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INTEGRATIVE REVIEW OF THE LITERATURE

THE DELAY IN DIAGNOSIS OF TUBERCULOSIS

O ATRASO NO DIAGNÓSTICO DA TUBERCULOSE

EL RETRASO EN EL DIAGNÓSTICO DE LA TUBERCULOSIS

Rute dos Santos Lafaiete¹, Fabiana Barbosa de Assumpção de Souza², Maria Catarina Salvador da Motta³

ABSTRACT

Objective: to investigate studies related to delay in diagnosis of tuberculosis. **Method:** A literature review in the period from 2005 to 2010 in electronic databases. **Results:** 13 studies were selected according to the theme, there was a predominance of original studies with quantitative approach. **Conclusion:** the delay in the diagnosis of tuberculosis is not a recent concern, especially in countries with high rates of tuberculosis. Regarding the type of delay, it is necessary to investigate whether the health service or the individuals with TB. In general, the factors influencing the time for diagnosis of TB are connected with each location having peculiar characteristics. **Descriptors:** Tuberculosis, Late Diagnosis, Public health.

RESUMO

Objetivo: investigar estudos relacionados ao atraso do diagnóstico da tuberculose. **Método:** revisão de literatura no período de 2005 a 2010 em bases de dados eletrônicas. **Resultados:** foram selecionados 13 estudos de acordo com a temática, houve predomínio de estudos originais com abordagem quantitativa. **Conclusão:** o atraso no diagnóstico da tuberculose não é uma preocupação recente, principalmente nos países com altos índices de tuberculose. Quanto ao tipo de atraso, faz-se necessário investigar se é do serviço de saúde ou dos indivíduos com tuberculose. De forma geral, os aspectos que influenciam no tempo para o diagnóstico da TB estão relacionados com cada localidade, que possuem características peculiares. **Descritores:** Tuberculose, Diagnóstico tardio, Saúde pública.

RESUMEN

Objetivo: investigar los estudios relacionados con el retraso en el diagnóstico de la tuberculosis. **Método:** Una revisión de la literatura en el período de 2005 a 2010 en las bases de datos electrónicas. **Resultados:** 13 estudios fueron seleccionados de acuerdo con el tema, hubo un predominio de los estudios originales con enfoque cuantitativo. **Conclusión:** el retraso en el diagnóstico de la tuberculosis no es un problema reciente, especialmente en los países con altas tasas de tuberculosis. En cuanto al tipo de retraso, es necesario investigar si el servicio de salud o las personas con TB. En general, los factores que influyen en el tiempo para el diagnóstico de TB están conectados con cada ubicación que tiene características peculiares. **Descriptor:** Tuberculosis, Diagnóstico tardío, Salud pública.

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INTRODUCTION

Tuberculosis (TB) remains a major cause of morbidity and mortality in many countries and means a public health problem. For 2009, there were an estimated 9.4 million new cases of TB worldwide (equivalent to 137 cases per 100,000 inhabitants). The absolute number of cases continues to increase slightly from year to year, with slow reductions in incidence rate per capita (to be offset by the increase in population).²

According to the World Health Organization estimates the global burden of disease caused by TB in 2009 were 9.4 million incident cases, 14 million prevalent cases, 1.3 million deaths among HIV-negative people and 0.38 million deaths among HIV-positive people.

Most cases are in Southeast Asia, African and Western Pacific regions (35%, 30% and 20%, respectively). The African region represents approximately 80% of these cases. There were 5.8 million reported cases of TB in 2009, equivalent to a case detection rate of 63%, up from 61% in 2008. Of the 2.6 million patients with TB sputum smear positive pulmonary cohort in 2008, 86% were successfully treated.²

Brazil is one of 22 countries prioritized by the World Health Organization (WHO) covering 80% of the global burden of TB. Currently the country is in 19th place, having already occupied the 14th in 2004. In 2009, there were 71,700 new cases of the disease, with an incidence rate of 37 per every 100 thousand inhabitants. Since 1990 the incidence rate shows a decrease of 26% (1.4% annually).³ The distribution of cases is concentrated in 315 of the 5,564 municipalities in the country, accounting for 70% of all cases. The state of Rio de Janeiro stands out in the national picture.⁴

Even after the implementation of various resources, public policy and strategies for TB J. res.: fundam. care. online 2013. jul./set. 5(3):174-180

control, remain the high rates of disease, especially in the city of Rio de Janeiro, where a vulnerability exists precisely because the social conditions of life, the environment and access services do not provide the early diagnosis of disease, monitoring of treatment to cure and protect the contacts.⁵

TB is transmitted by air in nearly all cases. Patients with active tuberculosis, ie, those whose sputum smear is positive, are the main source of infection. Pulmonary TB patients with smear-negative, even if they have positive culture, are much less efficient as sources of transmission, although this may occur. Diagnose and treat and correct promptly the cases of pulmonary TB is the main measures to control the disease. Efforts should be made early in order to find the patient and provide appropriate treatment, interrupting the chain of transmission of the disease. In this sense, it is critical to early detection of bacilliferous cases.⁶

The detection of cases with immediate institution of effective chemotherapy is also one of the most important strategies for disease control. For this purpose there is a need for a diagnosis without delay to minimize damage to health of individuals and the population. The effective chemotherapy, while saving patients' lives, reduces the number of infecting organisms eliminated by these by cough, thus preventing transmission to susceptible individuals. As soon as a case of TB is diagnosed, treatment should be started and completed notification form.⁶

TB is a public health problem and therefore requires a collective effort to change their standards endemic. It is necessary to invest in shares of diagnosis and control of TB, through the implementation of specific activities, to reduce the transmission of TB bacilli in the population.⁷

The objective of this review was to conduct an investigation of the papers published in national and international journals on TB and the

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Primary Health Care (PHC), with a focus on research on the time interval between diagnosis and treatment of TB.

METHODOLOGY

We performed a systematic review that allows you to search, review, review and synthesis of available evidence on the proposed topic. To search and analyze of relevant research enabling the synthesis of knowledge while identifying the gaps that need to be met even with the implementation of new studies. A systematic review enables a summary of all the studies and allows you to incorporate a wider spectrum of relevant results, instead of limiting our conclusions.⁹

Selected by three electronic databases LILACS (Latin American and Caribbean Health Sciences), MEDLINE, Medical Literature Online (International Literature on Health Sciences), Theses Database Portal's regular CAPES and Virtual library Brazilian SciELO / Brazil (Scientific Electronic Library Online).

The key words used for the search were Tuberculosis, APS and Primary Care (AB) because some authors use the terms interchangeably APS and AB and the prospect of local units or level of care, ie, there are discussions about the definition of these terms. Gil (2006) 10 in a systematic review of APS, AB and PSF, to analyze the contexts of the articles showed that most of the work on APS and AB deals with research and evaluation studies of problems / grievances of local health units, sometimes called units / primary care services, either at the primary.

The searches in databases were conducted from March to April and Theses Database in May 2010. For each search site, we performed a combination of descriptors and keywords (tuberculosis, delay, diagnosis and primary health care). The combinations for the search descriptors and keywords have been made from the use of J. res.: fundam. care. online 2013. jul./set. 5(3):174-180

Boolean Logic Operators, being used "and" for the different descriptors / keywords and "or" similar to the terms found when available to search.

The criteria for inclusion of articles from reading the summaries were articles published over the past 5 years, except in the thesis database, original and review articles, found in Portuguese, English or Spanish. Exclusion criteria were: not having accessible summary after several searches, be associated with other diseases, indigenous people, animals, laboratory tests, extrapulmonary TB, the hospital, pediatrics.

Theses on the bench there was no limitation on the year to observe more broadly scientific productions of educational institutions.

Articles were selected by evaluating the content of the summaries. After, a reading of the full content of articles available in full. The variables analyzed were the main contributions of the study, year, authors, and place of study, methodology and institution.

RESULTS AND DISCUSSION

Brazil has stood out on the international scene with his studies and São Paulo stands out on the national scene. It was noted that the University of São Paulo (USP) has developed several studies on the subject appearing more specifically the School of Nursing of Ribeirão Preto (EERP) in this context.

The journals contribute to knowledge about tuberculosis. A quantitative approach still predominates in the polls, mainly descriptive studies. A qualitative approach has grown considerably in recent years, being observed in all findings.

To evaluate the trends of the studies were evaluated considerations/contributions of articles. On the international scene, analyzing the themes, predominated studies related to diagnosis mainly on the time and this delay, then treatment studies. In fewer themes emerged on evaluation of

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services, perceptions of patients and health professionals about TB and various related aspects.

On the national scene, also including the findings of the academy, we realized the concentration of studies related to the treatment of TB, especially studies on the implementation and evaluation of the Supervised Treatment of Tuberculosis (DOTS). Another highlight was for studies related to indicators of TB especially mortality. In similar proportions arose evaluation studies of health services, surveillance and epidemiology. In fewer studies on bond, diagnostic methods, continuing education and social representations.

Of the articles that discussed or cited specifically weather and difficulties related to TB diagnosis were selected 13 studies, discussed below, most frequently in international studies. We included other relevant studies found outside the systematic literature review and excluded articles that did not have its content accessible in full.

Regarding the length of the delay in diagnosis are considered two types of delays, one related to the patient and other health services. The first patient is on the time interval between the onset of symptoms until the first visit to any health service. The delay occurs in relation to patients when they do not identify cough as a warning sign to look for a health service, leading them to only seek health services when there is worsening of general condition, going directly to tertiary services when sick.

Studies have found diverge with respect to the average time delay patient: ranging from 20 days¹⁴, 27¹⁵, 30¹², 50¹¹, 60^{16,17} until 120 days¹⁸. All these considered delayed when the time was larger than the average obtained. Esterman & Chang (2007) 12, obtained as a minimum time of 14 days and maximum of 1 year. These differences in the average delay may be associated with the J. res.: fundam. care. online 2013. jul./set. 5(3):174-180

patient, the definition of delay patient with variations in the periods of time established in each study. Summing the two types of delay, the patient is 73% of the total delay.¹¹

Patients who have more knowledge about TB recognize the symptoms and seek health services earlier.^{17,13,19} Knowledge is an independent variable that causes a significant delay in seeking health care. Education about TB assists individuals to seek early health services contributing to an early diagnosis.

The use of drugs for early symptoms of TB are also factors involved in delayed diagnosis and treatment of the disease since they seek health care because you cannot decrease the symptoms persist and worsen over time interfering in the activities of daily life. Demand for health services is also influenced by other internal and external factors like education, occupation, financial and psychological. The average delay in the patients is 15 days and is associated with identification of fever and cough as symptoms to be investigated.

The second type of delay is related to the health service, it is the time of the first consultation until the date of diagnosis. There are also variations from the average delays of services: 6¹⁶, 15¹⁸, 18¹⁸, 23¹⁴, and 39 days.¹⁵

Chang & Esrternam (2007) 12 disclose another type of delay related to treatment, considering the interval between the result of diagnosis to treatment initiation. In its findings were not observed many delays, 94.6% of the interviewed subjects started treatment immediately after diagnosis and as a result the range of 0 days since the patients were reported by phone to attend to the health service as soon as possible. The maximum time observed in this study was 7 days. Basnet, (2009), considers yet another type of delay, the total calculated by the sum of the delays of the patient and the health service. In this study, once verified the diagnosis, the maximum time was of 7 days.

Regarding the APS, Motta (2009) 20 to assess access to TB diagnosis in patients' perception noted that the Family Health Strategy generates greater access to diagnosis compared with Basic Health Units, as the first type of active search service occurs within the family and community. Another study²¹ conducted in the same county, concluded that there is in place a satisfactory performance to the extent of access to TB treatment. Both studies may be related directly to the FHS activeness.

Oliveira (2007)²², in Ribeirão Preto, concluded in their studies economic issues that influence access to diagnosis in health facilities. In another study¹³ demonstrated a delay in diagnosis of TB patients who first sought the services of APS because they went to various health units and this discontinuity of care contributed to the failure to investigate the diagnosis, causing its delay. The average time to diagnosis of APS in a service time is of 45 days. The time delay of the health service, particularly the APS must be reduced since this level of attention and resoluteness should provide continuity in care for service users' health.

There are several factors associated indirectly to smear-negative as a result of smoking, alcoholism, direct infection, diabetes, untreated pneumonia and the abandonment of the previous scheme. The negative smear leads to realization of culture for the diagnosis and therefore the delay resulted primarily in individuals co-infected with HIV because they have a decreased sensitivity to smear. These associations confirm the importance of a past history of good quality, which elucidates the diagnosis more quickly and the establishment of treatment.

Late detection, treatment noncompliance and ignorance of the cases by the epidemiological surveillance are factors which contribute to the increase in cases of disease²⁵. By Esrternam & Chang (2007)¹², the biggest factor is related to J. res.: fundam. care. online 2013. jul./set. 5(3):174-180

surveillance is not performed when the chest radiography and sputum examination during the first visit to health services.

Cavalcanti (2006)²⁶ in order to describe the clinical and epidemiological characteristics of access to health services in a group of elderly patients with TB, comparing them with those of young adults (control) treated in Recife, realized that the period time from symptom onset to initiation of treatment was similar between groups. Although TB in the elderly often have their diagnosis delayed by the difficulty of clinical recognition, which is often confused with the changes of aging or is not mentioned by the patient appropriately. It was also demonstrated the flaw in the health system in the study area due to a delay of over 60 days to the start of treatment, common to the whole population.

Regarding the length of symptoms, Bastos et al (2007)²⁷ evaluated the impact on the detection of cases by reducing the time for the screening of TB. Passing three weeks for a week. The study findings suggest that the probability of detection of TB cases increase if the period were reduced leading to an early diagnosis. Also suggest future studies to relate epidemiological profiles and cost-effectiveness for the need for this strategy.

The gender can also influence the delay in diagnosis. The males showed a greater delay in a study in South Africa. This may relate to the differences between men and women with self-care and seeking medical help. Women in rural areas showed a greater delay in diagnosis of TB, since they depend on their husbands or male relatives to drive them to health services. In urban areas, men showed greater delay due to preoccupation with work.¹²

CONCLUSION

Through the searches conducted, analyzed articles show that the delay of diagnosis is not a

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recent concern in the international arena, particularly in countries that stand out at the high rates of TB. The TB / HIV instigates research related to the diagnosis further by high rates of co-infection.

It is noteworthy that the type of delay in the diagnosis of TB can be health services, where there was greater variation found in studies of time, or delay of TB patients, which generally influence the way on time for diagnosis.

Several aspects were studied, around access to services, perceptions of disease, gender, levels of health care, a form of organization of health services, among others. All these factors must be related and should not be viewed in isolation and / or out of a political, economic and social.

We conclude that the differences found in studies that affect the time to diagnosis of TB are related to each locality, which have unique characteristics, very different from the Brazilian reality, and particularly the State of Rio de Janeiro.

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