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Letter to the Editor

Pulmonary tuberculosis in young people

Vitorino Modesto dos Santos

Catholic University and Armed Forces Hospital, Brasília-DF, Brazil

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Abstract: Tuberculosis is a global health problem and the main cause of death in the whole world. Young individuals are significantly affected in the low- and medium income countries. The children are more often infected by close contact with familiar adults at home, and lung tuberculosis with cavities plays a major role in environmental contamination. Their primary infection may evolve to primary tuberculosis without specific manifestations. The diagnostic challenges may be solved by higher clinical suspicion index associated with complementary investigation tools including tuberculin skin test and chest X-rays. These comments aim to enhance the awareness of lung tuberculosis at younger ages.

Keywords: children, adolescents, epidemiology, pulmonary tuberculosis.

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Correspondence to Prof. Vitorino Modesto dos Santos. Address: Hospital das Forças Armadas, Estrada do contorno do bosque s/n, Cruzeiro Novo, 70.658-900, Brasília-DF, Brazil. Phone: ##5561-39662103. Fax: ##5561-32331599. E-mai: vitorinomodesto@gmail.com

Introduction

I read the article of Awang et al. about severe pulmonary tuberculosis in young Malaysian patients, focusing clinical and imaging determinants of poor outcomes [1]. The majority of 388 evaluated patients had disease of minimal (69.8%) or moderate (23.5%) clinical severity, while 4.9% had no pulmonary lesion. Interestingly, among the 1.8% of individuals with far advanced lesions, none was HIV-positive. Moreover, the main determinants for the severe disease were tobacco smoking, absence of BCG vaccination, and positive pretreatment sputum smear for acid-fast bacilli (AFB) [1]. Mild cases were mostly (74.7%) detected by chest X-rays and 25.3% were severe forms. The hilar lymphadenopathies and lack of upper lobe cavitations were the main findings. The group with positive pretreatment AFB tests in sputum was 2.32 times more prone to have severe disease than those patients with the negative tests. This positivity has been associated with the extent of pulmonary lesions and presence and size of cavitations [1]. The knowledge of determinants will favor the programs of tuberculosis (TB) control.

Brazilian researches have also contributed with their findings about useful determinants in the diagnosis of pulmonary TB in young populations [2, 3]. Dos Santos et al. described the chest computed tomography (CT) changes detected in 20 immunocompetent children with ages under 36 months, in the Rio de Janeiro city [2]. They studied 12 boys and 8 girls, with a mean age of 18 months and an age range between 1 and 36 months. All lesions were multiple and varied, and 90% bilateral. Lymph node enlargement occurred in all cases, 95% in the right paratracheal chain, 40% calcified, 40% causing bronchial compression, and 70% with central abnormality. All patients had lung consolidations, 50% had cavitations associated with other changes. Parenchymal nodules of diverse diameters were found, but a sole case was miliary [2]. The authors emphasized the importance of the CT for early diagnosis and treatment. Sousa et al. retrospectively studied clinical and epidemiological findings of TB in 88 files from patients aged zero to eighteen years and hospitalized in the state of Ceará [3]. Seventy-four of the patients had more than 10 years of age, and 49 (56%) were males. The commonest form of was pulmonary TB (59%) and 38% was of mixed type; and the main features of the pulmonary TB were female sex, expectoration, and weight loss. HIV coinfection increases the risk of TB disease development from the latent state; and the 3 cases found were related to the mixed form of TB (odds ratio near to 14-fold) [3]. The authors stressed the role of nurses in TB control by breaking the transmission chain. Fernandes et al. studied 917 household contacts from 160 households; 55.4% were female; the median age was 21.0 years (0.3-87 years), and 66.4% had TB infection [4]. They found the infection rate increasing with age (63.3% in girls <5 years to 75.4% in women ≥40 years; and 44.9% in boys <5 years to 73.6% in men ≥40 years). The age at which TB infection increases most was different between females and males. Studies must clear the role of susceptibility, exposure outside the household or other factors [4]. The authors argued on the possible development of a protective effect after menarche. McIntosh et al. analyzed contact studies in Vitória, Brazil and Kampala, Uganda, enrolling households with an individual recently diagnosed with pulmonary TB [5]. They found the probability of community transmission to be lower in Brazil (from 0.13 for young children to 0.50 in adults) than in Uganda (from 0.21 to 0.69, respectively). Moreover, children were more likely to be infected in the household than adults, and by an adult in the household, than by a community source. The possible TB transmission from outside source

increases with age, and depends upon the local incidence rate [5]. The authors emphasized the role of well understanding the dynamic of TB transmission.

Zabaleta et al. studied the variables of origin, gender, age, type of TB, and HIV status in resistant and sensitive cases in Colombian children under 15 years of age [6]. They studied 565 cases, 70.6% with the pulmonary form, 50.6% women, and 1.4% had TB and HIV coinfection; 89.1% were new cases with multidrug-resistant TB of 3.9% and a global resistance of 9.5%. Extremely resistant TB in the new cases was 9.0% [6]. The authors stressed the need for more sensitive tests, to get a quick early diagnosis and to prevent severe forms of the disease; the study of contacts must be improved to detect sources of contagion and new cases, allowing the monitoring of resistance in children. The commented works contribute to prevention and control of TB in young people.

Conflict of interest

There is no conflict of interest to disclaim.

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Authors:
Vitorino Modesto dos Santos – MD, PhD, Professor of Internal Medicine, Catholic University and Armed Forces Hospital, Brasília-DF, Brazil. https://orcid.org/0000-0002-7033-6074