Factors contributing to delay in diagnosis of pulmonary tuberculosis patients after care seeking in the district of Anuradhapura, Sri Lanka

R. P. L. Rajapaksha

Cardiology Unit, Teaching Hospital, Anuradhapura, Sri Lanka

Introduction

Tuberculosis (TB) is classified as a re-emerging disease. In 2011, The World Health Organisation (WHO) cited that 8.7 million people worldwide fell ill with tuberculosis and 1.4 million people died because of the disease. In the South East Asian region alone, 500 million people are already infected with the Pulmonary Tuberculosis bacilli and 3 million new cases of Pulmonary Tuberculosis (PTB) develop annually (Dolin and Kochi, 2000). WHO targets reducing the burden of PTB, and halving the PTB deaths and prevalence by 2015 through its "Stop Pulmonary Tuberculosis Strategy" and supporting the "Global Plan to Stop Pulmonary Tuberculosis". In Anuradhapura, a total of 315 PTB cases were reported in 2007 and out of these 167 were smear positive PTB patients. In 2005, the national case detection rate was 47.9/100,000 population and the rate for the Anuradhapura district was 34/100,000.

Objectives

I. To describe the type of the health care providers visited by pulmonary tuberculosis patients

II. To assess the time interval between the first visit to a health care provider and initiation of anti-tuberculosis treatment (i.e. health care provider delay)

III. To describe the mode of referral of patients with pulmonary tuberculosis from the initial contact with a health care provider up to the treatment facility

IV. To determine whether socio-demographic characteristics and presenting symptoms of patients influence the delay in initiation of treatment since care seeking

V. To compare the delay in initiation of treatment since care seeking between smear positive and smear negative, and new and relapse pulmonary tuberculosis patients

Methodology

The analysis is largely based on a descriptive study conducted at the chest clinic and branch chest clinics, in Anuradhapura. The main health care provider for the

Anuradhapura district is the state and there are 62 government health institutions comprised of 24 Central Dispensaries, 23 Rural Hospitals, 7 Peripheral Units, 5 District hospitals, 2 Base Hospitals and a General (Teaching) Hospital. The main chest clinic is located at the Anuradhapura Teaching Hospital, and the branch chest clinics are functioning at the Base Hospitals. In addition, there are 8 microscopic centers in the district. The study population comprised of Pulmonary Tuberculosis patients registered in the District Tuberculosis Register, Anuradhapura and satisfying the following selection criteria:

- Pulmonary Tuberculosis patients registered at the Chest Clinic, Anuradhapura between 01st of January 2008 and 30th of November 2008.

- Aged more than 15 years at the time of registration

The independent variables were grouped into two main entities: characteristic of health care providers and patients such as socio-economic and demographic factors. The variables selected for the description of service functions of health care providers were type of health care provider visited, mode of referral and investigations done at health facilities visited by the patients. The variables describing socio-economic and demographic characteristics of patients were age, sex, and ethnicity, and marital status, level of education, occupation and income. In addition, variables such as contact history of Pulmonary Tuberculosis, smoking and alcohol consumption were also studied. An interviewer-administered questionnaire was used for data collection. The questionnaire was designed to meet the specific objectives of the study after reviewing literature and consulting experts. Most of the questions were close ended and were arranged to achieve the best line of flow for ease of administration and clarity and thereby to increase the respondent's compliance. Collected data was entered by the principal investigator into the Statistical Package for Social Sciences (SPSS) Version 16. Measures of central tendency were used to describe continuous data. Tests of significance were used to compare groups .Chi square test was applied wherever appropriate to assess the significance of relationships when comparing discrete data.

Results

As defined in the study, health care provider delay of 10 days or more was considered a "long delay". 84% of patients experienced longer provider delay of more than 10 days. Only 22% of patients in the age group 36 to 55 had a health care provider delay of 10 days or less. In the younger age (35 year or less), 91% of patents had a longer provider delay. The proportion of female patients and male patients with shorter delay was 25% and 14% respectively. However difference in the duration of health care provider delay in relation to sex was statistically not significant. The proportion of Sinhalese and

ethnic minorities patients experiencing longer provider delays was 85% and 78% respectively. The proportion of ever married patients with longer provider delay (87%) was much more than that of never married patents (61%). About 53% living within city limits experienced longer provider delay, while among patients having residence outside city limits this proportion was 84%.

43% of patient had only primary education and among them 84% of experienced longer provider delay. 86% of patients who were unemployed or unskilled experienced longer health provider delay. Among the skilled workers and professionals, 83% experienced longer delays. The proportion of lower income group patients with longer provider delay (90%) was much more than that of higher income group (72%). There was no statistically significant association between smoking status and alcohol use with provider delay. About 44% who had contact history of Pulmonary Tuberculosis experienced shorter provider delay while only 11% without contact history had a shorter provider delay. About 80% of patients who visited a government health care facility first experienced longer provider delay while among those who visited a private health care provider, 94 % experienced longer delay.

Conclusion and Recommendations

The delay in gaining care for PTB is striking, and is consistently so for all age groups, income groups, ethnic groups and both sexes. Rapid diagnosis and treatment is important in PTB for the patient and in the prevention of spread of PTB.

Continuous medical education for health care providers, especially about the need to diagnose Tuberculosis as early as possible, clinical features and diagnostic procedures, is necessary with special attention to private health care providers to reduce provider delay. An effective referral mechanism should be established to refer the suspected patients to the chest clinic or hospital with facilities for investigation. Improvement in diagnostic facilities particularly the sputum microscopy in remote areas of districts will reduce the health care provider delay. Improving awareness of the public regarding symptoms of Tuberculosis and the need to visit health care institutions with facilities for sputum microscopy when they develop symptoms such as chronic cough and loss of weight can help to reduce provider delay. Further, research is beneficial to assess the present knowledge and practices of the health care providers and general public in the region which can be used to implement appropriate public health programmes.

References

Dolin A, Raviglione MC, Kochi A. (2000), Global Tuberculosis incidence and mortality during 1999-2000, Vol. 172 No 2, Bulletin of the WHO, Geneva.

Janakan N.(2005), "Epidemiological pattern of Tuberculosis and selected aspects of case management in the district of Colombo", MD Thesis, Post graduate Institute of Medicine, Colombo.

Ministry of Health Sri Lanka (2003), Tuberculosis Key factors and concepts, National progame of Tuberculosis an chest diseases, Colombo.

Sooriyaarachchi MBUD (2002), Pulmonary Tuberculosis treatment seeking behavior and compliance to treatment among patients and practice in relation to diagnosis and treatment among physicians in the district of Gampaha", MD Thesis, Post graduate Institute of Medicine, Colombo.

Thissera P.A.D.(1994), "Risk factors associate with pulmonary tuberculosis", Thesis, Post graduate Institute of Medicine, Colombo.

World Health Organization (2008), Global tuberculosis control WHO report, Geneva

WHO website - http://www.who.int/mediacentre/factsheets/fs104/en/ (accessed 27.10.2012).