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ORIGINAL ARTICLE

SEQUELAE OF PATIENTS TREATED FOR PULMONARY TUBERCULOSIS IN CHEST CLINIC, TIKUR ANBESSA SPECIALIZED HOSPITAL (TASH), ADDIS ABABA, ETHIOPIA

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ABSTRACT

Background: *Pulmonary tuberculosis (PTB) is one of the most common infectious diseases worldwide, and contributes significantly to morbidity and mortality in developing countries. Despite availability of effective treatment, a significant number of patients suffer from permanent lung damage, which predisposes patients to numerous pulmonary complications.*

Objective*: To assess chronic sequelae of patients treated for PTB in a chest clinic at Tikur Anbessa Hospital*

Methods: *This was a retrospective, cross-sectional analysis of patients registered in a clinical database at the chest clinic of Tikur Anbessa specialized Hospital between January and December 2013. Patients with a history of pulmonary tuberculosis treatment were identified and included in the analysis.*

Results: *Among all patients having follow-up at the chest clinic of TASH during the study period, 134 (18.5%) presented with chronic pulmonary complications of TB. Seventy two patients (54%) were male, and the mean and median ages were 40 and 37 years, respectively. Of the study population, 83 (61.9%) patients had clinically significant parenchymal scarring and fibrosis, 40 (29.9%) had bronchiectasis, 5(3.7%) had Aspergilloma, 4(3%) had granuloma/calcification, one patient (0.7%) had pleural thickening, and one patient (0.7%) underwent pneumonectomy during the study period.*

Conclusions: *Fibrosis and bronchiectasis were the most common pulmonary complications of tuberculosis among patients encountered at the TASH chest clinic during the study period. This demonstrates the impact of pulmonary tuberculosis is beyond management of active disease.*

Keywords*: Sequelae, PTB, chest clinic ,* TASH

INTRODUCTION

Tuberculosis (TB) infection, most commonly manifested as pulmonary disease, has high morbidity and mortality worldwide. (1) WHO estimates that 9 million people developed active tuberculosis in 2013 and 1·5 million people died from it.(2) Ethiopia is one of the TB high burden countries in the world. The national population based TB prevalence survey conducted in 2010-11 revealed that the prevalence of sputum smear-positive TB among adults and all age groups was 108 and 63 per 100,000 population, respectively. (3) Delays in the diagnosis of TB and presence of extensive residual lung lesions lead to increased lung damage and more frequent co-morbidities and impairment of quality of life. (4,5).

Many Patients previously treated for Pulmonary TB had residuallesions remaining, resulting in pulmonary sequelae characterized by impairments in the bronchial and parenchymal structure. These structural changes include broncho-vascular distortions, bronchiectasis, emphysema, fibrosis and reduction of total lung capacity. (6,7) These patients may also have limited exercise tolerance and significant disability affecting daily activities. (8-12) Late sequelae of tuberculouspleuritis includes chronic persistent pleural effusion, empyema, bronchopleural fistula, pleural malignancy, fibrothorax and pleural thickening which may be associated with extensive calcification. (13, 14)

Assessment of functional status in individuals with disabilities is the standard of care for many chronic diseases, but this is seldomly studied for post-tuberculosis complications. Numerous patients are being followed for post-TB complications in the chest clinic of TASH. The current study evaluated the chronic sequelae of pulmonary tuberculosis in this clinic.

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MATERIALS AND METHODS

This is a retrospective, cross-sectional study conducted at the chest clinic of TASH in Addis Ababa, Ethiopia. All patients evaluated at the outpatient chest clinic of TASH are registered in a clinical database. Patients seen between January to December of 2013 were included in the study. The clinical database used in this study included demographic data, pulmonary diagnoses, and patient comorbidities. Only those subjects previously receiving a full course of anti-TB treatment for Pulmonary Tuberculosis, with radiographic evidence of sequelae of prior TB described by a radiologist and who had no feature of currently active pulmonary TB were included in the study. Ethical approval for the study was obtained from the research ethics committee of College of Health Science, Addis Ababa University.

Descriptive statistics were used to define the data; this included mean and standard deviation for numeric variables, and frequency with percentages for categorical variables.

RESULTS

A total of 734 patients were seen at least once at the chest clinic of TASH from January to December 2013. Nine patients had missing data, and were excluded, leaving a total of 725 patients. Among the 725 patients, 134(18.5%) had a diagnosis of post TB sequelae/complication by imaging which was commented on by a radiologist; these were further analysed.

Table 1 shows that among patients with post TB sequelae/chronic complication, seventy two (53.7%) of the patients were males. The mean and median ages were 40 and 37 years, respectively. Most patients (27.6%) fell between the ages of 35-44, whereas 26.1% of the patients were aged 25-34 years; those above 65 years constituted only 6.7% of the clinic cohort. Diagnosed sequelae included: eighty three (61.9%) patients with post TB fibrosis,40 (29.9%) with post TB bronchiectasis, five (3.7%) with Aspergilloma, four (3.3%) with post TB granulomas or calcification, one (0.7%) with pleural thickening, and one (0.7%) requiring a pneumonectomy for tuberculosis related lung destruction during the study period. In all age groups, post TB pulmonary fibrosis and post TB bronchiectasis were the most common diagnoses in patients who were previously treated for pulmonary TB. (Figure 1)

Post TB fibrosis and post TB bronchiectasis were predominately seen in females but asperilloma and post TB granuloma and calcification were more common in male as compared to female. (Figure 2)

Table 1. Socio-demographic characteristics of the study population

Socio-demographic Characteristics		Number	Percentage (%)
Sex	Male	72	53.7
	Female	62	46.3
Age range in Years	12-24	18	13.4
	25-34	35	26.1
	35-44	37	27.6
	45-54	20	14.9
	55-64	15	11.2
	≥65	9	6.9
Evidence of Post TB sequelae in Previously TB treated patients, on imaging	CXR,CT-Scan of Chest Commented by radiologist as sequelae	134	100%

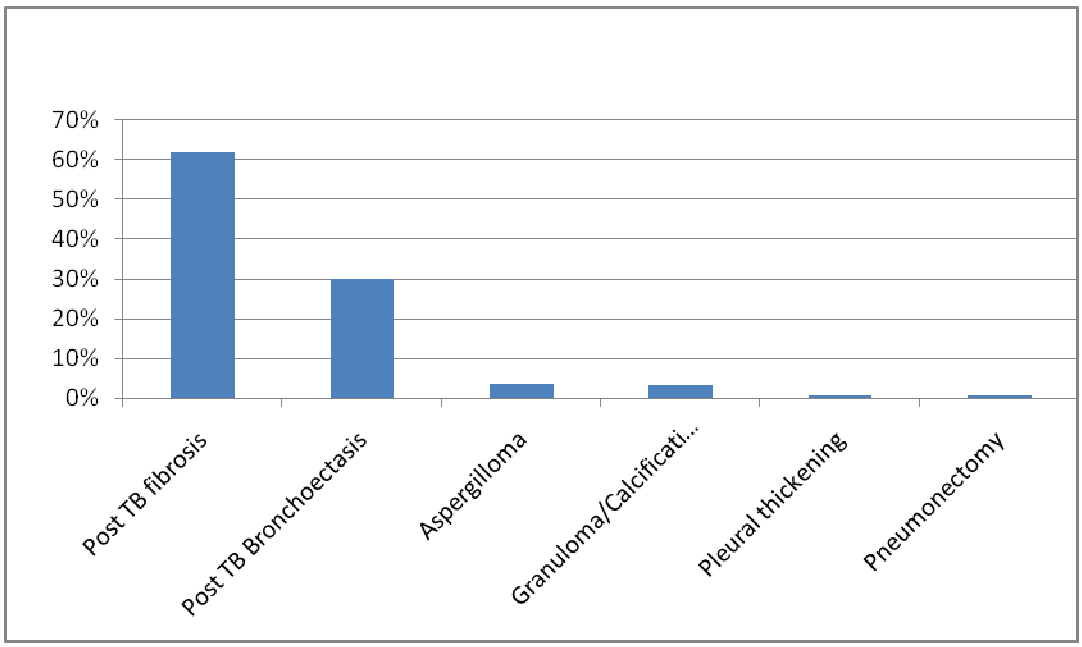

Figure 1. Percentage of Types of post TB sequelae

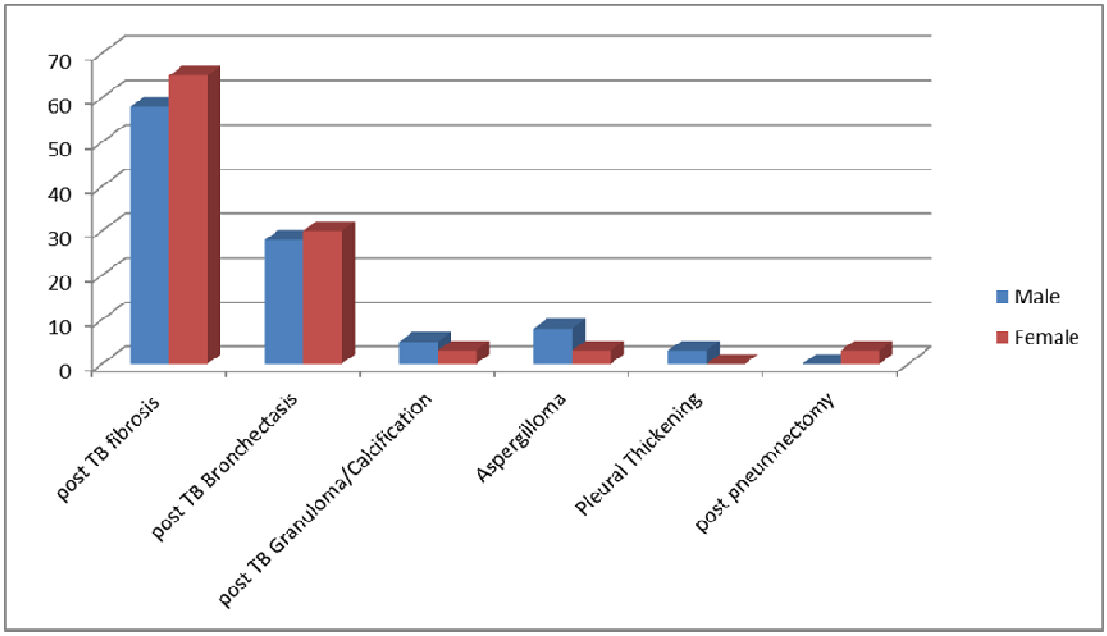

Figure 2:Numbers of cases of Post TB Sequelae stratified by type and gender

DISCUSSION

With current short course chemotherapy (SCC) regimens, the majority of the patients with tuberculosis can be cured of the disease; however, long term sequelae remain largely un described in the literature. A limited number of studies have documented that between 30 to 47% of patients treated for pulmonary TB continue to have respiratory symptoms at the end of treatment, 40% after one year of treatment and 15.9% after two and half years after treatment. (15-22)

Among all patients seen at chest clinic of TASH during the study period, 134 (18.5%) patients had a diagnosis of post TB complications, namely bronchiectasis, parenchymal fibrosis, pleural thickening, aspergilloma, and need for pneumonectomy. The majority of patients were men and between the ages of 25-44 years which reinforces the notion of TB as a disease affecting mostly reproductive aged adults. Of all patients, parenchymal fibrosis and bronchiectasis were the most common complications. The presence of post TB sequelae in our patients may reflectlate entry into the medical service and also may have had advanced disease at time of diagnosis.

There is paucity of data to compare and contrast the findings in this study with other study done locally or internationally; however, we clearly show that post TB complication is the second common cause of outpatient visit in tertiary referral hospital, and provides new insights into the overall burden of TB, and the great challenge it imposes as a chronic respiratory disease on our society.

This study is the first report of post TB complications encountered in a large tertiary care center in Ethiopia. It highlights the fact that a large proportion of patients with pulmonary TB may develop chronic complications beyond the acute illness period. This study is not without limitations. The retrospective and cross-sectional nature of the study, the limited size of the clinical database and tertiary care referral hospital setting may not be representative of the general population.

Conclusion: Fibrosis and bronchiectasis were the most common pulmonary complications of tuberculosis among patients encountered at the TASH chest clinic during the study period. The high prevalence of chronic complications underlies the need for earlier diagnosis and institution of therapy. Better education for patients to seek care, active case finding and early treatment may help prevent these complications.

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