Sociodemographic Distribution of Pulmonary Tuberculosis Amongst Patients - A Hospital Based Study

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A B S T R A C T

Introduction: There has been a drastic progress in the management of tuberculosis over last 10 decades but still it is a major issue of concern in many developing countries affecting majority of poor communities.The main aim of the present study was to study the demographic distribution of subjects with pulmonary tuberculosis amongst subjects of Punjab district.
Material and methods: The present prospective study was done in the department of Chest and tuberculosis of GMC Patiala during a period of 2 years. The study included all the subjects suspected of pulmonary tb who were sputum smear negative by Ziehl Neelsen method. All the subjects irrespective of demographics, socioeconomic status and dietary habits were included in the study.A sample of sputum was obtained from the subjects and analysed for tubercle bacilli. The results were expressed as percentage of the data.
Results: There were 10% (n=4) subjects who were 11-20 years of age. The male to female ratio was 3:1.There were 92.5% (n=37) subjects belonging to poor income group.
Conclusion: From the above study it can be concluded that subjects of poor socioeconomic status are generally affected by tuberculosis

Key words: Punjab, Socioeconomic, Tuberculosis

INTRODUCTION

Tuberculosis is a major public health problem with great antiquity.[1] There has been a drastic progress in management of tuberculosis over last 10 decades but still it continues to be a public health problem more so in the under developed nations affecting majority of poor communities. It has affected 1.7- 2 billion humans and was responsible for 30 million deaths in the year 1990s. It is the oldest disease that is afflicting the mankind and known since time immemorial. It is a completely curable and preventable disease but still a vast majority of people have been affected and died because of this, making it an important socio economic problem.[2] According to world health organisation, it is regarded as a public health emergency since 1993.[3-6] It is caused by bacilli called Mycobacterium tuberculosis.tuberculosis may be pulmonary tb or extra-pulmonary tb. It can occur in any part of body including bones, joint, glands, skin etc. it affects the lungs primarily and pulmonary tuberculosis is responsible for 80% of the cases of tuberculosis. The mode of transmission is basically air borne through droplet infection by tubercle bacilli. These get lodged into the terminal bacilli infecting the alveoli and then lungs.[7] It has been seen that a person with sputum positive for tubercle bacilli can affect 10-15 subjects in a year if that person is left untreated.[8]
The main aim of the present study was to study the demographic distribution of subjects with pulmonary tuberculosis amongst subjects of Punjab district.

MATERIAL AND METHODS

The present prospective study was done in the Department of Chest and TB during a period of 2 years. The study included all the subjects admitted to the Chest and TB Hospital of Govt Medical College, Patiala. Subjects with features Suggestive Pulmonary Tuberculosis i.e. cough, fever, anorexia, loss of appetite and night sweats were included in the study. A total of 40 patients with both clinical and radiological evidence of respiratory infection were included. All the subjects irrespective of demographics, socioeconomic status and dietary habits were included in the study. Pregnant and lactating mothers, children, subjects with recent MI, unstable angina, hemoptysis, pleural effusion or subjects taking antibiotics were excluded from the study. All the patients were informed about the study and a written consent was obtained from all in their vernacular language. A sample of sputum was obtained from the subjects and analysed for tubercle bacilli.

STATISTICAL ANALYSIS

All the data was arranged in a tabulated form and analysed. The results were expressed as percentage of the data.

Age group	No. of cases	Percenatge
0-10 years	Nil	Nil
11-20 years	4	10%
21-30 years	5	12.5%
31-40 years	2	5%
Above 40 years	29	72.5%
Total	40	100%

Table-1: Showing age distribution

Socio economic class	No. of cases	Percentage
Poor income group	37	92.5%
Middle income group	3	7.5%
High income group	0	0
Total	40	100%

Table-2: Showing socio economic distribution
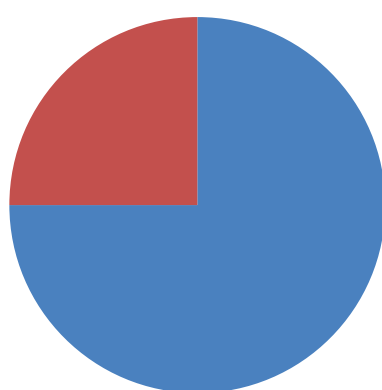
■ Male ■ Female

Graph-1: Showing gender distribution percentage of subjects

RESULTS

The study included a total of 40 subjects. The mean age of the subjects was 39.89 +/- 8.33 years. Table 1 shows the age distribution of the study group. There were 10% (n=4) subjects who were 11-20 years of age. There were 12.5% (n=5) subjects between 21-30 years of age. There were only 5% (n=2) subjects between 31-40 years of age. Maximum number of subjects was above 40 years of age. There were 72.5% subjects in this age group.

Graph 1 shows the gender distribution of the subjects. There were 75%(n=30) males and rest 25%(n=10) females. The male to female ratio was 3:1.

Table 2 shows the socioeconomic distribution of the subjects. There were 92.5% (n=37) subjects belonging to poor income group. There were 7.5% (n= 3) subjects who belonged to middle income group. There was no subject in high income group.

DISUCSSION

Pulmonary tuberculosis is responsible for 80% of the cases of tuberculosis. The mode of transmission is basically airborne through droplet that is infected by tubercle bacilli. There have been 8.8 million cases of tuberculosis every year and this leads to approximately 100 new cases of tuberculosis in every hour. According to American Thoracic Society

Committee there have been 52000 deaths due to tuberculosis every week.[9,10] In a country like Nigeria, there is a quarter of million cases tuberculosis that is active. (Dosumu, 1998) It ranks 4th amongst the top 22 countries of the world with the highest burden of TB. (World Health Organization Global Report, 2005). According to our study, There were 10% (n=4) subjects who were 11-20 years of age. There were 12.5% (n=5) subjects between 21-30 years of age. There were only 5% (n=2) subjects between 31-40 years of age. Maximum number of subjects was above 40 years of age. There were 72.5% subjects in this age group. There were 75%(n=30) males and rest 25%(n=10) females. The male to female ratio was 3:1. In India Jharkhand is one of the few states with highest TB burden. Approximately 35 people die each day with tuberculosis in the state.[11]

In a study conducted by Phalke Deepak Baburao et al[12] amongst the subjects reporting to Prabara rural hospital, majority of the subjects affected by tuberculosis were males. There were 66% males and rest females. In a similar study conducted by Aarti Kaulagekar et al[13] who assessed the tuberculosis subjects and found that there were 57.8% males and 42.2% females. In our study, There were 92.5% (n=37) subjects belonging to poor income group. There were 7.5% (n= 3) subjects who belonged to middle income group. There was no subject in high income group. From the above study it is clear that poor education associated with poor socio economic status leads to lack or and poor knowledge about tuberculosis and hence increased risk of infection. They also do not have good access to the health care services. There is lack of healthcare services in the rural areas, which accounts for high tuberculosis cases. In a study conducted by Gupta et al[14] approximately 91.4% patients were residents of rural area and 7.7% of patients were residents urban area. In a study conducted by Haider S et al(24) there were 89.3% of subjects from rural area and the disease was found to be more in younger age group and in subjects of poor socio-economic group[15] An annual decline in TB incidence has been seen which may account for 35% reduction by TB deaths in the year 2020. The case fatality ratio will be reduced from 17% in 2015 to 10% by 2020. The countries like Brazil, the Russian Federation, India, China and South Africa, collectively account for about 50% of the globe's TB cases, they rely on domestic funding for management. As per WHO-baseline national surveys should be conducted for the assessment of the nature and severity of TB patient cost, and to improve the service delivery and protection. In 2015, one such survey was conducted and in 2016 8 surveys were being conducted and by the year 2017-2018 10 surveys are planned.[16]

CONCLUSION

From the above study it can be concluded that subjects of poor socioeconomic status are generally affected by tuberculosis. There is lack of knowledge amongst the subjects and there is lack of health care services leading to high incidence of tuberculosis amongst them.

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