

Original Article

Analysis of Cases of Tuberculosis in Patients Visiting the Department- A Clinical Study

Devesh Prasad Mishra

Associate Professor, Department of Pulmonary Medicine Hind Institute of Medical Sciences Safedabad Barabanki U.P

ABSTRACT:

Background: The mycobacterium tuberculosis complex (MTBC) comprises nine bacterial species that causes tuberculosis (TB) in mammals such as human beings. Almost one-third of the world's population is infected with TB infection and/or at the risk of TB infection. The present study was conducted to analyze the cases of tuberculosis visiting the department. **Materials & Methods:** This study was conducted in the department of Chest & TB. It included 120 cases which were confirmed by initial screening for standard TB symptoms (cough for > 2 wk, fever for > 2 wk, chest pain, and haemoptysis), have both smear (for acid-fast bacilli, AFB) and culture tests done on the sputum samples collected. A positive case for TB is defined as being positive either by smear and/or culture; and reported an outcome measure – the TB prevalence based on smear and/or culture results. 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 120 patients, males were 80 and females were 40. The difference was significant ($P < 0.05$). Hepatic TB was seen in 50 males and 25 females and biliary TB was seen in 30 males and 15 females. The difference was significant ($P < 0.05$). Common symptoms were fever, weight loss, jaundice, abdominal pain, hepatomegaly and splenomegaly. The difference was non-significant ($P > 0.05$). Bilirubin was 2 fold high in 12 cases of hepatic TB and 6 cases of biliary TB. ALT was 2 fold high in 8 cases each in biliary TB and 4 cases of hepatic TB. AST was 2 fold high in 5 cases of hepatic TB and 8 cases of biliary. ALP was 3 fold high in 25 cases of hepatic TB and 10 cases of biliary TB. **Conclusion:** Cases of tuberculosis have declined over the few years. Common symptoms are fever, weight loss, jaundice, abdominal pain, hepatomegaly and splenomegaly. The level of bilirubin, ALT, AST and ALP was many times raised in hepatic and biliary TB cases.

Key words: Hepatic tuberculosis, Hepatomegaly, Splenomegaly

Received: 15 January 2018

Revised: 16 February 2018

Accepted: 25 February 2018

Corresponding Author: Dr. Devesh Prasad Mishra, Associate Professor, Department of Pulmonary Medicine Hind Institute of Medical Sciences Safedabad Barabanki U.P, India

This article may be cited as: Mishra DP. Analysis of Cases of Tuberculosis in Patients Visiting the Department- A Clinical Study. J Adv Med Dent Sci Res 2018;6(4):80-83.

INTRODUCTION

The mycobacterium tuberculosis complex (MTBC) comprises nine bacterial species that causes tuberculosis (TB) in mammals such as human beings. Almost one-third of the world's population is infected with TB infection and/or at the risk of TB infection. 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.¹

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.²

The incidence and prevalence rates of TB in 2012 were 122 and 169 per lacs people, respectively. It is estimated that only 67% of TB cases have been reported in the year 2012. For example, South Africa is a country with the highest incidence of TB in the world wide, there were 550 cases per lacs population in 2003, 718 cases per lacs population in 2004. 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.³ The present study was conducted to analyze the cases of tuberculosis visiting the department.

MATERIALS & METHODS

This study was conducted in the department of Chest & TB. It included 120 cases of tuberculosis of both genders. The diagnosis of TB was confirmed by initial screening for standard TB symptoms (cough for > 2 wk, fever for > 2 wk, chest pain, and haemoptysis), have both smear (for acid-fast bacilli, AFB) and culture tests done on the

sputum samples collected. A positive case for TB is defined as being positive either by smear and or culture; and reported an outcome measure – the TB prevalence based on smear and/or culture results. All patients were informed regarding the study and written consent was obtained. Ethical clearance was taken from institutional ethical committee.

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.

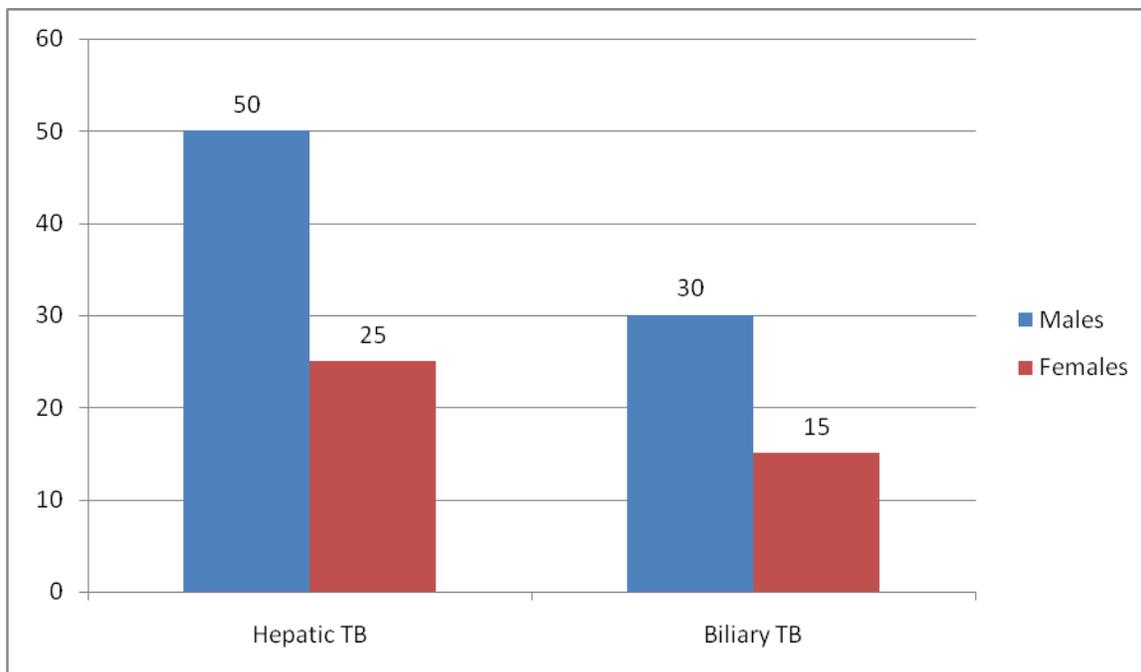
RESULTS

Table I Distribution of patients

Total- 120		
Males	Females	P value
80	40	0.01

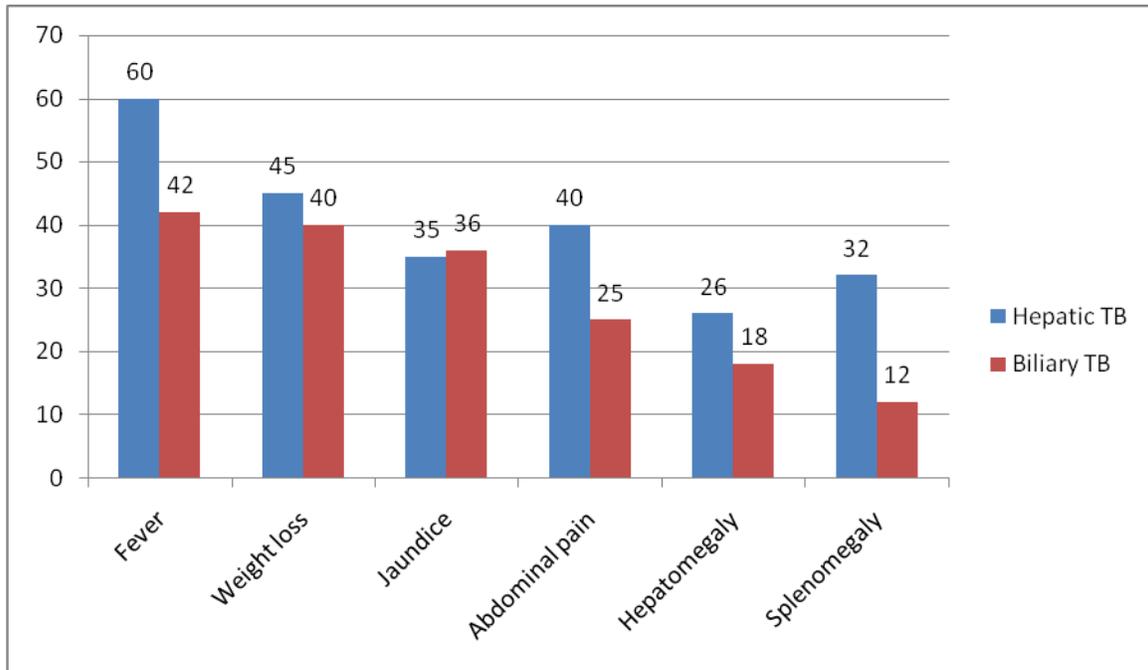
Table I shows that out of 120 patients, males were 80 and females were 40. The difference was significant (P< 0.05).

Graph I Distribution of cases based on type of TB



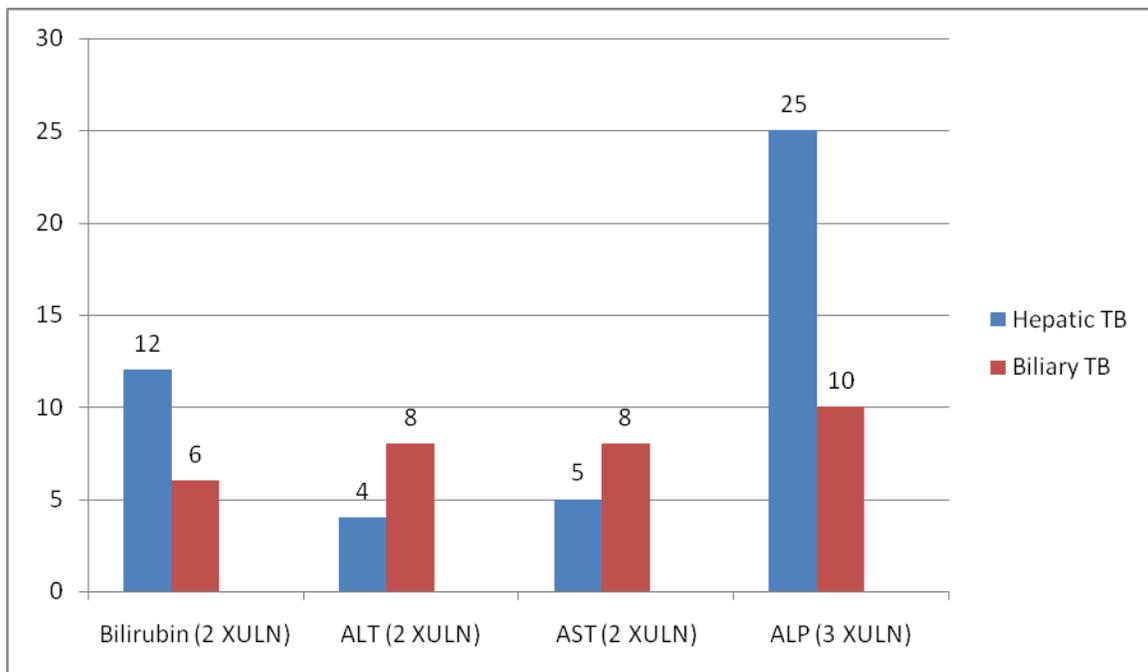
Graph I shows that hepatic TB was seen in 50 males and 25 females and biliary TB was seen in 30 males and 15 females. The difference was significant (P< 0.05).

Graph II Comparison of clinical features of hepatic and biliary type of tuberculosis



Graph II shows that common symptoms in hepatic TB was fever (60), weight loss (45), jaundice (35), abdominal pain (40), hepatomegaly (26) and splenomegaly (32). In Biliary TB, symptoms were fever (42), weight loss (40), jaundice (36), abdominal pain (25), hepatomegaly (18) and splenomegaly (12). The difference was non-significant ($P > 0.05$).

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



Graph III shows that bilirubin was 2 fold high in 12 cases of hepatic TB and 6 cases of biliary TB. ALT was 2 fold high in 8 cases each in biliary TB and 4 cases of hepatic TB. AST was 2 fold high in 5 cases of hepatic TB and 8 cases of biliary. ALP was 3 fold high in 25 cases of hepatic TB and 10 cases of biliary TB.

DISCUSSION

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.⁴

In present study, out of 120 patients, males were 80 and females were 40. 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".⁵

In present study, hepatic TB was seen in 50 males and 25 females and biliary TB was seen in 30 males and 15 females. This is similar to Sharma et al.⁶ 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 symptoms was fever, weight loss, jaundice, abdominal pain, hepatomegaly and splenomegaly. This is in accordance to Mittal et al.⁷

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.⁸

In a study by Megha et al⁹, of 1145 recruited patients with TB, 84% were permanent residents with 88% living in 37 settlements that had complete maps available down to settlement level. Significant high- and low-rate spatial and space–time clusters were identified in two districts. The most likely cluster of high rate from both the purely spatial analysis and the retrospective space–time analysis were from the same geographical area. A significant secondary cluster was also identified in one of the densely populated areas of the study region.

We found that bilirubin, ALT, AST and ALP was many times raised in hepatic and biliary TB cases. This is in accordance to Depoy et al.¹⁰ In a study by Saber et al¹¹,

two hundred patients with TB were enrolled. The average age of cases was 47.51 years and 58.5% of them were males. Age groups of 18-40 and over 60 years old comprised the majority of patients with TB 39.0 and 31.5%, respectively. The median interval time between beginning symptoms and confirmed diagnosis of TB was 56.5 days. The greatest of the time interval of beginning symptoms and diagnosis belonged to the age group of below 7 years old. The greatest time interval from confirmed diagnosis to treatment pertained to the age groups of 18-40 and 7-18, respectively. In terms of pulmonary TB, 120 (80.0%) were smear positive and 30 (20.0) smear negative. In terms of medicines given to the patients with TB, 181 (90.5%) were completed the treatment and improved, 6 (3.0%) absence of treatment, and 13 (6.5%) died as a result of TB and other causes.

CONCLUSION

Cases of tuberculosis have declined over the few years. Common symptoms are fever, weight loss, jaundice, abdominal pain, hepatomegaly and splenomegaly. The level of bilirubin, ALT, AST and ALP was many times raised in hepatic and biliary TB cases.

REFERENCES

1. Benhamou JP. Hepatic granuloma and hepatic sarcoidosis. *Clin Liver Dis* 2000; 4:269-285.
2. Rajan A, Kar P. Hepatic granulomatosis. *J Assoc Physicians India* 2003; 51: 289-96.
3. Guth AA, Kim U. The reappearance of abdominal tuberculosis. *Surg Gynecol Obstet* 1991;172:432-6.
4. Klatskin G. Hepatic granuloma: Problems in interpretation. *Ann NY Acad Sci* 1976;278:427-32.
5. Bowry S, Chan CH, Weiss H, Katz S, Zimmerman HJ. Hepatic involvement in pulmonary tuberculosis. *Respir Dis* 2005; 101:941-8.
6. Sharma et al. Assessment of cases of tuberculosis: A study of 200 cases. *S Afr Med* 1998; 38:857-58.
7. Mittal G et al. Hepatic TB: Problems in interpretation. *Ann NY Acad Sci* 1976; 278:427-32.
8. Ferrell LD. Hepatic granuloma: A morphologic approach to diagnosis. *Surg Pathol* 1990; 3:87-106.
9. MeghaBD, Malhotra N, Garg R, Malhotra V. Granulomatous hepatitis: A retrospective study. *Indian J Pathol Microbiol* 1995; 38:413-6.
10. Depoy et al. Hepatobiliary tuberculosis. *J Gastroenterol Hepatol* 1998; 13:833-9.
11. Saber et al. Study of clinical symptoms and paraclinical signs of Tuberculosis patients hospitalized in Vail- Asr Hospital. *J Arak Univ Med Sci*; 2005; 5(1): 37-41.

Source of support: Nil

Conflict of interest: None declared

This work is licensed under CC BY: *Creative Commons Attribution 3.0 License*.