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The Demographic Profile of Pulmonary TB Patients

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Abstract
Objective: *In this study our main goal is to evaluate the demographic status of pulmonary TB patients.*
Method: *This prospective and observational study was carried out during the period of 1st January 2010 to 31st December 2010, in the Department of Biochemistry, Sylhet M.A.G Osmani Medical College, and DOT centre, Sylhet M.A.G Osmani Medical College Hospital, Sylhet. A total of 76 subjects, both male & female 15 and 60 years of age were included in the study. Out of them 46 were smear positive newly diagnosed pulmonary tuberculosis patient (cases) and 30 were age-matched healthy subjects (control).*
Results: *during the study, mean age of the cases was 33.41 years with a range of 16-55 years. Mean age of the controls was 34.57 years with a range of 18-55 years. Most of the patients were male, 63%. Most of the patients passed only primary level of the education, 41.3%. Mean (±SD) body weight in Kg and BMI in Kg and BMI in Kg/m2 of cases at diagnosis and at two months of anti-TB therapy were 41.76(±5.53), 17.08(±1.87) and 43.02(±5.48), 17.56(±1.88) respectively.36.96% were smoker, 21.74% were tobacco leave user.*
Conclusion: *Pulmonary Tuberculosisis one of the major public health problems in Bangladesh. So, the proper diagnosis of the disease status, prevention and control of TB is very essential.*
Keywords: *Pulmonary Tuberculosis, mycobacterium tuberculosis, demographic status.*

Introduction

Tuberculosis (TB) is a major global public health problem in Bangladesh. Nearly one third of the global population is infected with mycobacterium tuberculosis and thus at risk of developing the disease.[1] More than nine million people develop active TB every year and about two million die; furthermore, more than 90% of global TB cases and deaths occur in the developing world, where 75.0% of cases are in the most economically productive age group.[2] Tuberculosis is caused by infection with Mycobacterium tuberculosis, which is part of a complex of organisms including M. bovis and M.africanum.[3] It continues to be the major cause of disability and death worldwide. The estimates of the global burden of disease caused by TB in 2009 were 9.4 million incident cases and 14 million prevalent cases[5]. In 2009, approximately 1.7 million people died of TB.

Among 22 High-burden countries (HBC), Bangladesh ranked 6th position.[4] A high proportion (81%) of notified cases were sputum smear-positive in Bangladeshi.[5] Therefore, early diagnosis and completion of treatment is necessary for total cure and prevents transmission in the community.

In this study our main goal is to evaluate the demographic status of pulmonary TB patients.

Objective

- To assess the demographic status of pulmonary TB patients.

Methodology

Study Type: This was a prospective and observational study.

Study Place and Period: This study was conducted during the period of 1st January 2010 to 31st December 2010, in the Department of Biochemistry, Sylhet M.A.G Osmani Medical College, and DOT centre, Sylhet M.A.G Osmani Medical College Hospital, Sylhet.

Study Population: A total of 76 subjects, both male & female 15 and 60 years of age were included in the study. Out of them 46 were smear positive newly diagnosed pulmonary tuberculosis patient (cases) and 30 were age-matched healthy subjects (control). Cases were selected purposively from DOT center of Sylhet MAG Osmani Medical College Hospital after diagnosed as new smear positive pulmonary tuberculosis patients & controls were selected from healthy volunteers.

Sputum smear negative pulmonary tuberculosis patient or patients having history of taking anti-TB drugs or patients of pulmonary TB with associated connective tissue disorders are excluded from the study.

Method: Detailed history, clinical examination and laboratory data were recorded. Then blood sample was collected from all the subjects after informed written consent. Blood samples were tested for C-reactive protein. After two months of starting anti-tubercular therapy when patient came for follow up again laboratory data were recorded and blood sample was collected for ESR and C-reactive protein. CRP was also evaluated only once, in the group of healthy control. Serum C-reactive protein (CRP) concentration was measured by immunonephelometric method & Erythrocyte sedimentation rate (ESR) was determined in Westergren's method.

As a comparative index of response to treatment sputum microscopy for AFB were tested on two occasions- before starting and after two months of treatment. Reporting of sputum smear:

1-9 AFB per 100 oil immersion fields: To mention the exact number (Scanty)

10 -100 AFB per 100 oil immersion fields: 1+

1-10 AFB per oil immersion fields: 2+

>10 AFB per oil immersion fields: 3+

Data Analysis: All data were analyzed with the help of SPSS for windows version 15, using the relevant tests of significance such as Student's 't'-test, Pearson correlation analysis was done to elucidate association between variables. P value < 0.05 was taken as level of significance.

Results

In table-1 shows distribution of the patients according to demographic status. Mean age of the cases was 33.41 years with a range of 16-55 years. Mean age of the controls was 34.57 years with a range of 18-55 years. Most of the patients were male, 63%. The following table is given below in detail:

Table 1: Distribution of the patients according to demographic status

Groups	Age in years	Age range (Years)	t-value	p-value
Case (n=46)	33.41 ± 11.1	16—55	0.447	< 0.657
Gender	Male	Female		
	63%	37%		

In table-2 shows distribution of the patients according to educational status where most of the patients passed only primary level of the education, 41.3%. The following table is given below in detail:

Table-2: Distribution of the patients according to educational status

Educational Status	%
Illiterate	19.6
Primary	41.3
Secondary	26.1
Graduate and above	13

In figure-1 shows tobacco use status of the patients where 36.96% were smoker, 21.74% were tobacco leave user. The following figure is given below in detail:
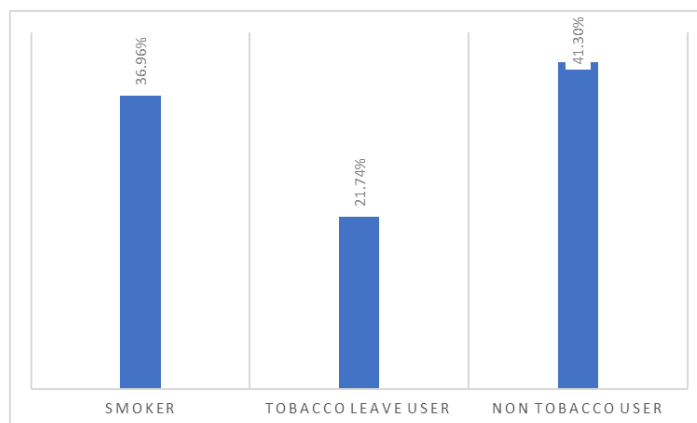

Figure-1: Tobacco use status of the patients

In table-3 shows comparison of weight and BMI of the cases at diagnosis and after two months of starting anti-TB treatment where mean ($\pm$SD) body weight in Kg and BMI in Kg and BMI in Kg/m^2 of cases at diagnosis and at two months of anti-TB therapy were 41.76($\pm$5.53), 17.08($\pm$1.87) and 43.02($\pm$5.48), 17.56($\pm$1.88) respectively. The following table is given below in detail:

Table 3: Comparison of weight and BMI of the cases at diagnosis and after two months of starting anti-TB treatment

Parameter	At diagnosis	At two diagnosis	t-value	p-value
Weight, Kg	41.76($\pm$5.53	43.02($\pm$5.48),	13.96	<0.001
BMI, (Kg/m2)	17.08($\pm$1.87)	17.56($\pm$1.88)	9.11	<0.001

Discussion

In one study reported that, majority of the patients n = 32 (40%) were between21-30 years age group followed by 31.2% in 12-20years age groups. So 71.2% of patients are under 30years of age, which is similar to observation of another study.[5-6] There is overall preponderance of female (56.3%) as compared to male (43.7%). But another study showed 62% were male and 38% were female[6]. Another study reported 55% male and 45% female. [7]

Another report said that, out of 330 patients, 98 (29.69%) were found positive for Mycobacterium spp. and 212 (64.24%) were male and 118 (35.26%) were female. Among the males 69 (70.41%) were infected while, 29 (29.60%) females were found infected. The ratio of the prevalence of TB between male and female was 2.4:1.[8]

The highest prevalence (18.37%) was observed in 20-24 age group followed by 17.35% in age group of 25-29. The lowest prevalence (3.06%) was observed in the 55-59 age group patients.

Where as in our study, mean age of the cases was 33.41 years with a range of 16-55 years. Mean age of the controls was 34.57 years with a range of 18-55 years. Most of the patients were male, 63%. Most of the patients passed only primary level of the education, 41.3%. So, it can be estimated that, because of less education there can be a less knowledge of pulmonary TB.

Conclusion

Tuberculosis is one of the major public health problems in Bangladesh. So, the proper diagnosis of the disease status, prevention and control of TB is very essential.

References

1. Medical Research Council. National Survey of Tuberculosis Notifications in England and Wales in 1983: characteristics of disease. Tubercle, 1987; 68: 19-32.

2. Medical Research Council Cardiothoracic Epidemiology Group. National survey of notifications of tuberculosis in England and Wales in 1988. Thorax, 1992; 47: 770-5.

3. Weir, M. R. and Thornton, G. F. Extra Pulmonary Tuberculosis.Am. J. Med. 1985; 79: 467-78.

4. Pitchenik AE, Fertel D, Bloch AB. Pulmonary effects of AIDS: Mycobacterial disease-epidemiology, diagnosis, treatment, and prevention. Clin. Chest Med. 1988; 9: 425-41.

5. Wolinsky E.Tuberculosis, Wyngaarden JB, Smith LHeditors. In Cecil Textbook of Medicine, 18th edn. W. B.Saunders, Philadelphia 1988; 2: 1682-92.

6. Faiz MA. Extrapulmonary tuberculosis in Bangladesh -Areview of 47 case. J Bangladesh Coll Phys and Surgeon 1990;7: 1-7.

7. Alvarez S and McCabe WR. Extrapulmonary tuberculosis revisited: A review of experience at Boston city and otherhospitals. Medicine, 1984; 1: 25-55.

8. Farer LS, Lowel AM and Meador MP. Extrapulmonary tuberculosis in the United States. AM J Epidemiol, 1979;109: 205-217.