Original Research Article

Patient profile and treatment outcome in a tuberculosis unit in Kolkata, West Bengal

Jadab Chandra Sardar[1], Prasanta Ray Karmakar[2]*, Subrata Biswas[3]

[1]Department of Community Medicine, R.G. Kar Medical College, Kolkata, West Bengal, India
[2]Department of Community Medicine, Raiganj Government Medical College & Hospital, Raiganj, West Bengal, India
[3]Ex- Medical Officer, Indian Railways, India

*Correspondence:
Dr Prasanta Ray Karmakar,
E-mail: prasantarayk@gmail.com

ABSTRACT

Background: Tuberculosis is caused by bacteria (*Mycobacterium tuberculosis*) that most often affect the lungs. Tuberculosis is curable and preventable. It is estimated that 1/3rd of current global population is infected asymptomatically with tuberculosis, of which 5-10% will develop clinical disease during life time.
Methods: This descriptive observational study was conducted in Tuberculosis Unit, Bagbazar, Kolkata. Initially demographic data and initial clinical data were collected. Then follow up data were collected until the end of treatment. Data were compiled and analysed. Frequency and percentages were calculated.
Results: Male patients were more (69.12%). Majority (61.76%) of the patients were in the age group of 19-50 years of age, followed by 50-60 years (17.64%). Common presenting complaints were cough (61.76%), fever (63.24%), loss of appetite (54.41%), respiratory distress (11.76%), haemoptysis (10.29%), loss of weight (10.29%), swelling of gland (5.88%). Success rate (treatment completed and cured) was about 90%.
Conclusions: Tuberculosis was found more in male and in active age group. Treatment of tuberculosis had a very high success rate.

Keywords: Clinical profile, Tuberculosis, Treatment outcome, Tuberculosis unit

INTRODUCTION

Tuberculosis is an infectious disease caused by *Mycobacterium Tuberculosis*. The disease primarily affects lung and cause pulmonary tuberculosis. It can also affects intestine, meninges, bone, lymph nodes, skin and other organ. Pulmonary tuberculosis is most important form of tuberculosis.[1]

Tuberculosis (TB) remains a worldwide public health problem despite being a preventable and curable disease. The causative organism was discovered more than 100 years back and effective drugs available since 1940s.[2] It

is estimated that 1/3rd of current global population is infected asymptomatically with tuberculosis, of which 5 - 10% will develop clinical disease during life time. A patient with pulmonary tuberculosis can infect 10 to 13 persons in a year.[2]

There were an estimated 10.0 million new cases of TB disease (also known as active TB) in 2017 which is equivalent to more than 130 cases per 100,000 population. Countries with high incidence of tuberculosis are India, China, Indonesia, Nigeria, South Africa, Bangladesh, Ethiopia, Pakistan.[2] In 2018, an estimated

1.1 million children became ill with TB and 251 000 children died of TB.[3]

India has the highest burden of tuberculosis. Incidence of tuberculosis in India in 2016 was estimated to be 2.8 million out of global incidence of 10.6 million, that means India harbors one fourth of all tuberculosis cases.[2] In India, approximately 2,20,000 death are reported each year due to tuberculosis. Two people die of tuberculosis in every three minutes totaling more than 1000 death per day. One billion (i.e. 1000 million) death occurred due to tuberculosis in India in last 200 years.

Tuberculosis cause huge financial burden in India. The condition become more serious due to emergence of Multi drug resistant (MDR) tuberculosis and also due to strong association with HIV infection. MDR TB is about 2.2% among new pulmonary tuberculosis and about 15% in retreatment cases.[1] The risk of developing tuberculosis is estimated to be 26 to 31 times greater in people living with HIV (PLHIV).[2] Another important co morbidity which is responsible for increased mortality in tuberculosis patients is diabetes.

Low rate of notification is another problem in tuberculosis control in India.[4] So, Government of India declared Tuberculosis to be a notifiable disease in May, 2012.[5]

National Tuberculosis Control Programme was started in 1962. It was reviewed in 1992 and revised national Tuberculosis Control programme stared and it cover the entire nation by 1996. Since then many changes have taken place in tuberculosis control programme. In spite of so many anti TB efforts tuberculosis is still a burning problem in India. More over problem has been complicated by emergence of MDR TB and TB-HIV association.[6]

In this background present study was conducted to study the demographic profile, the clinical profile of tuberculosis patient and treatment outcome in a tuberculosis unit of Kolkata.

METHODS

This descriptive observational study, cross sectional in design was conducted in Tuberculosis Unit, Bagbazar, Kolkata. The study was approved by Institutional Ethics Committee. The Urban health and training centre of R.G. Kar Medical College is served by this Tuberculosis Unit. All new tuberculosis patients enrolled under this unit during January 2016 to June 2016 were included in this study. Retreatment patients were excluded from the study. Total sixty eight patients were included in the study. A pre designed schedule was used to collect data. The schedule was prepared after extensive review of literature and was validated by two experts. After proper permission from Principal of the college data collection was done. Initially demographic and clinical data were

collected. Important variable included were age, sex, presenting complaints, type of tuberculosis, treatment category, presence of diabetes or HIV and initial sputum examination result. Then follow up data were collected until the end of treatment for sputum conversion result and treatment outcome.

Data were compiled in MS Excel spreadsheet and analysed with SPSS version 17. Frequency and percentages were calculated.

RESULTS

All the new tuberculosis patients enrolled in Bagbazar TU were studied. Male patients were more (69%). Majority (61.76%) of the patients were in the age group of 15 - 50 years of age, followed by 50 to 60 years (17.64%). Elderly patients (more than 60 years) constitute 13.24% and only 7.35% patients were in less than 15 years (Figure 1).
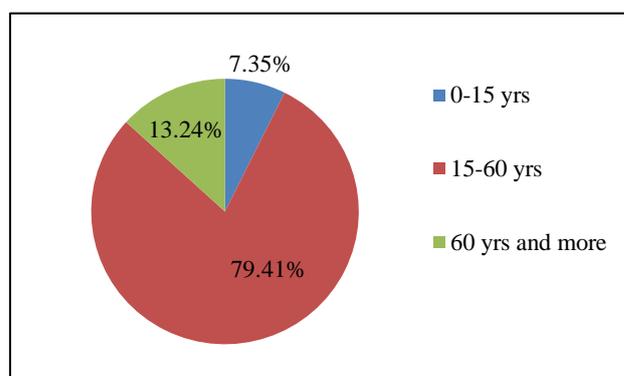

Figure 1: Distribution of tuberculosis patients.

Patients presented with various type of complaints at the time of diagnosis. Common presenting complaints were cough (61.24%), fever (62.24%), loss of appetite (54.41%), respiratory distress (11.76%), haemoptysis (10.29%), loss of weight (10.29%), swelling of gland (5.88%), etc. Many patients had more than one complaint (Table 1).

Table 1: Distribution of patients according to presenting complaints at the time of diagnosis (n=68).

Presenting complaints	Number	Percentage (%)
Cough	42	61.24
Fever	43	62.24
Loss of appetite	37	54.41
Respiratory distress	8	11.76
Haemoptysis	7	10.29
Loss of weight	7	10.29
Swelling of gland	4	5.88
Others	5	7.35

There were multiple responses. Among the patients 69% were categorized as pulmonary and rest 31 percent were

extra pulmonary. On sputum examination 61.76% were positive and 35.29% sputum negative and in 2 (2.94%) sputum was not examined. Among patients 8.8% were co infected with HIV also. Diabetes was present in 11.76% cases.

Almost all the patients (93.65%) gained weight at the end of treatment. But in patient who were HIV positive gain of weight was only in 66.67% patients.

Treatment outcome of the patients are satisfactory. Treatment success rate (treatment completed and cured) was 89.70%. There was no death among the patients. But 4 patients (5.88%) were lost to follow up. One patient (1.47%) was transferred to other unit and two patients (2.94%) were shifted to another category (Table 2). There was no death among the patients in this study.

Table 2: Treatment outcome of patients of the Tuberculosis unit (n=68).

Treatment outcome	Number	Percentage (%)
Cured	38	55.88
Treatment completed	23	33.82
Lost to follow up	4	5.88
Transferred out	1	1.47
Shift to other category	2	2.94
Total	68	100

In case of tuberculosis patients under DOTS at the end of continuation phase only 1.47% of total cases were sputum positive. In case of sputum positive cases after intensive phase sputum conversion rate was 90.47% and at the end of continuation phase the conversion rate was 97.61%.

DISCUSSION

Tuberculosis is curable disease and treatment is available for long years. But tuberculosis still a very important cause for morbidity and mortality throughout the globe. It affects all age group and sexes. In the present study majority of the registered patients were male. In a study conducted in Madurai by Saleem et al, among the patients registered in DOTS centres 74.4% were male.[7]But, in a study among pediatric indoor patients in South India there was female preponderance (57.25%).[8] Another study from Ahmedabad also reported more number of male patients.[9] In another study conducted in tuberculosis unit in Bhopal, Nagar et al also reported more male patients (56.0%).[10]

In the present study majority (61.76%) of the patients were in the age group of 15-50 years of age, followed by 50-60 years (17.64%). Elderly patients (more than 60 years) constitute 13.24% and only 7.35% patients were in less than 15 years. In 2017 in India pediatric TB cases was 6% and in West Bengal it was 4%, But it was higher in a predominantly urban state Delhi (14%).[11] Another

study from Madurai reported pediatric TB more in urban area (10%) compared to rural (7.8%) area.[7]

Tuberculosis primarily affects lung, so it was not surprising that in the present study pulmonary tuberculosis patients was more (69%) than extra pulmonary patients. In other study from Bhopal also majority was pulmonary tuberculosis patients.[10] Karanjekar et al reported from their study in Aurangabad that three fourth were pulmonary tuberculosis.[12] Anuradha et al also reported more pulmonary tuberculosis in their study in pediatric age group.[8]

In the present study common presentation at the time of diagnosis was prolonged cough, prolonged fever and loss of weight. In a study in Bangladesh, common symptoms were chronic cough, low grade fever and night sweat.[13] In a study among patients in a railway hospital in Kolkata coughing and fever were the common presentation.[14] In pediatric age group also predominant symptoms were cough, fever, loss of weight and loss of appetite.[8]

Problem of tuberculosis has been compounded by the presence of different co morbidities. HIV and diabetes are two important diseases which affect the outcome in tuberculosis patients greatly. Co-morbidity like diabetes and HIV infection are reported in tuberculosis patients in different studies. In a study in DOTS centre of Delhi the prevalence of HIV infection was 2.4%, whereas in the present study it was 8.8%.[15] In another study among hospitalized tuberculosis patients in Kolkata prevalence of HIV infection was 12.3%.[13]

Prevalence of diabetes was 11.6% in the present study. In another study conducted by Sharma et al prevalence of diabetes was 13.1%.[16] Prevalence of diabetes was reported to be 11.9% in Bhopal.[10]

Regarding treatment outcome, at the end of intensive majority of the sputum positive cases became negative. In the present study success rate was about 90%. Another study from Rural Health Training Center, Paithan, Aurangabad in DOTS regimen showed treatment success rate which was comparatively lower than the present study and had high default rate.[12] Again in one study from Kerala by Kunoora et al among non-DOTS regimen patient's success rate was still lower.[17]

CONCLUSION

Present study showed tuberculosis spare no ages and it affect both sexes. Tuberculosis patients usually present with few clinical manifestation in majority of the cases. If condition can be diagnosed early chances for progression and complication will decrease. The current treatment under national programme is highly effective and have very high treatment success rate. So, early diagnosis and prompt treatment can control the tuberculosis situation.

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