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Original Research Article

Clinical Profile Analysis of Tuberculosis Patients Attended in a Tertiary Care Hospital in Bangladesh

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Abstract

Background: Despite noteworthy socio-economic development and advances in medical science, tuberculosis (TB) remains a major public health problem. Although it is a curable disease, still millions of people suffer and a large number of patients die from this infectious disease. Now a day, the prevalence and nature of tuberculosis are not in a consistent stage. So we need more current information regarding this issue. ***Aim of the study:*** The aim of this study was to assess the clinical profile of tuberculosis patients attended in a tertiary care hospital in Bangladesh. ***Methods:*** This was a prospective, observational study which was conducted in the department of Medicine, North Bengal Medical College, Sirajgonj, Bangladesh during the period from January 2020 to June 2022. In total 87 diagnosed patients with tuberculosis, treated in the mentioned hospital were selected as the study subjects. Before data collection, proper written consents were taken from all the participants. For data collection a predesigned questionnaire was used in data collection. Collected data were processed, analyzed and disseminated by using MS Excel and SPSS version 23.0 program as per necessity. ***Results:*** In this study, the male-female ratio of the participants was 1.7:1. The highest number of participants were from the 41-50 years' age group which was 27.59%. BMI (Kg/m2) was found ≥18.5 in 61% and < 18.5 was found in 39% of patients. Majority (56%) of the cases were 'non- smoker'. As the types of TB, pulmonary Koch's, CNS tuberculosis, abdominal Koch's, and TB lymphadenitis were found in 43% 21%, 14%, and 13% of participants respectively which was noticeable. In this study, among all the participants, cough and fever were found as two most frequent symptoms which were found in 93% and 84% of patients respectively. ***Conclusion:*** Fever and cough are the two most frequent symptoms in tuberculosis patients. Although the death rate among TB patients is not alarming, the treatment success rate of the first treatment attempt is not satisfactory among tuberculosis patients.

Keywords: Clinical Profile, Tuberculosis, Cough, Fever. Outcome.

INTRODUCTION

Tuberculosis (TB) remains a major public health problem. Though TB is a curable disease, still millions of people suffer from TB every year and a number of them die from this infectious disease. Now a day, the prevalence and nature of tuberculosis are not in a consistent stage. In the year 2017, an estimated 1.3 million people died due to tuberculosis (TB) making it (TB) one of the leading causes of death because of an infectious agent worldwide [1]. The end TB target of the World Health Organization (WHO) is a reduction of 95% in the number of deaths because of active TB between the years 2015 and 2035 [2]. A review study [3] on the risk factors associated with death during anti-TB treatment, included human immunodeficiency virus (HIV) positivity, comorbidities, old age, and use of alcohol and drugs. They also indicated that there are differences in risk factors among regions with low and high incidences of TB. Moreover, the causes of tuberculosis mortality may differ on the phase of anti-TB treatment; however, there are only a few studies reported early deaths, defined as death occurring within

the first 2 (Two) months of anti-TB treatment [4, 5]. One of the major impediments in controlling tuberculosis TB global is the default because of treatment interruption. Repeatedly it has been established that at least one-third of patients do not take the full course of treatment of TB although drugs are available free of charge, treatment is appropriate, and adequate health education is given [6]. Numerous attempts have been taken to assess the extent of problems of "treatment interruption" by patients and to define the reason for it [7, 8]. These include low literacy rate, large family size, lower monthly income, loss of wages, long waiting hours, inconvenient clinic timings, and non-availability of medicines. Other reasons were impolite behavior of staff [9], social stigma [10], social belief and poor information about this disease among patients, and inadequate understanding of the treatment procedures. Besides these, discontinuation may be due to feeling well, the disappearance of symptoms and pain as well as suffering associated with injectable with side effects. It is only natural to enjoy retrieval and stop receiving medication [11].

METHODOLOGY

This was a prospective, observational study which was conducted in the department of Medicine, Northern Medical College, Sirajgonj, Bangladesh during the period from July 2020 to June 2021. In total 87 diagnosed patients with tuberculosis, treated in the mentioned hospital were selected as the study subjects. From all the participants proper written consents were taken before data collection. In accordance with the principles of human research specified in the Helsinki Declaration [12] and executed in compliance with currently applicable regulations and the provisions of the General Data Protection Regulation (GDPR), the whole intervention was conducted [13]. As per the inclusion criteria of this study tuberculosis patients of both gender and several ages, diagnosed at this hospital were included as the study population. On the other hand, according to the exclusion criteria of this study, patients not willing to give consent for the study, patients with MDR-TB and XDR-TB, and cases with congenital tuberculosis were excluded. For data collection, a predesigned questioner was used in data collection. Collected data were processed, analyzed and disseminated by using MS Excel and SPSS version 23.0 program as per necessity.

RESULTS

In this study, among total 87 participants, 63% were male whereas the rest 37% were female. So, male participants were dominating in number and the male-female ratio was 1.7:1. In this study, the highest number of the participants were from the 41-50 years' age group which was 27.59%. Among all the participants, the BMI (Kg/m^2) was found ≥18.5 in 61% and < 18.5 was found in 39% of patients. In this study, among all the participant's majority (56%) were found as 'never smoker'. On the other hand, 9% were 'ex-smoker' and 34% were 'current smoker'. In analyzing the types of TB among participants we observed that, among the highest number of participants, pulmonary Koch's was found which was in 43%. Besides this, CNS tuberculosis, abdominal Koch's, and TB lymphadenitis were found in 21%, 14%, and 13% of participants respectively which was also noticeable. In this study, among all the participants, cough and fever were found as two more frequent symptoms which were found in 93% and 84% of patients respectively. Besides these loss of appetite, loss of weight, hemoptysis, breathlessness, chest pain, and hoarseness of voice were found among 43%, 33%, 20%, 17%, 11% and 3% of patients respectively. In this study, as the final outcome, we observed, 44% (n=38) patients were fully cured. Treatment was continued on 56% (n=47) of patients and occurrence of death was found in 2% (n=2) cases.

Table 1: Distribution of study patients according to age (N=87)

Age	n	%
≤ 20 yrs.	5	5.75%
21-30 yrs.	8	9.20%
31-40 yrs.	14	16.26%
41-50 yrs.	24	27.49%
>50 yrs.	36	41.30%

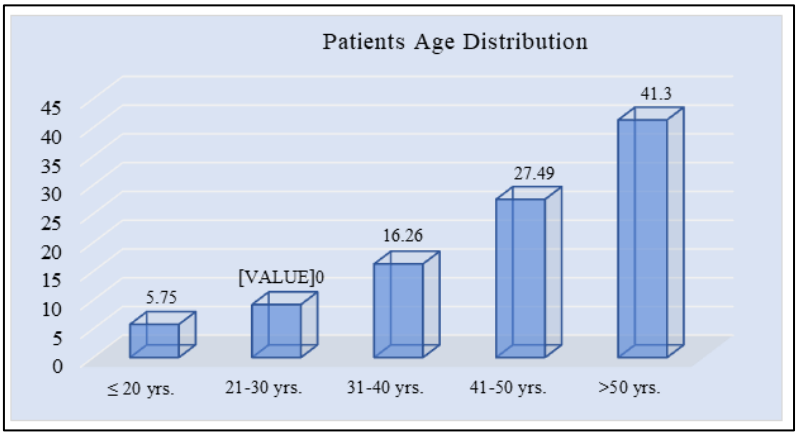

Figure I: Bar chart Showed Age wise respondents, (N=87)

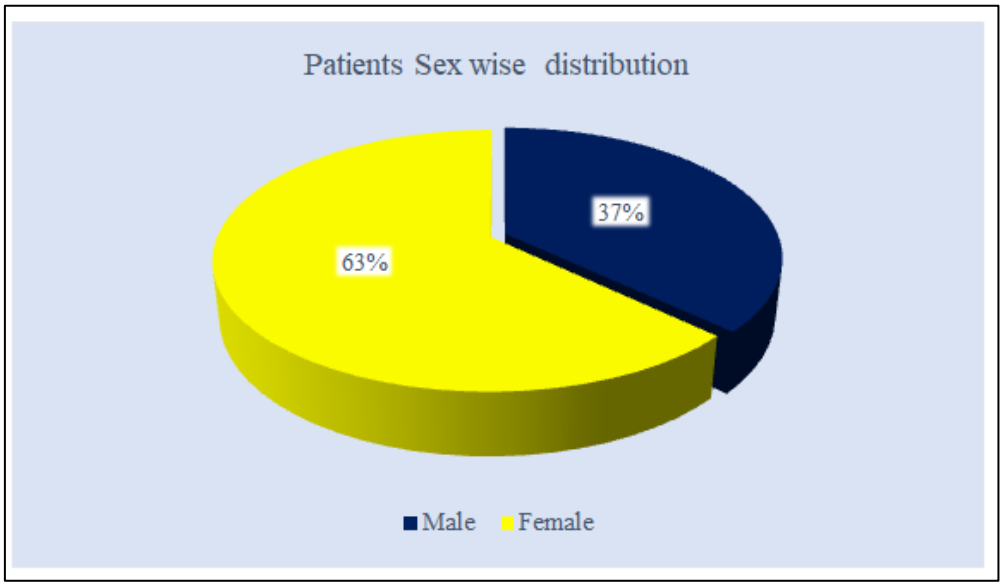

Figure II: Bar chart showed sex wise distribution of patients, (N=87)

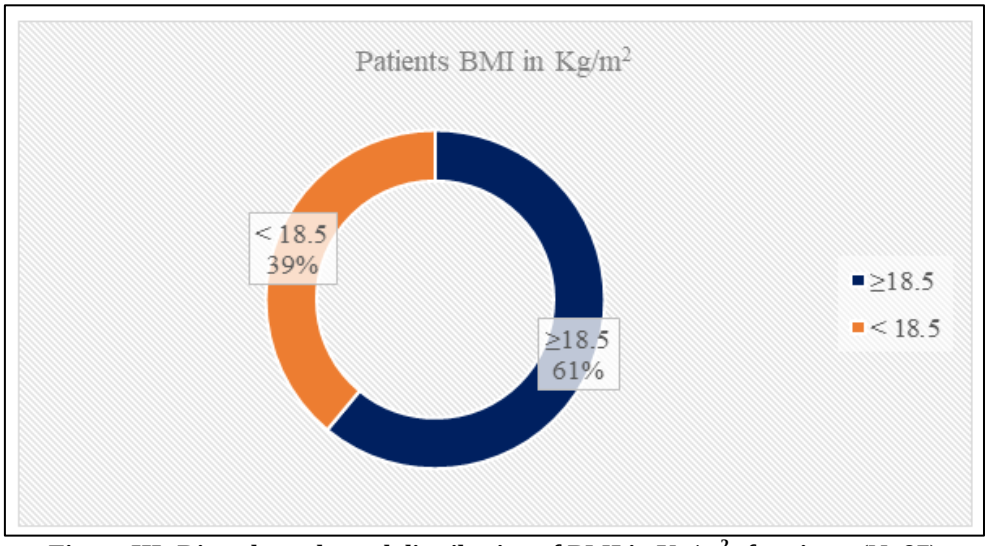

Figure III: Ring chart showed distribution of BMI in Kg/m^2 of patients (N=87)

Table 2: Distribution of the respondents by smoking habit (N=87)

Smoking habit	n	%
Current smoker	49	57%
Non smoker	29	33%
Ex-smoker	9	10%

Table 3: Types of TB among participants, (N=87)

Types	n	%
Pulmonary Koch's	66	76%
TB Lymphadenitis	11	13%
Abdominal Koch's	3	4%
CNS Tuberculosis	2	2%
Disseminated Koch's	2	2%
Miliary TB	2	2%
Skin Tuberculosis	1	1%

Table 4: Symptom distribution among participants, (N=87)

Symptoms	n	%
Cough	81	93%
Fever	73	84%
Loss of appetite	37	43%
Loss of weight	29	33%
Hemoptysis	17	20%
Breathlessness	15	17%
Chest pain	10	11%
Hoarseness of voice	3	3%

Table 5: Biochemical findings among participants, (N=87)

Tests	Mean (±SD) value
Hemoglobin (g/dl)	10.92±1.43
Platelet count (105/mm3)	4.41±1.69
ESR (mm at end of 1 h)	44.13±33.55
White cell count (103/mm3)	12.77±5.21
Lymphocyte (%)	41.97±16.11
SGOT (IU/L)	51.57±29.44
SGPT (IU/L)	32.86±25.14
Albumin (g/dl)	3.9±0.62
TST positive (%)	17.12±4.23

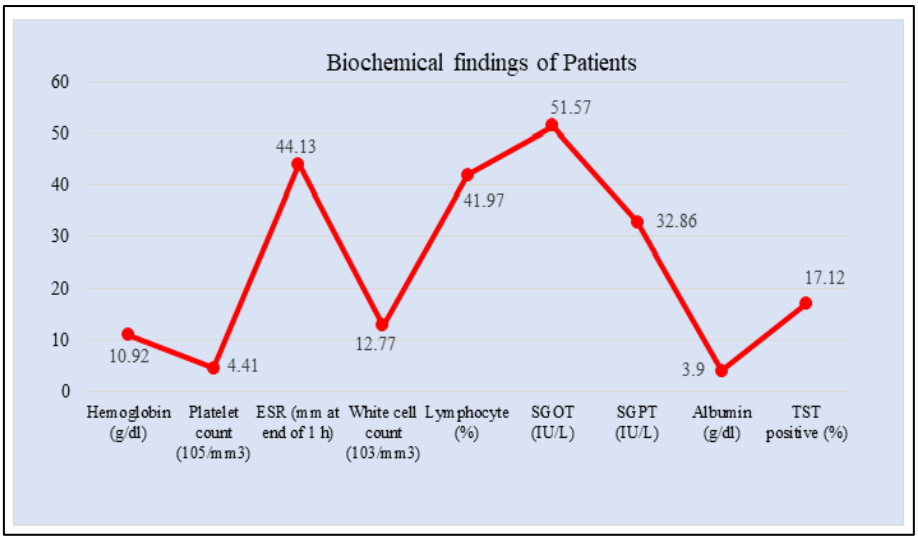

Figure IV: Line chart showed Biochemical findings of patients (N=87)

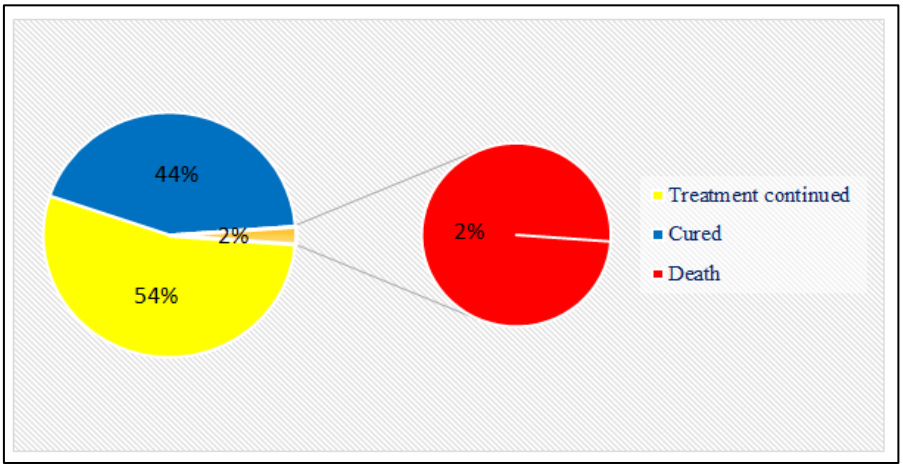

Figure V: Distribution of outcome among the participants (N=87)

DISCUSSION

The aim of this study was to assess the clinical profile of tuberculosis patients in Bangladesh. In this study, 63% of participants were male whereas the rest 37% were female. This distribution was near about similar to a study done in Bhutan where 57% of participants were male and 43% were female [14]. In a similar study, 58.5% of participants were male and 41.5% were female [15]. In this study, among all the participants, majority (56%) were found as 'never smoker'. On the other hand, 9% were 'ex-smoker' and 34% were current smokers. Although several global initiatives address the importance of decreasing malnutrition [16] and smoking [17], which have been related to excess tuberculosis (TB) mortality and such key determinants of TB mortality are still under-emphasized at the country level. An underinvested public health system, especially in the lower-income countries, is another vital issue and has led to a suboptimal cascade of the care for tuberculosis patients [18]. In this study, among the highest number of patients, pulmonary Koch's was observed which was in 42%. Besides this, CNS tuberculosis, abdominal Koch's, and TB lymphadenitis were found among 22%, 14%, and 12% of participants respectively. Another study had 51% patients with extra-pulmonary TB and 49% patients with pulmonary TB and TB lymphadenitis (54%) was the most common type of extra-pulmonary tuberculosis [19]. In a study conducted in India, extra-pulmonary tuberculosis (TB) was found in 63.3% and pulmonary tuberculosis (TB) in 36.7% [20]. In this study, among all the participants, cough and fever were found as two most frequent symptoms which were found in 93% and 84% of patients respectively. Besides these, loss of appetite, loss of weight, hemoptysis, breathlessness, chest pain, and hoarseness of voice were found in 43%, 33%, 20%, 17%, 11% and 3% of patients respectively. In another study conducted in the Philippines, the most frequent symptoms were fever (86.6%), cough (76.1%), weight loss (50.7%), malnutrition (52.3%), anorexia (44.8%), and breathing difficulty (28.4%) [15]. In this study, as the final treatment outcome, we observed, 44% patients were fully cured. Treatment was continued on 54% of patients and 2% death cases were found. In another study, death in 0.6%, defaulted in 2.6%, transferred out: 0.4% were noted [21]. A study conducted in Bhutan had a 93% overall treatment success rate and the death and failure rates were 2% and <1% respectively [22].

LIMITATION OF THE STUDY

This was a single centered study with small sized samples. Moreover, the study was conducted at a very short period of time. So, the findings of this study may not reflect the exact scenario of the whole country.

CONCLUSION & RECOMMENDATION

Fever and cough are the two most frequent symptoms in tuberculosis patients. Although the death rate among TB patients is not alarming, the treatment success rate of the first treatment attempt is not satisfactory among tuberculosis patients. For getting more specific results, we would like to recommend for conducting similar more studies in several places with larger sized samples.

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