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Opinion

The History of Tuberculosis Management in Costa Rica

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Abstract

Tuberculosis has been one of the earliest diseases to affect humans and is therefore considered an infectious disease-causing significant morbidity and mortality worldwide. The fight against this disease began in our country in the early 20th century with a sanatorium approach, and subsequently with the implementation of various strategies proposed by the World Health Organization to advance towards its elimination. The objective of this report is to provide information on the approach to tuberculosis in Costa Rica.

Methods: Qualitative descriptive study. It included the review of articles in scientific journals such as Scielo, systematic reviews in LILACS, PubMed, Cochrane, and data collected from the Epidemiological Surveillance Subarea of the Costa Rican Social Security Fund.

Results: The fight against tuberculosis began in our country in the 20th century with the establishment of the Sanatorio Durán (Durán Sanatorium). With the discovery of the Koch bacillus and medications for its treatment, there was a shift from a sanatorium approach to the implementation of different strategies suggested by the World Health Organization aimed at strengthening timely diagnosis and treatment, as well as surveillance of co-infection tuberculosis/human immunodeficiency virus, drug resistance, latent infection, and intensified case finding in vulnerable populations.

Conclusions: The Ministry of Health and the Costa Rican Social Security Fund have been supporting the fight against tuberculosis; however, achieving the goals set by the World Health Organization requires health authorities to continue prioritizing the fight against this disease, to provide all necessary resources and cutting-edge supplies for its diagnosis and timely treatment. Only in this way can we progress towards its elimination.

Keywords: tuberculosis, epidemiology, history, strategy.

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Abbreviations:
TB; Tuberculosis.
WHO; World Health Organization.
HIV; Human immunodeficiency virus.
CCSS; Caja Costarricense de Seguro Social (Costa Rican Social Security Fund).
PTB; Tuberculosis program.
TAES; Short-course treatment, strictly supervised.
ATAPS; Primary Health Care Technicians.

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Tuberculosis (TB) has been one of the earliest diseases to affect humans, thus it is considered an infectious disease-causing significant morbidity and mortality worldwide. It is estimated that a quarter of the world's population is infected with Mycobacterium tuberculosis, resulting in 10 million people developing this disease each year. The majority are adults from poor and marginalized regions who have been treated within weak healthcare systems, contributing to the death of 1.2 million individuals annually[1].

The increase in migrant populations and poverty in many underdeveloped countries (mainly in Asia and Africa) contributed to the emergence of acquired immunodeficiency syndrome in 1981 and led to tuberculosis being declared a 'global emergency' by the World Health Organization (WHO) in 1993.[1] As a result, in 1999, the WHO proposed various strategies to eliminate TB, urging countries to prioritize it as a national interest and priority. The objective of this study is to provide information on the history of tuberculosis management in Costa Rica, towards eliminating it as a public health problem.

Methods

Qualitative descriptive study. It included the review of articles in scientific journals such as Scielo, systematic reviews in LILACS, PubMed, Cochrane, and a review of data collected in the Epidemiological Surveillance Subarea of the Caja Costarricense de Seguro Social (Costa Rican Social Security Fund).

Results

In Costa Rica, like in other countries around the world, the fight against TB began in the early 20th century, incorporating a series of appropriate strategies for disease control. Data have been collected from historical archives of the Ministry of Health, the anti-tuberculosis campaign, a series of articles by Mr. Carlos Guillén, and the newspaper La Nación. Additionally, Dr. Georgina López managed to find information regarding TB management in the 20th century.

Sanatorio Durán (Durán Sanatorium): In 1915, the first sanatorium in the country was established, initially named Sanatorio Carit. In 1931, it was renamed Sanatorio Durán in honor of its founder, Dr. Carlos Durán Cartín. It opened its doors in 1918 with 35 beds and expanded its capacity in 1938 to 276 beds, including 90 beds for children. During the early years, patients with mild or severe disease were admitted, undergoing rest, varied diet, exposure to sunlight and fresh air, among other treatments as required by the severity of the disease.

Department of Tuberculosis Control: This department was established on August 6, 1937, by the Ministry of Health to centralize technical, administrative, regulatory, supervisory, coordination, and evaluation activities at the national level. The department included a pulmonary radiological research unit where photo fluoroscopic examinations were performed. If these indicated disease, the person was referred to the Central Dispensary where examinations were repeated to confirm or rule out the condition. In 1938, the program of mobile fluoroscopy units was initiated.

Franklin D. Roosevelt Preventorium: located in San Isidro de Coronado. Children between the ages of 1 and 14 were brought here, mostly the children of TB patients. The objective was to isolate them from their sick parents to prevent contagion. Certain conditions were considered for sending these children: that the mother and father, or only the mother, were ill and that they had no relatives who could take care of them. A variety of services were provided here, such as: good nutrition, primary and religious education, recreation, medical and dental care, among others.

Central Anti-tuberculosis Dispensary began functioning in 1931. It was responsible for clinical diagnosis, bacteriological and radiological diagnosis of patients, national registry active TB cases, consultation service for institutional patients or referred by other doctors, as well as the distribution of active cases for sanatorium treatment, hospital and outpatient.

National Hospital for Tuberculosis: this opened its doors in 1958 with a capacity of 300 beds. This hospital provided diagnosis and treatment, assistance medical-surgical and nursing. Also, it researches activities, as well as training human resources. In 1976, the building that for many years served for the care of TB patients but due to the transfer of the hospital institutions to the Costa Rican Social Security Fund (CCSS)- it was transformed into a hospital for the exclusive care of elderly patients over 60 years of age.

Restructuring of the TB Program: Through a retrospective study conducted in 1998 by Dr. Zeidy Mata titled "Factors influencing Tuberculosis control in Costa Rica, 1998-1999," several causes hindering progress towards controlling this disease were identified. For instance, the centralization of TB patient management in national hospitals, lack of knowledge about essential activities at the primary care level such as detection, diagnosis, treatment supervision, contact tracing, and the absence of a standardized protocol for managing drug-sensitive TB and drug-resistant TB were highlighted.

This prompted health authorities at that time to reconsider their approach to tackling this disease. It was during this period that they sought advice from the Pan American Health Organization to initiate the implementation of the strategy of Directly Observed Treatment Short-Course (DOTS).

TAES Strategy: This was the first strategy implemented by the Costa Rican Social Security Fund (CCSS) starting in 1999, initially in the Central Pacific region as a pilot area. By late 2003, its implementation had been achieved across all seven health regions. This initiative included third-party procurement facilities (private establishments providing services to CCSS) and correctional facilities.

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Its main activities prioritized diagnosis through sputum examination for pulmonary TB and culture for extrapulmonary tuberculosis. TAES were delivered by primary health care technicians in patients' places of residence or by community leaders trained in remote and challenging access areas. It also included a timely information system for patient registration and follow-up until recovery, calculation of epidemiological and operational indicators for understanding the epidemiological situation, as well as annual monitoring, supervision, and evaluation of each health facility.

Implementing this strategy required institutional commitment to ensure the necessary resources: laboratory supplies and regular medication supply for tackling the disease.

Stop TB Strategy: Proposed by the World Health Organization (WHO) in 2007, its goal was to reduce the global burden of TB by 2015. Alongside strengthening activities proposed with the TAES strategy, it initiated surveillance for TB/HIV coinfection through screening all confirmed TB cases.

In addition to WHO's proposed activities, the TB program introduced active case finding of respiratory symptomatics in penal centers and other high-risk populations. Pharmaceutical care aimed to ensure appropriate, safe, and convenient therapeutic drugs for patients. Nursing interviews employed self-care agency methodology and risk assessment for multi-drug-resistant tuberculosis to timely identify any resistance to anti-TB drugs. It also enhanced latent infection surveillance among healthcare personnel and patients with associated comorbidities to provide timely and strictly supervised chemoprophylaxis. Audits for treatment abandonment, deaths, and failures were also conducted.

Institutional directives were given to conduct operational research based on issues identified across different components of the TB program in healthcare establishments, aiming to generate timely intervention strategies.

Strategy towards the eradication of tuberculosis: with the implementation of this strategy, a strengthening of TB activities begins across all public and private healthcare services, in close collaboration with other social actors. An inter-institutional work plan is proposed to intensify the search for presumptive cases in all at-risk populations. Health authorities of the CCSS are urged to advance towards molecular diagnostic methods that are more sensitive, specific, and timely, as well as shortened treatments for both drug-sensitive and drug-resistant TB patients. Lastly, efforts are aimed at resuming TB/HIV collaboration activities to achieve joint programming for integrated service provision.

In our country, the fight against TB began in the 20th century, as evident. The Ministry of Health and CCSS institutions have implemented various strategies aligned with international recommendations of the time. Their objectives include timely detection, diagnosis, and treatment of TB patients to break the transmission chain and introduce tools to move towards eliminating TB as a public health problem.

The idea is to continue strengthening TB surveillance by developing a new epidemiological profile that not only categorizes TB cases by incidence and mortality but also identifies advanced diagnostic needs, shortened treatments for drug-sensitive and drug-resistant TB, and involves other social actors to support achieving elimination goals. However, despite all efforts made, increasing challenges arise in TB control, such as prioritizing surveillance of other emerging events, for instance, the COVID-19 pandemic.

In such situations, the unconditional support of health authorities is crucial to continue strengthening all components of TB control, ensuring universal access and coverage of health care that includes all identified at-risk groups.

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