

Tuberculosis

Control

Syrian Arab Republic

A multicountry study in 7 Eastern Mediterranean countries: Egypt, Islamic Republic of Iran, Iraq*, Pakistan, Somalia, Syrian Arab Republic and Yemen

Case-finding in tuberculosis patients: diagnostic and treatment delays and their determinants

Syrian Arab Republic Nationwide

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Abstract

A cross-sectional study was conducted in all tuberculosis centres implementing directly observed treatment, short-course (DOTS) strategy for tuberculosis control across the Syrian Arab Republic, in order to determine the extent and determinants of delay in diagnosis and treatment of pulmonary tuberculosis patients. Using a structured and pre-tested questionnaire, 800 new smear-positive patients were interviewed regarding their health seeking behaviour and other determinants of delay in getting timely and appropriate care.

Results The mean diagnostic delay, defined as the interval between onset of symptoms and diagnosis, was 77.6 days. Patient factors constituted the main component of delay, rather than health system factors. The mean treatment delay, defined as the time interval between diagnosis and treatment, was 2.9 days and approximately half the patients were treated within 1 day of diagnosis.

The mean total delay, defined as the duration between the onset of symptoms and treatment was 80.4 days and approximately half the patients were treated within 57 days. The significant risk factors for total delay were living at a far distance from the health facility, a high degree of stigma, and seeking care from nonspecialized individuals and from more than one health care provider before diagnosis.

Conclusion A long time interval between onset of symptoms and treatment was reported, mainly attributed to patient rather than health care system factors. The identified determinants of delay duration, and the information obtained concerning different barriers to timely health care, should be used to rectify gaps and to plan future interventions to improve case-finding in this community.

Background

The global targets of tuberculosis control are to achieve 70% case detection and 85% cure rates by 2005. According to the WHO global report in 2001, directly observed treatment, short-course (DOTS) programmes in 2000 successfully treated 80% of all registered new smear-positive patients, but detected only 27% of the world's estimated tuberculosis patients. The report indicated that the target of 70% case detection might not be reached until 2013, unless interventions are implemented to increase the case detection rate.

The situation in the Syrian Arab Republic is similar, with an estimated incidence of 38 per 100 000 in 2000, a case detection rate of 32% and a treatment success rate of 79% under complete DOTS coverage. Therefore, improving case-finding activities tops the list of challenges facing disease control.

A study was therefore undertaken of case-finding activities, with an in-depth analysis of the various types of delay and their determinants. The goal was to identify gaps in case-finding activities under DOTS in order to assist in the planning of future interventions.

Materials and methods

Within the framework of a multicountry study, a cross-sectional study was conducted in all tuberculosis centres implementing DOTS in the country (total $n = 13$). 800 newly diagnosed smear positive pulmonary tuberculosis patients were interviewed according to a structured

Conclusions and implications of the study

■ The main health seeking behaviour with onset of symptoms is to visit a health care provider (92.1%). The majority of patients seek care at the private sector rather than the national tuberculosis control programme (2.9%). However, almost half the patients are finally diagnosed in the tuberculosis centres.

■ The first action after suspecting tuberculosis disease is to request sputum smear examination and X-ray (95.3%). Diagnosis is rarely based on sputum smear examination only (0.6%), and referral accounts for 2.3% of cases.

■ Half the patients are treated within 2 months of the onset of symptoms. This is mainly attributed to patient rather than health care system factors. The significant risk factors for delay are living at a far distance from the health facility, a high degree of stigma, and seeking care from nonspecialized individuals and more than one health care provider before diagnosis.

and pre-tested questionnaire. Patients with longer delay were compared to those with shorter delay. The median value was used as a cut-off point for the different types of delay.

The questionnaire included information regarding various delay durations and the factors that may influence health seeking behaviour and accessibility to timely and appropriate care.

Definitions Diagnostic delay is the time interval between onset of symptoms and pulmonary tuberculosis diagnosis. Treatment delay is the time interval between pulmonary tuberculosis diagnosis and onset of treatment. Health care system delay is the time interval between seeking care at a health care provider and pulmonary tuberculosis treatment. Total delay is the time interval between onset of symptoms and pulmonary tuberculosis treatment. This duration is therefore the sum of two durations: patient delay (determined by health seeking behaviour) and health care system delay.

■ Main study findings

More than two-thirds of newly diagnosed pulmonary tuberculosis patients were aged < 35 years old, with a male to female ratio of 1.8. Cough was reported by almost all patients, followed by fever and weight loss, and was the main symptom motivating patients to seek health care. Females recorded significantly lower socioeconomic status and higher stigma than males, while there was no significant difference in knowledge of the disease or satisfaction with care.

Health seeking behaviour before diagnosis
The main health seeking behaviour with the onset of symptoms was to visit a health care provider (92.1%). The majority of patients seek care at the private sector (79.1%) or public hospitals (17.9%), rather than the national tuberculosis control programme (2.9%).

Patients first seek care mainly at chest specialists (50%), followed by general practitioners (29.2%) and specialists in internal medicine (25.7%). The majority of patients visited 1 health care provider before diagnosis, but 42% visited more than 1 and up to 5 health care providers. Most patients (90.3%) were living within half an hour from the health facility. Almost all patients had previously heard about the disease, mainly from Ministry of Health campaigns (51.7%), followed by information from a sick relative or friend (27%). A considerable percentage of patients had inadequate knowledge regarding the presence of a vaccine for the disease, duration of treatment and types of drugs.

Initial tuberculosis diagnosis Almost half the patients were diagnosed in tuberculosis centres (48.5%). Diagnosis was mainly done by chest specialists (68.1%), specialists in internal medicine (20.5%) and general practitioners (9.3%). The first

action after suspicion of tuberculosis was to request sputum smear examination and X-ray (95.3%). Diagnosis was rarely based on sputum smear examination only (0.6%), and referral accounted for 2.3% of cases. Reasons for consulting the national tuberculosis control programme were free services (30.5%), confidence in obtaining a cure (27.6%) and accessibility (22%).

■ Types of delay

The mean patient related diagnostic delay was 52.7 days and approximately half the patients took 31 days to seek health care. The significant risk factors for delay were: inadequate knowledge regarding the disease (a 1.1-fold increased risk); seeking care at a nonspecialized individual who is not a health care provider (5.7-fold increased risk compared to seeking care at a health care provider); and seeking care from more than one health care provider before diagnosis (1.2-fold increased risk).

The mean diagnostic delay was 77.6 days and approximately half the patients were diagnosed within 55 days. The mean treatment delay duration between diagnosis and treatment was 2.9 days and approximately half the patients were treated within one day of diagnosis. The mean health care system delay duration between seeking health care in the health system and treatment was 27.6 days with a median of 15 days.

Total delay The mean duration between onset of symptoms and treatment was 80.4 days and approximately half the patients were treated within 57 days. The significant risk factors for total delay were living at a far distance from the health facility (2.5-fold increased risk); high degree of stigma (1.2-fold increased risk), seeking care at a nonspecialized individual who is not a health care provider (3.6-fold increased risk); and seeking care from more than one health care provider before diagnosis (2.0-fold increased risk).

■ Conclusions and recommendations

The long time intervals between onset of symptoms and treatment reported in this study were mainly attributed to patient-related diagnostic delay rather than delay within the health care system. The main study recommendations are to: increase awareness in the community about chest symptoms, and the availability of free diagnostic and therapeutic services; educate public and private health care providers about national tuberculosis control guidelines; and increase collaboration between both public and private sectors.