DELAYS IN EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS IN PATIENTS REGISTERED WITH TB DOTS PROGRAMME AT DHQ HOSPITAL OKARA

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ABSTRACT

Background: Pakistan ranks as the country with the 8th highest burden of Tuberculosis globally, with an estimated incidence of sputum smear positive cases as 82/100000 per year and for all types as 181/100,000. Delay in early diagnosis of Tuberculosis has reaching implications by contributing towards the increasing mortality due to tuberculosis. Delay in diagnosis results in increased infectivity in the community contributing to the complications and overall mortality and hence a threat to public health. Case detections rate in Pakistan can only by improved by addressing the delay in early detection or case finding.

Objectives: The objectives of the study was to evaluate the factors associated with delay in early diagnosis of Pulmonary TB both, delays on the part of patients and the Health system

Subjects and Methods:

Study Design: Cross-sectional study

Study Setting: OPD of the DHQ Hospital Okara

Study Duration: From April 2016 – December 2016.

Sample Size: 90 patients referred to OPD were included in our study

Sampling technique: Non probability / consecutive sampling

Data Collection procedure: 90 patients of Pulmonary TB, attending were included in study. Data was collected through a Questionnaire, which was entered into computer using Epi info -6. Confidentiality of the data was ensured and proper consent was obtained before data collection.

Data analysis procedure: Data was entered and analyzed in Epi-info ver:6.1. Mean and standard deviation was calculated for numerical variables like age, duration of delays. Frequency and percentages were calculated for numerical variables like, gender, marital, education, occupation, clinical symptoms and reasons for delays.

Results: Around 73.5% patients were between 15-35 years of age with a mean of 30-75 years. Of these, 55% resided in suburban areas.. 90.9% patients consulted a private HCP in close proximity to the neighborhood of the patients and only 5.7% of them could make the diagnosis of tuberculosis. None of the patients consulted the NTP facility in the first instance. 5 Health Care Providers were consulted by every patient before the patient was referred to the DHQ Hospital Okara. The total Delay i.e. the time period from the onset of symptoms to initiation of treatment was a mean of 100.7 days. Patient delay i.e. the time period which the patient took from the onset of symptoms to seeking advice from a qualified doctor contributed to only 10% of this delay i.e. nearly 10 days. The health care component i.e. the time from seeking health care to diagnosis was a mean of 52.75 days. This was contributed mainly by the Private qualified doctor. The significant determinants to diagnostic delay included the stigma associated with the disease, the income (the lower the income, the longer the delay) as well as the time taken to reach the health facility.

Conclusion: Study concluded that health system is mainly responsible for linked the long delay between onset of symptoms and diagnosis and treatment of tuberculosis. Involving of GPs with the main stream NTP/PTP is mandatory to reduce the delay in diagnosis of TB.

Key words: Pulmonary tuberculosis, Delays, Diagnosis, factors

INTRODUCTION

World Health Organization (WHO) declared TB a global emergency in 1993 in recognition of its growing influence as a public health problem.[1,2] One third of world population is currently infected with mycobacterium tuberculosis and it is the top infectious

cause of mortalities in adults.[3,4] More than 90% of global TB cases and deaths occur in the developing world. Due to the highest number of TB cases per head in South East Asia the situation in these countries is described a as a "Time Bomb" awaiting to explode. Between 1995 and 2011, 51 million people were successfully treated for TB saving 20 million lives. In most of the 21 countries that provided data, 10–40% of notifications were from non-NTP care providers. In 2010, the treatment success rate among all newly - diagnosed cases were 85% and among patients with smear-positive pulmonary TB (the most infectious cases) it was 87%. (3A). Seventy-five percent of TB cases are in the most economically productive age group (15-54 years). An adult with TB loses on an average three to four months of work time. Global burden of tuberculosis disease in terms of DALYS (Disability Adjusted Life Years) is about 35.79 million.[4,7.]

Notifications of TB cases have stagnated in recent years. New policy measures such as mandatory case notification and intensified efforts by NTPs to engage the full range of care providers using public -private mix (PPM) initiatives are critical to increase the number of TB cases notified in future years. The Stop TB Strategy was built in January 2006 (2006-2015). MDG-No. 6 and Target No. 8 directly deals with control of tuberculosis. TB-DOTS have been promoted as a global strategy since the mid 1990's. TB- DOTS program was launched in Pakistan in 1995. The DOTS strategy was launched in the Punjab in the year 2000 as pilot project.[5] Low suspect .identification and poor TB management are responsible for MDR and XDR-TB. WHO developed targets for case detection rate (CDR) is 70% and for treatment success rate (TSR) is 85%.[8,9]

Factors associated with delay in early diagnosis of Pulmonary TB may be divided into two parts, delays on the part of patients and delays on the part of health system. Patients related factors of delays are educational, socio-, economic status, health-seeking behavior, and stigmatization. Health system related factors are, lack of planning and funding ,lack of ACSM for masses, lack of commitment of treatment providers especially in private sector, lack of monitoring and supervision, unchecked and every day increasing quackery, lack of orientation of private practitioners and refresher training, misdiagnosis and misunderstanding of TB cough as smokers cough, lack of laboratory facilities at private clinics, lack of TB specialists at THQs and DHQs, lack of availability of doctors and microscopy facilities at BHUs, location of health facilities at unsuitable places, and lack of evening shift in government health facilities.[7-11]

Detailed analysis of the various factors interplaying to affect the health-seeking behavior and timely treatment showed that they could be categorized into either patient or health system factors.[13-14] Patient delay ranged from a mean of 9.9 days in Pakistan to 69 days in Somalia, while system delay ranged from 5 days in Iraq to 75 days in the Islamic Republic of Iran. The private sector was the first choice for more than two-thirds of patients.[15] The main determinants of delay were: socio demographic (illiteracy, suburban residence); economic; stigma; time to reach the health facility; seeking care from non-specialized individuals; and visiting more than one health care provider before diagnosis.[16-19]

In conclusion, an unacceptable delay in the treatment of tuberculosis patients was reported in all countries. This was mainly attributed to late diagnosis within the health system in Pakistan, Egypt, and Islamic Republic of Iran, but also to inadequate health-seeking behavior of patients in the remaining countries. The study was designed to identify the factors associated with delay in early diagnosis of TB among the cases, registered through TB/dots program .at a public sector health facility. 2/3 of the cases lying in private sector could not be touched in this study .Results of this study are hoped to be helpful in modifying Tuberculosis Control strategy and recommendations will be formulated for dissemination and sharing data with policy makers.

OBJECTIVES

To determine various factors associated with delay in early diagnosis of Pulmonary TB and describe health care seeking behavior of suspected Pulmonary TB patients and diagnostic work up prior to consultation and Diagnosis at DHQ Hospital Okara.

MATERIAL AND METHODS

A descriptive cross sectional study was conducted at OPD of TB DOTS DHQ Hospital Okara. All cases of pulmonary TB, Registered with DOTS programme WHO came to collect their drugs on monthly basis. All registered cases of pulmonary Tuberculosis in DOTS at DHQ Hospital Okara above 14 years of either gender were included in our study. Cases of extra pulmonary TB were excluded. Data was collected by the investigator himself, through a pre designed questionnaire printed in urdu. Data was entered and analyzed in Epi-info ver:6.1. Mean and standard deviation was calculated for numerical variables like age, duration of delays. Frequency and percentages were calculated for numerical variables like, gender, marital, education, occupation, clinical symptoms and reasons for delaysThe Ethical committee of the

Institute of Public Health Lahore granted permission for the study at the time of submission of the synopsis the data was collected with due permission of the Executive District officer Health Okara and The Medical Superintendent DHQ Hospital Okara. Fully informed, understood and voluntary consents of participants of study were obtained on a consent form printed in Urdu, after explaining the objective of the study, with the assurance of ensuring the confidentiality of the information given.

RESULTS

Out of 90 patients 66(73.5 %) were of ages between 15 to 35 and 24(26.5 %) were between 35-70 years of age and 44 (49.44 %) males and 46(50.6 %) females. 51 patients (56.6 %) were illiterate or could only read and write their names. 38 patients (42.4 %) were educated only till primary school level. 44 (48.9 %) were laborers,8 (9.16 %) were students and 32 patients (69.5 %) were either house wives or unemployed and were under debt. 35(42.2 %) were living in urban areas, 49(55 %) were living in suburban areas,4(4 %) were living in rural areas while only 1 (0.8 %) patient had no home to live. 53(59 %) patients out of 90 were married, 34 (38.3 %) were unmarried.

46.7% cases were smoking 2 to 25 cigarettes daily; with a median period of smoking was 18 years. 41 TB patients were smokers and 49 were non-smokers. Weight loss was present in 89 and chest pain was present in 13 % cases. However, haemoptysis was present in only 11.5% cases. After the onset of symptoms only 4 (4.4%) consulted DHQ Dots clinic, 1 (1%) visited TB specialist, 3 (3.3%) consulted Homeopaths,6 (6.6%) patients consulted with medical stores, 28 (31.1%) patients consulted Private MBBS doctors, while a leading majority of 48 (53.3%) patients preferred to consult local healers/quack .

The interval between onsets of symptoms and seeking health care, varied from a minimum of same day with a maximum of 74 days. The health system delays i.e. the interval between timing of seeking health care and diagnosis varied from 6 to 99 days. The diagnostic delay was in the range of 21 to 256 days. The treatment delay was 0 to 43 days. The total delay i.e. the diagnostic and treatment delay 267 in contrary, in case of private doctors the minimal time period for initiation of treatment was five days after investigations were completed, however in most cases (55%) patients treatment was initiated after 15 to 30 days of the investigations (15.7 Mean).

Financial problems delayed 35 patients (38.4%) out of total 90, 14 (15.5%) patients remained away because they could not come to DHQ Hospital because morning time of OPD did not suit them at all , 45

(6.3%) patients kept themselves away due to fear of diagnosis and told that they did not like to be confirmed as TB patients, 8 (8.8%) patients believe that disease will be cured itself, 8(8.8%) took their cough as smoker's cough and did not require treatment , 6 (6.6%) had experienced ,inappropriate staff attitude in the past, so they avoided to be on TB treatment. 4(4.4%)patients were busy in discharging duties to their family and were waiting for spare time for check up, to 7 (7.7%)patients the hospital was far away/distant , from their home ,so it was delayed, 3 ladies (3.3%)told that they avoided confirmation of TB. ,

Table 1: Socio-demographic information of respondents

Variables	Frequency	Percentages
Age	Mean = 30.075 SD = 8.95 years	
15-35	66	73.5
35 -70	24	26.5
Gender		
Male	44	49.4
Female	46	50.6
Education Status		
University	1	0.9
Primary-senior	38	42.4
Illiterate/read & write	51	56.6
Occupation type		
Technical	6	6.3
Workers/Laborers	44	48.9
Students	8	9.16
Unemployed /house wives	32	35.5
Residence status		
Urban area	85	94.4
Rural area	5	5.6
Marital status		
Married	53	59.0
Single	34	38.3
Divorced	1	0.6%
Widowed	2	2.1

Table 2: Clinical factors and Reasons for delay:

Variables	Frequency	Percentages
Smoking status		
Smokers	41	45.55

Non smokers	49	54.44
Presenting Symptoms		
Cough	90	100
Fever	90	100
Loss of weight	89	99.90
Hemoptysis	10	11.50
Chest pain	13	14.50
Others	12	12.90
Treatment history		
Private MBBS Doctor	28	31.1
Govt. hospital doctor	5	5.6
Quack/ Local healers	57	63.3
Reasons for delays		
Fear of diagnosis	5	6.3
False Beliefs	8	8.8
Fear of social isolation	3	3.9
Financial problem	35	38.4
Inappropriate HCP attitude	6	6.6
Unsuitable timing of OPD	14	15.5
Cough due to smoking	8	8.8
Busy in liabilities	4	4.4

Table 2: Type of Delays

Delays (days)	Minimum	Maximum	Mean (SD)
Total Delay (days)	23	267	145 (7)
Health system delay (days)	6	99	52.5 (34)
Diagnostic Delay (days)	21	256	138.5 (24)
Treatment Delay (days)	0	43	21.5 (11)
Patient Delay (days)	0	74	37 (13)

DISCUSSION

Annually 2.5 million people in Pakistan develop TB (2). Incidence of AFB positive Tuberculosis in Pakistan is 81 / 100,000 population.[19] The National TB control Program is primarily responsible for management of all TB cases in the population and offers free of cost treatment through DOTS program. Although 100% DOTS coverage has been extended in the country, but patients tendency has been observed to reach the Public Sector health facilities late, resulting in delay in early diagnosis and late treatment of TB.[20-23] The delay between the onset of symptoms of tuberculosis and start of therapy, adds to the dissemination of infection in the community. An untreated AFB positive case can spread infection up to 15 other people annually.[24]

Multiple factors are associated with delay in early diagnosis and prompt treatment, which includes access to government hospitals, stigmatization of TB, Lack of knowledge about disease etc. This study is conducted to find out the factors associated with delay in its diagnosis. Hence Strategies can be adopted to minimize the infection duration among community and hence reduce the transmission of TB. The gender distribution was observed almost equal in male and female, with a mean of 30 years age. The major complaints, for which patients visited a doctor, were observed as cough and fever. Nearly 86% cases consulted a HCP, due to cough.[19,21]

In my study the median Total Delay that is, the time period between the onsets of symptoms to the start of therapy was 97 days and a mean of one hundred days. The total delay consists of a two components ,these are patient delay and a health system delay. Distance from the hospital, education of patients and awareness about TB all contributed to this delay. The Health System Delay is the time period from seeking of health care to TB diagnosis, in this study was observed to be a prolonged median delay of 59 days with a mean time period of 52.7 days. With the exception of except one patient, all patients visited private doctors and in 90.9% patients this was a General Practitioner running clinics just near to the residence of the patient. A small number i.e. 7.7% went to Private TB Specialist. Most of the cases were not convinced by consultation from one doctor. Just 1.5% cases consulted two doctors before they were referred to the DHQ Hospital Okara, TB Dots Centre and a mean of five HCPs were visited by each patient, some cases even visiting 12 doctors. Not only patients did not consult several doctors but they also visited Home physicians, 74.2% or got medical advice from medical stores keepers, 73.2%. In spite of repeated consultations, with private doctors, ultimate diagnosis of Tuberculosis was made by DHQ Hospital Okara in 81.3% cases but the local qualified doctors diagnosed only 5.7% cases. The contributing factors to these included consultations with traditional healers or owners of medical store.

In my study patients who consulted less than 5 GPs had a mean total delay in diagnosis of TB of 94 days as compared to cases who visited more than 5 GPs

mean 11.5 days. As mentioned earlier 81% patients were declared as suffering from TB by DHQ TB/Dots Center. The range of diagnostic delay was between a mean of 95.6 days in cases the diagnosis was made by DHQ as compared to a mean of 101 days where the Private doctors diagnosed the cases. The Socio - economic status, was considerable in contributing in the diagnostic delay, due to the reason that patients seek advice of private GPs who advise usually unnecessary investigations which most of the patients afford and therefore visit other GPs before finally reaching. The delay in reaching the DHQ Dots Center may also be, because of the distance of the DHQ center as well as to the stigma associated with TB, as shown by the multivariate analysis. Private Doctors avoid referring cases to DHQ TB Center because effective linkage between Private and Public Sector.

Lacks of resources comparable to the private sector are a factor associated with early diagnosis of TB.[23,24] It was observed that income also `had a vital role, as cases whose diagnosis was made in the private sector had financial problem to buy the `anti – TB drugs, which are provided free of charges by DHQ Hospital Okara. These poor patients, 62% of whom had taken loan from others, were referred to the DHQ.There is intense need for integration of private health sector with the public health sector for implementation of DOTS strategy for TB control. An important step in this regard will be to allow, the private doctors, the access to a central laboratory for AFB sputum microcopy through the NTP facility, as well as case registrations through the Dots. Patients could then friendly be referred between public and private health Sector, without repeated investigations, unnecessary documentations and other delay.

CONCLUSION AND RECOMMENDATIONS

The study concluded that the health system is mainly responsible for the long delay between onset of symptoms and diagnosis and treatment of tuberculosis. Involving of GPs, imparted refresher trainings, continuous sessions of capacity building and involving them in the main stream NTP/PTP is mandatory to reduce the delay in diagnosis of TB. Free of cost laboratory tests for diagnosis of TB, will help increase case detection rates, as financial constrains was an important determinant in diagnostic delay. Linkage with private practitioners, who practice within close vicinity of patients as well as increasing the number of DOTS treatment centers in the periphery will help in reducing the delays, as distance to the health facility was also an important determinant to the delay.

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