



**ASSESSMENT OF TREATMENT OUTCOME OF NEW PULMONARY SMEAR
POSITIVE TUBERCULOSIS PATIENTS REGISTERED IN FATIMA JINNAH
CHEST & GENERAL HOSPITAL, QUETTA, BALUCHISTAN**

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ABSTRACT

Background

Smear-positive pulmonary TB is the most infectious form of TB. Monitoring the outcome of tuberculosis treatment and understanding the definite details for unsuccessful treatment outcome is important in assessing the effectiveness of tuberculosis control program. This study aimed to assess Treatment Outcome of new pulmonary smear positive TB Patients in Fatima Jinnah chest and general Hospital Quetta, Baluchistan.

Methodology

A retrospective study was conducted in Fatima Jinnah Chest Hospital, Quetta during year 2014. Patients were screened for tuberculosis (TB) and people who diagnosed as TB patients were put on Anti-TB therapy (ATT) for six months. The patients were treated as per the established regimen of WHO. The patients were recorded in a TB register called DOTs TB04 register.

Results

The mean age of respondents was 3.70 Years. Of which maximum were female N=424 (57%). And Rural patients were N=386 (52%). Total of N=741 (47.7%) patients were registered with new pulmonary smear positive, N=219 (30%) patients cured, N=273 (37%) treatment completed, N=11 (1.48%) died, N=13 (2%) failure while N=177 (24%) loss to

follow up N=48 (6.47%) Not evaluated. TB treatment success of new pulmonary smear positive patients. Is which shows that success rate for new pulmonary smear positive TB patients is N=492 (66.39%).

Conclusion:

The treatment success rate was found unsatisfactory 66.39% and could not comply the established target set by the (WHO). Similarly, the cure rate was found contrast to the WHO prescribed target.

Keywords: Smear-positive pulmonary TB, WHO, DOTs TB04 register, Quetta, Baluchistan

INTRODUCTION

Tuberculosis is a public health issue with an incident rate of 8.6 million cases notified and 1.3 million deaths occur each year in the world[1].It is the second major cause of death in adults from infectious diseases after human deficiency virus(HIV) in the whole world and it has also been estimated that 200 million people will get active Tuberculosis and nearly 35 million people will die from this disease if it was not properly prevented and controlled in the world[1].An appropriate assessment of Treatment outcome of new pulmonary sputum smear positive TB patients is used as a main indicator for the effectiveness of Tuberculosis control globally and therefore it has been recommended by the world health organization that a separate cohort analysis of TB treatment outcome should be conducted every year in the countrywide [1].

Its infection occurs when a person inhales droplets containing tubercle bacilli. Then it multiply within the cells. Similary, It can

be shifted to other parts of the through lymphatic system of the human body causing extra pulmonary Tuberculosis [2]. The mycobacterium Tuberculosis (MTB) causing Tuberculosis of the lungs is known as Pulmonary Tuberculosis. When it migrates to other organs of the body through blood stream where this also causes TB which is known as Extra-Pulmonary Tuberculosis [2].

The Global TB strategy was initiated by the world health organization in 1990sin this context, world health organization started a mechanism for the treatment of this diseases by the name of directly observed treatment short-course (DOTs) in the world. Initially it was commenced in 184 countries and 132 million patients were treated with DOTs as a result 125 million patients being cured [3]. Within the context, Pakistan stands on 5Th position amongst in 22 high TB Burdon countries and contributes 63% of TB Burdon in the eastern Mediterranean Region. TB is 5.1% of the total disease

Burden in Pakistan [5]. According to world Health Organization (WHO), the incidence of sputum smear positive TB patients in Pakistan is 97/100,000 and incidence for all TB cases is 231/100,000. The prevalence of TB is estimated 373/100,000 population [4]. Treatment Success Rate (Cured, Plus, Completed) is one of the indicators for the performance of Tuberculosis control (TC) and is essential to prevent TB infection spread. It is imperative to evaluate the patients for treatment outcome, in order that to design intervention for the improvement of TB treatment success rate in the patients [5]. WHO has set an international target for TB treatment success rate to be 85% in developing countries and 95% in industrialized countries [6].

Measuring treatment outcome is necessary for a successful TB control. WHO and international Union against Lung Diseases (IUALDs) apply six categories for measuring TB treatment outcome in high incidence countries are as: Cured (finished treatment with negative bacteriology result at the end of treatment), Completed (Finished treatment but without bacteriology result at the end of treatment), Default/Loss to follow up (interrupted treatment for two consecutive months or more), Failure (remaining smear positive at five months), Died (Died during the treatment from any cause), Not Evaluated

(transfer from one center to another center) [7].

Historically, the greatest emphasis of TB control activities has been on the most infectious patients – those who have sputum smear-positive pulmonary tuberculosis and As per WHO protocol, It is necessary to assess Treatment out of all types of TB patients as separate cohort, because they have different characteristics and outcome [8]. TB treatment outcome has not been assessed in the respective Tertiary Care Hospital scientifically, therefore, this study aimed to assess treatment outcome of new pulmonary sputum smear positive TB patients registered in Fatima Jinnah Chest and General Hospital Quetta, Baluchistan during the calendar year 2014.

METHODOLOGY

Study Design

It was retrospective study of all new pulmonary smears positive TB patients registered at DOTs centers of Fatima Jinnah Chest & general Hospital during the calendar year, 2014.

Study Population

The study including All New Pulmonary smear positive TB patients registered during the calendar year, 2014 at DOTs centers of Fatima Jinnah chest and general Hospital, Quetta. There were two (2) functional TB DOTs centers at the Hospital. The patients come and seek their medical treatment from all administrative districts of the province

and from the suburb areas of the Quetta city. Patients were screened for tuberculosis (TB) from the outpatient departments (OPD) and people who diagnosed as TB patients were put on Anti-TB therapy (ATT) for a period of six months. The patients were treated as per the established standard Anti-TB treatment Regimen of WHO.

Data Source and Procedure

As stated earlier, it is retrospective study so all data were gathered and acquired which is already present in formal register. The patients were recorded in a TB register called DOTs TB04 register. The TB04 register including demographics of the patient, Disease characteristics, TB Patients types and TB Treatment outcome.

Ethical Consideration

Record of registered TB patients was obtained from the primary data source after approval the ethical committee of the Faculty of pharmacy and the Medical superintendent (MS) of the respective hospital.

Statistical Analysis

The data was entered in statistical package (SPSS) version 20 for analysis Descriptive statistics was used to determine, Demographics, disease characteristics and Treatment outcome. Patient's

demographics and Treatment outcome were determining in frequencies &percentage.

RESULTS:

TB Patients Demographics

The demographics characteristics of new Pulmonary smear positive TB patients are presented in Table-1, which show that Female patients are more N=424(57%).Patients of age group between 5-14 years are more N=197(27%) with mean age of 3.70 Years. Rural patients are registered more N=386(52%).

TB Treatment Outcome of Sputum Smear Positive Pulmonary TB patients

TB treatment outcome of new Pulmonary smear positive TB patients is presented in table-2 which describes that N=741(47.7%) patients are registered with new pulmonary smear positive for the study N=219(30%) patients cured, N=273(37%) treatment completed, N=11(1.48%) died, N=13(2%) failure while N=177 (24%) loss to follow up N=48(6.47%) Not evaluated.

TB treatment success of new Pulmonary smears positive TB Patients.

TB treatment success of new pulmonary smear positive patients is presented in table-3 which shows that success rate for new pulmonary smear positive TB patients is N=492(66.39%).

Table 1: TB Patients Demographics

Description	Frequency	Percent
Gender Male	317	43

Female	424	57
Age Group		
0-4	47	6.34
5-14	197	27
15-24	144	19.43
25-34	102	14
35-44	95	13
45-54	94	13
55-64	62	8.36
Residency	386	52
Rural	355	48
Urban		

Table 2: TB Treatment Outcome of Sputum Smear Positive Pulmonary TB patients.

Treatment Outcome	Frequency	Percent
Cured	219	30
Treatment Completed	273	37
Died	11	1.48
Failure	13	2
Loss to Follow up	177	24
Not Evaluated	48	6.47

Table 3: TB treatment success of new Pulmonary smears positive TB Patients

Smear Positive	Frequency	Percent
Cured+ Completed	492	66.39

DISCUSSION

Assessment of treatment outcome in new pulmonary smear-positive patients is used as a major indicator and it enables the identification of problems [1]. Treatment outcome is important for monitoring the quality of case management and the progress of TB treatment. Of the total 1553 TB patients for the study year was evaluated, a total 741 new pulmonary smear positive TB patients of the all ages were selected for the desired study. Data of the desired new pulmonary smear positive TB patients were evaluated for the treatment outcome, It was observed that female were more than male and according to the Global TB report and national TB

reports it was seen that male are more notified than female [9].

Treatment success rate was evaluated 66.39% which was lower than the standard set by WHO [6] and with cure rate of 30% which is contrary to the established target of 85% [6]. According to the WHO statistics, it was found that in 2008 the success rate was reported 78% and 87% in 2012 [9].

In 2010 only seven countries of 22 high TB burden countries reported lower TSR and the rest of countries met the established target 85% [10]. This result can be compared with the findings recorded by the Pakistan national TB report which describes that TSR is 92% and 91% with cure rate 75% and 72% in 2011 and 2012

[11]. While the cure rate of this study cannot be compared with the findings of Pakistan national TB report of 2011-12 [11].

This result is to some extent compare with the result of a study conducted during 2006-7 [12]. This result is in line with the result of a study conducted in Pakistan [13]. This result is similarly in line with the findings of a study conducted in Pakistan [14].

Assessing the treatment outcome of new pulmonary smear positive TB patients, It was evaluated that high treatment loss to follow up of n=177 (24%) was documented making an alarming and threatening result in highly infective TB patients. Even there was not any systemic and scientific information for the treatment loss to follow up. This high loss to follow up rate may affect the performance of the center and may contribute to the low success rate of this study.

Comparing this finding with other studies, it was found that this result is supported by the findings of a study conducted in Pakistan [13] and contrary to the findings of a study made in Pakistan [12].

CONCLUSION:

The overall treatment success rate was found unsatisfactory 66.39% and could not comply the established target set by the world Health Organization (WHO) 85%.

similarly, the cure rate was found contrast to the WHO prescribed target.

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