Original Research Paper

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To Study The Risk Factors for Post Pulmonary Tuberculosis Sequelae in Patients Presenting To A Tertiary Care Hospital

Medical Science

KEYWORDS : post pulmonary tuberculosis sequelae , predictors

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ABSTRACT

Among treated and cured TB patients, some may develop respiratory sequelae characterized by chronic respiratory symptoms which may persist and affect individuals quality of life. During the period between August 2015 to December 2015. A total of 55 patients with history of pulmonary tuberculosis (initially sputum positive) and respiratory complaints were included in the study and a detailed history, examination and all the relevant investigations were carried out. Results from the study showed that delay in the onset of treatment, irregular or non compliance with the treatment, continued smoking during and after treatment, old age, lower level of education and social stigma were the main predictors of the post pulmonary tuberculosis sequelae.

INTRODUCTION

Sequela of tuberculosis (TB sequela) is defined as the state with various secondary complications after healing of TB, such as chronic respiratory failure (CRF), corpulmonale or chronic pulmonary inflammation. Among treated and cured TB patients, some may develop respiratory sequelae characterized by chronic respiratory symptoms which may persist andaffect individual's quality of life.

Although pulmonary tuberculosis decreased remarkably by antituberculous therapy, we have had a lot of patients associated with sequelae who need medical treatment for many symptoms several years later. [1]In an immunocompetent person, development of specific immunity is generally sufficient to limit multiplication of the bacilli; the host remains asymptomatic and the lesions heal with resorption of caseous necrosis, fibrosis, and calcification. Immunocompromised persons may develop progressive disease with dissemination.[2] Therefore, various residual lesions and complications can occur following tubercular infection at any of the points described in the pathogenesis.

Despite the widespread of various new diagnostic methods, delays in diagnosis and treating tuberculosis are still considerable in many developing countries. This can lead to various complications including high mortality, spreading of the disease and severe TB sequelae [3]. This study aimed to assess the predictors of post-TB sequelae, determine the prevalence of respiratory symptoms of patients with TB sequelae consulting a tertiary level of care in Rohilkhand region. Findings from the study will help health planners to identify areas of intervention and set up strategies to prevent the development of sequelae and improve the management of patients living with it.

MATERIALS AND METHODS

From August 2015 to December 2015, a total of 55 patients with a history of pulmonary tuberculosis presented to the department of pulmonary medicine at Rohilkhand Medical College & Hospital, Bareilly. All patients willing to participate in the study were accepted as long as they presented with a history of pulmonary tuberculosis, declared cured or treatment completed. All patients were requested to give a written or verbal consent. Recruitment was done among subjects consulting the Outpatient Department and those hospitalized.

Socio-demographic data, respiratory symptoms, investigations and chest X-ray findings were registered in a pre-designed data collection form. a detailed history, examination and all the relevant investigations were carried out. Severity of sequelae lesions was estimated using the classification of the National Tuberculosis and Respiratory Disease Association of the USA (United States of America), into four groups: minimal lesion, moderate, moderate advanced and far advanced [4]. All patients were given a small container to collect sputum for AFB staining using fluoroscent microscope and culture. The subjects were included in the study only after 2 consecutive sputum examinations for AFB and culture were negative.

RESULTS

SEX	N (%)
Male	37 (67.2%)
Female	18 (32.8%)
AGE	N(%)
15 - 30	10 (18.1%)
30 - 45	31 (56.3%)
> 45	14 (25.4%)
EDUCATION	N (%)
Illiterate	46 (83.6%)
Primary	7 (12.7%)
Secondary	2 (3.6%)
University	0 (0%)
SMOKING HISTORY	N (%)
Never smoked	17 (30.9%)
Ex smoker	6 (10.9%)
Current smoker	32(58.1%)
HISTORY OF TB	N (%)
One episode of tb	16 (29.1%)
Two episodes of tb	34 (61.8%)
Three episodes and above	5 (9.1%)
SYMPTOM	N (%)
Cough	53 (96.3%)
Expectoration	34 (61.8%)
Dyspnoea	42 (76.3%)
Chest pain	12 (21.8%)
Haemoptysis	39 (70.9%)
Fever	23 (41.8%)
Weakness	14 (25.4%)

Table 1

Table 2
INITIATION OF ATT AFTER DIAGNOSIS

DURATION	N (%)
< 7 days	12 (21.8%)
8 – 30 days	32(58.2%)
> 30 days	11 (20%)

COURSE OF TREATMENT

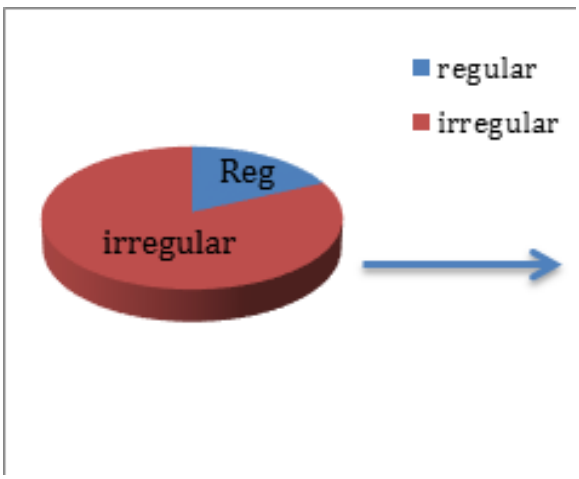
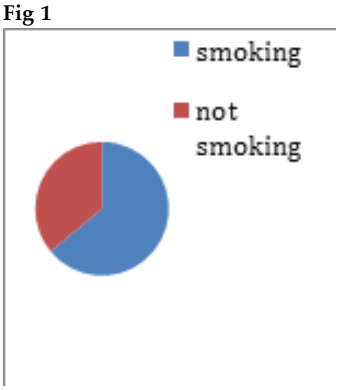


Fig 1



Of the total 55 cases 37 were men and 18 women, mean age was 39.2 years. Majority of participants (74.5%) were aged below 45 years, the oldest was aged 80 years. 46 (83.6%) patients were illiterate by education and only 2(3.6%) attending high school. 53(96.3%) participants reported chronic cough, 34 (61.8%) described abundant expectorations and 39 (70.9%) had hemoptysis . Dyspnea was reported by 42 (76.3%) patients. 34 (61.8%) participants reported at least 2 episodes of anti TB treatment and 68(70%) had history of smoking present.(Table 1). 82% of the patients had irregular treatment history of which 64% continued smoking during and after the course (Fig 1). All participants had abnormal chest radiographs, retraction and fibrosis were the most common radiological findings (87.2%) followed by bronchiectasies (76.3%) and cavities (52.7%).

DISCUSSION

In our study, most of the patients were males 37(67.2%) between 30-45 years of age and illiterate by education. Cough, hemoptysis and dyspnea were among the main symptoms presented by patients in our study. Other authors [5] have also described similar symptoms in patients with TB sequelae. Different etiologies can explain those symptoms, cough and dyspnoea may result from extended parenchymal destruction leading to a poor pulmonary compliance but also endobronchial involvement which can cause localized or even generalized bronchial obstruction [6]. Bronchiectasis, aspergillomas and other parenchymal, airway and vascular lesions are potential sources of hemoptysis [7].

The role of tobacco smoking is established not only in the genesis but also in the clinical presentation and healing process of pulmonary tuberculosis [8] Our study also showed that most of the patients 38(69%) had history of smoking of which 32(58.1%) were current smokers and 35(64%) of the patients continued smoking during and after the course of treatment. Smoking was hence assessed to be an independent risk factor for the development of post pulmonary tuberculosis sequelae as established by Dheda k, Booth H et al.[9] Fibrosis is a common finding in tuberculosis sequelae, there is often atelectasis of the upper lobe and retraction of the hilum, compensatory lower lobe hyperinflation, and a mediastinal shift towards the fibrotic lung [6]. Chest X ray of most of the patients in our study had similar findings with majority having pleomorphic shadows. It was expected to find severe tuberculosis sequelae among patients with already a history of tuberculosis. Despite chemotherapy, TB healing can be associated with important lung destruction and extensive fibrosis [9]. Delay in the initiation of anti tuberculous therapy was also found to be responsible for the development of post tuberculosis sequelae with only 12(21.8%) starting treatment within 7 days of diagnosis and 43(78.2%) starting treatment after 7 days (Table 2). This could be attributed to the faulty healthcare system and patient ignorance as majority of the patients i.e 46(83.6%) were illiterate by education.[10]

Discussions with patients in the current study revealed that they were victims of stigma in their families and villages. Our patients did not have active TB but presented TB-like symptoms and were suspected by their neighbors as potential TB carriers. Some authors noted that patients with TB-like symptoms tend to hide them fearing discrimination and/or isolation and end up in a self-exclusion which is dangerous regarding continuation of care [11]

CONCLUSION

Main predictors of the post pulmonary tuberculosis sequelae are delay in the onset of treatment, Irregular or non compliance with the treatment, Continued smoking during and after treatment, Old age, Lower level of education, Social stigma.

Patients diagnosed with pulmonary tuberculosis should be given treatment as early as possible and along with the relatives should be counseled about adverse outcomes for non adherence , continued smoking and ignoring symptoms.

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