persons and young children. In those with HIV, this occurs in more than 50% of cases.⁴

General signs and symptoms include fever, chills, night sweats, loss of appetite, weight loss, and fatigue. Significant nail clubbing may also occur.⁵ In our study common features were fever was seen in 16 cases of hepatic TB, 12 cases of biliary TB and 30 cases of HBTB, weight loss in 14 cases of hepatic TB, 10 cases of biliary TB and 25 cases of HBTB and jaundice. Hepatomegaly, and splenomegaly were commonly seen in our study. This is in accordance to Hersch C.⁶

Tuberculosis may spread to abdomen by several routes. Ingestion of food contaminated with bacilli may cause primary intestinal tuberculosis. The incidence of this route of infection is decreasing. Secondary intestinal disease arises from swallowed sputum containing the bacilli. Its development is influenced by the virulence and quantity of bacilli ingested and the resistance of the individual to the bacilli.⁷

The peritoneum and mesenteric nodes and the intestine may become infected during the bacteraemic phase that can occur during primary pulmonary tuberculosis. The infecting bacteria may also spread from infected adjacent organs,

such as the fallopian tube.⁸ When the intestine becomes infected by retrograde lymphatic spread from the mesenteric lymph nodes, the nodal disease is considered to be primary and intestinal involvement secondary. This is supported by the fact that the early intestinal lesion is usually found in the submucosa, overlying mucosa being normal. In addition, more advanced lesions with caseation are found often in the mesenteric node rather than in the intestine. The bacteria may also be disseminated in the bile, as they are sequestered and excreted or excreted from granuloma in the liver.⁹

We found that bilirubin, ALT, AST and ALP was many times raised in hepatic, biliary and HBTB cases. This is in accordance to Alvarezj.¹⁰

CONCLUSION

Hepatobiliary tuberculosis is not uncommon form of tuberculosis. Clinical features and laboratory findings are useful in diagnosis of the disease.

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