Original Research Paper

Medicine

A STUDY OF INITIAL DEFAULT AMONG SPUTUM POSITIVE FOR AFB IN PULMONARY TUBERCULOSIS PATIENTS IN A TERTIARY CARE HOSPITAL IN RMCH, BAREILLY, UP.

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ABSTRACT

Objective: To determine the magnitude of initial default and the causative factors for initial default among smear positive pulmonary tuberculosis patients who are attending the Medicine OPD or admitted in Rohilkhand Medical College and Hospital, Bareilly, UP.

Methods: The study was conducted over 1 year from Jan 2017 to Jan 2018. Number of patients making default during or after diagnosis and factors leading to initial default were analysed. These patients were asked the reasons of defaults and were enquired about the reasons of it.

Results: In the study period, out of 1200 tuberculosis suspects, 336 were diagnosed as smear positive pulmonary tuberculosis patients.

Conclusion: A high initial default for initiating Anti-Tuberculosis therapy is a serious issue that needs to be corrected otherwise defaulter cases would go on increasing.

KEYWORDS :

Introduction:

The global targets for tuberculosis (TB) control adopted by the World Health Assembly (WHA) in 1991 are to detect 70% of the estimated smear positive pulmonary tuberculosis cases in the community and to cure 85% of these newly detected cases(1). Achievement of these targets on epidemiological grounds should lead to a rapid reduction of TB mortality, prevalence and transmission, a gradual reduction in TB incidence and a decrease in acquired drug resistance (2). Achieving the targets is also a prerequisite for reaching the Millennium Development Goal impact targets of TB control adopted by the United Nations General Assembly and the Stop TB Partnership: namely, to halt and reverse the incidence of TB by 2015, and to reduce TB prevalence and death rates by 2015 to 50% of 1990 levels (3). Recently, the phenomenon of initial default has been highlighted in this connection (4).

The success of the RNTCP program is evaluated through a number of outcome measures, including annualized case detection rate for new smear-positive cases, proportion of new sputum-positive patients out of the total number of new pulmonary cases, smear conversion rate, cure rate, treatment completed, treatment defaulter and patient dying during treatment (5). The program has an inbuilt and robust mechanism of regular recording and reporting of the outcome of every patient treated at the different levels of the health system. However, this system does not include a report on the number of smear positive patients who fail to initiate treatment after diagnosis of tuberculosis (6). All cases diagnosed are required to be registered for treatment. Several studies have examined the problem of default by patients after initiation of treatment and the risk factors for default (7).

Initial default is the term used to describe those tuberculosis patients who were diagnosed but did not initiate anti-tuberculosis treatment. As initial defaulters are neither initiated on RNTCP treatment nor recorded in the RNTCP TB registers, they are not included in the RNTCP quarterly cohort reports on case finding and treatment outcomes. Several reasons for not starting treatment are: consultation facilities far away from the patient's home, detection of patients who don't return for the results, and lack of knowledge about free treatment in the public system. However, the issue of failure of initiation of treatment after diagnosis of tuberculosis has been studied to a limited extent only (8).

The standard protocol requires pulmonary tuberculosis (PTB) suspects to submit three sputum specimens over two consecutive days (9). However, since 1st April 2009, this protocol has been modified in RNTCP by the Central TB Division (CTD), Govt. of India. Now the number of specimens required is two; one spot sample and one early morning sputum sample are enough for diagnosis of pulmonary tuberculosis. Thus this modification saves resources and technician's time but it still requires the patients to report to the laboratory on two consecutive days. Owing to this inconvenience, dropout rate, as high as 37%, has been reported (10).

In view of the potential impact of initial default on the transmission of TB and the success of TB control programmes, this study is planned to determine the magnitude of initial defaulters among the patients attending a typical Designated Microscopy Center (DMC), attached to a tertiary care teaching hospital and also try to find out the reasons for initial default so as to increase the effectiveness of TB control programmes by tracing the initial defaulters and starting treatment as soon as possible .

Material and methods:

The study was carried out among all pulmonary tuberculosis suspect patients attending the medicine OPD / IPD of over a period of one year at Rohilkhand Medical College and Hospital, Bareilly, UP. The patients having cough with or without expectoration of more than two weeks duration with or without other symptoms like pleuritic chest pain, appetite loss and weight loss was regarded as Tuberculosis suspects patients. This was a cross sectional descriptive study. The inclusion criteria includes age more than 18 years and all suspected patients of pulmonary tuberculosis. This study was carried out among 336 tuberculosis patients who are attending the medicine OPD / IPD of Rohilkhand Medical College and Hospital, Bareilly, UP over a period of one year. The study material (questionnaire / formats / subject proformas) were used to generate data. Informed consent was taken from the patients. A detailed history was taken and clinical examination was done. All enrolled patients were investigated for the diagnosis of pulmonary tuberculosis as per new RNTCP guidelines. Every patient being referred for treatment to his or her nearest DOTS centre were contacted telephonically, through post and on follow up and was asked about the cause of not starting the treatment. If patient had started treatment then no further enquiry was done but if patient had not started treatment then he/she was asked the reason for not starting treatment according to the predetermined questionnaire.
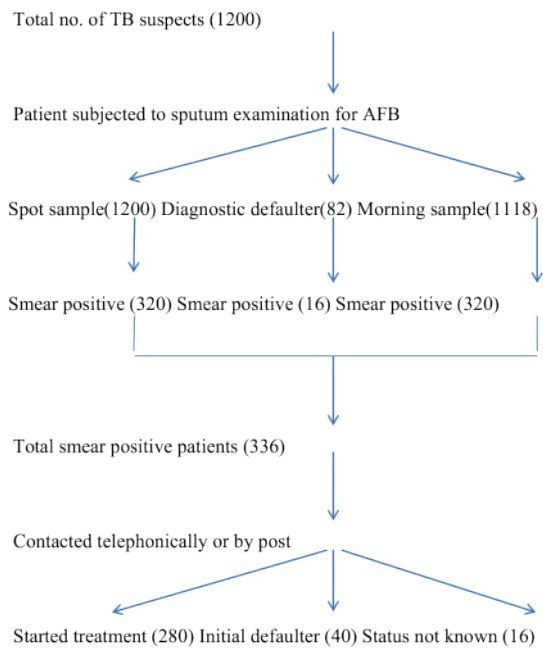
The study was approved by the Ethical review committee of RMCH.

Results:

Out of 336 patients of sputum positive pulmonary tuberculosis, 206

patients were put on category I ATT (61.3%) and 130 (38.6%) on category II ATT under DOTS and referred to the nearest DOTS center. Follow up of these patients showed initial default after the diagnosis in 44 (13.13%) cases. The main causes for initial default were limited trust of the patient in the curative ability of DOTS (11 cases, 3.28%), dissatisfaction with health services (7 cases, 2.18%), death before starting treatment (4 cases, 1.09%), advice by neighbors/ local physicians to start treatment from private hospital (4cases, 1.09%), previous deaths in local area due to DOTS (2 cases, 0.72%), side effects of ATT taken previously (5 cases, 1.45%), unavailability of drugs of prescribed category (5 cases, 1.45%), disbelief in the diagnosis (4 case, 1.09%) and disagreement of other physicians with diagnosis (2 case, 0.72%).

FLOW DIAGRAM OF ENROLLED PATIENTS

Total no. of TB suspects (1200)

Patient subjected to sputum examination for AFB

Spot sample(1200) Diagnostic defaulter(82) Morning sample(1118)

Smear positive (320) Smear positive (16) Smear positive (320)

Total smear positive patients (336)

Contacted telephonically or by post

Started treatment (280) Initial defaulter (40) Status not known (16)

Demographic characteristics of sputum positive pulmonary TB patients (n=336)

Characteristics	No of patients	Percentage
Sex		
Male	240	71.42 %
Female	96	28.57 %
Age groups		
18-40 yrs	120	35.71%
41-60 yrs	112	33.33%
>60 yrs	104	30.95%
Residence		
Rural	196	58.30%
Urban	140	41.66%
Socioeconomic status		
High	10	2.97%
Middle	66	19.64%
Low	260	77.38%
Religion		
Hindu	180	53.57%
Muslim	126	37.50%
Others	30	8.92%
Smokers	280	83.33%
Habituated to alcohol	124	36.90%
Type of TB case		
New	204	60.71%
Retreatment	132	39.28%
Associatedcomorbidities		
Diabetes Mellitus	54	16.07%
HIV positive	5	1.48%
COPD	68	20.23%
Taking steroids	70	20.83%

Discussion:
Default in the treatment of tuberculosis is an important and vital issue. Initial default before initiation of treatment is a potentially serious problem, particularly in cases of smear positive patients. These patients are a potential source for infecting others in the community. A patient with active pulmonary tuberculosis expels infectious droplets of 0.5 to 5 microns during coughing, sneezing or speaking. A single sneeze can produce 40,000 droplets(12) and each of these droplets can infect the person who inhales it. Infectious dose of tuberculosis is very low as even a single bacterium can cause a new infection(13). Besides it has been proven, that one smear positive patient infects 10-15 persons in a year and 10% of them will develop the disease in due course(14).

This study highlighted opportunities for programme improvement.

Conclusion:
The high initial default especially among smear positive cases is a serious issue and magnitude of the problem can be confirmed by a large-scale study. Proper address documentation and default tracing is needed so the WHO target of case detection and treatment completion could be accomplished. All these measures will help to reduce the burden of tuberculosis.

In summary, we need to motivate and improve patient's perception of disease andthe need for DOTS and convince them of the need for initiating and completing treatment. Thefindings of the study indicate the need for an indepthqualitative study involving patients and focusgroup discussion. The study also highlights the needto improve the health system's abilities to motivateand ensure initiation of treatment immediately andthereby to reduce deaths among those who have been diagnosed at health facility. Patients, who attend government health facilities by voluntarily opting to seek health care at these centres, obviously repose their faith in the health system. The health system needs to positively respond to this health seeking behaviour and provide for treatment of such patients.Adequate emphasis of this important aspect of programme delivery should be made in the training of all health personnel manning the programme at different levels and a constant monitoring of initial default as an important indicator of the success of the programme should be advocated.

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