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# Structure of First Detected Tuberculosis in Children during Covid 19 Pandemic Period

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**ANNOTATION:** A study was carried out of 241 case histories of children aged 3 to 12, who were in the Andijan regional tuberculosis dispensary during the pandemic from March 2019 to the end of 2020. During the COVID 19 pandemic, local forms of tuberculosis are more often detected in children in 112, which is two times higher than the number of pre-local forms of tuberculosis. This fact can also be associated with the fact that patients and relatives did not pay attention to the early signs of tuberculosis, only an increase in temperature, a persistent dry cough, sometimes with a small amount of sputum, served as a reason to go to the clinic. In this study, we were unable to trace the severity of the course of tuberculosis in relation to the size of the BCG scar, however, there is a connection with concomitant diseases that reduce the body's defenses.

**KEYWORDS:** tuberculosis in children; pandemic Covid-19; BCG scar; the severity of the course of tuberculosis; diagnostics by bacterioscopy; GeneXpert Rif real-time PCR method; Diaskintest.

## I. RELEVANCE

The main epidemiological indicators for tuberculosis in Uzbekistan are 1.5-2 times lower than in other countries of the Central Asian region [6]. In the Republic of Uzbekistan, in recent years, there has been a decrease in epidemiological indicators for tuberculosis in children. At the same time, complicated forms of the disease were still recorded in the structure of tuberculosis, which was associated with the lack of screening of tuberculosis by the method of tuberculin diagnostics over the past 5 years [1]. In recent years, tuberculin has again begun to be used for the early detection of tuberculosis in children, and the Diaskin test has also become more widely used in terms of differential diagnosis and determination of the activity of the tuberculosis process. In domestic and foreign literature, contradictory data have appeared that those vaccinated against tuberculosis are less likely to die from a new coronavirus infection, because vaccination helps to more actively produce substances that protect against viruses. As evidence, the mortality rate from Covid-19 is compared in countries where the population was massively vaccinated with BCG vaccine, and countries where such vaccination was not done [2,4]. For example, Italy is cited - they say, BCG is not done in this country, so people get sick and die from coronavirus here much more often. According to other authors, although the vaccination against tuberculosis in Italy has ceased to be done relatively recently, at the same time it was the elderly, who today most of all suffer from infection, were vaccinated in kindergarten, and in theory, they should have had powerful antiviral immunity [3,5, 7].

**Objective of the study:** to study the structure of newly diagnosed tuberculosis in children during the COVID 19 pandemic and the features of the course of tuberculosis in children who have undergone COVID 19.

## II. MATERIALS AND METHODS OF RESEARCH

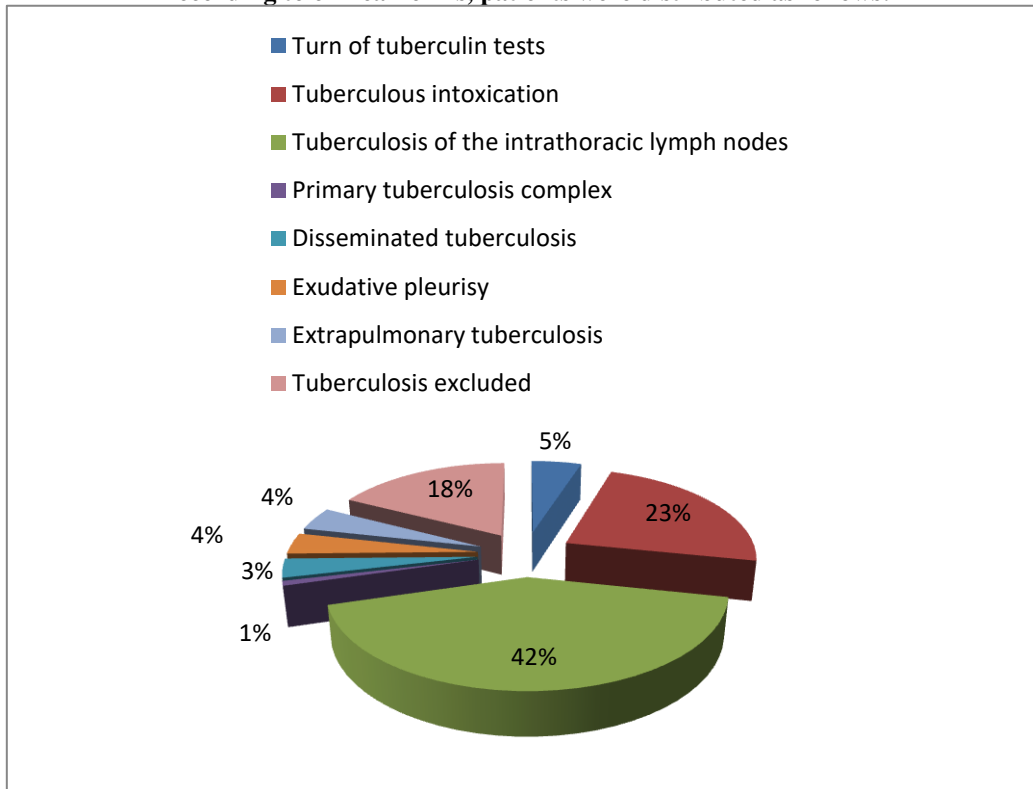
the study included children who were examined and treated at the children's department of the Andijan Regional TB Dispensary during the quarantine period for COVID 19 in 2019-2020. An analysis of 241 case histories was carried out. All children underwent a comprehensive study to clarify the diagnosis of tuberculosis with the inclusion of the Mantoux test, Diaskintest, the pathological material was examined by GeneXpert Rif real-time PCR, culture, ultrasound. If necessary, in addition to the traditional X-ray examination, computed tomography was performed.



**III. RESULTS OF THE STUDY AND THEIR DISCUSSION**

the analysis of the obtained studies revealed that more often tuberculosis is detected in boys 163 (67.6%), children living in the countryside predominated - 183 (75.9%). The age of children varied from 3 to 13 (from 3 to 5 to 28; 6 to 8 years - 104; 9 to 11 years old - 85; over 12 years old - 24), most often at the age from 3 to 8 years old - 132 patients.

**According to clinical forms, patients were distributed as follows:**



As can be seen from the diagram, 42% (102 patients) were diagnosed with tuberculosis of the intrathoracic lymph nodes, 23% (56 patients) were diagnosed with tuberculous intoxication; turn of tuberculin probes - 12 patients (5%); primary tuberculosis complex in 2 patients, disseminated tuberculosis in 8, exudative pleurisy in 9, extrapulmonary forms of tuberculosis - in 10 (spondylitis - 2, tuberculosis of peripheral lymph nodes - 8 patients). Up to local forms of primary tuberculosis were detected in 56 patients. While, in 112, local forms are 2 times more, which indicates an untimely diagnosis of primary tuberculosis. During the quarantine period for Covid-19, patients came late due to fever and the appearance of a cough, which were initially regarded as symptoms of Covid-19 when they went to the clinic, but a careful study of the history, X-ray examinations and the Mantoux and Diaskintest test made it possible to establish the diagnosis tuberculosis.

HIV infection was diagnosed in 34 patients, the status was established for the first time in 7, and disseminated tuberculosis was revealed during examination in 4 patients. Another 2 patients with disseminated tuberculosis were diagnosed with HIV 2 years ago. Of the 25 remaining HIV-infected, 1 had primary tuberculosis complex, 25 had tuberculosis of the intrathoracic lymph nodes. 48 patients had a history of chronic diseases of the bronchopulmonary system.

In 42 patients, after a thorough complex clinic-laboratory and instrumental examination by the medical commission, tuberculosis was excluded. 36 of them had contact with COVID 19 patients, these are parents and older brothers and sisters who were treated for COVID 19 at home.

We analyzed the size of the BCG scar in relation to the severity of the tuberculous process, so in 27 patients the scar was absent (15 of them had tuberculosis of the intrathoracic lymph nodes, tuberculous intoxication in 6, turn of the tuberculin test in 6). In 65 patients, the BCG scar was up to 3 mm (of which the tuberculin test was twisted in 6, tubin-toxication in 19, in 2 there was exudative pleurisy, in the rest there was tuberculosis of the intrathoracic lymph nodes, disseminated tuberculosis, primary tuberculosis complex, tuberculosis of the intrathoracic lymph nodes and extrapulmonary forms of tuberculosis), and 34 had HIV status, 48 had chronic nonspecific diseases of the



bronchopulmonary system. Thus, the relationship between the size of the BCG scar and the severity of developing tuberculosis in children has not been established, but the presence of concomitant diseases, such as HIV-chronic nonspecific diseases of the bronchopulmonary system, is an important factor contributing to a decrease in the body's defenses in a child and the development of tuberculosis against this background. Depending on the degree of decreased immunity, using the example of HIV-infected people, it can be indicated that with CD-4 less than 100 cells / ml, they had disseminated pulmonary tuberculosis.

As indicated in the diagram, 42 patients were excluded from tuberculosis. The reasons for hospitalization of these patients before the examination were: prolonged subfebrile condition for more than a month, dry, hacking cough with a small amount of sputum (the duration of the cough was also more than 3 weeks), weakness and fatigue, and decreased appetite. The above symptoms alerted pediatricians to tuberculosis. This was also due to the fact that in the domestic and foreign literature there was information about the reactivation and severe course of tuberculosis in survivors of COVID 19 [2,3,4,5]. In 36 patients, no COVID 19 was detected by PCR. Ig G was detected in 6 patients, this was assessed as asymptomatic COVID 19. In 23 children with a cough with a small amount of sputum (these are children aged 8-11 years), a sputum study was carried out using bacterioscopy and real-time PCR GeneXpert Rif the results were negative, Diaskintest also gave a negative result. In addition, X-ray and especially computed tomography made it possible to exclude the tuberculous process.

#### IV. CONCLUSIONS

during the COVID 19 pandemic, local forms of tuberculosis are more often detected in children in 112, which is two times higher than the number of pre-local forms of tuberculosis. This fact can also be associated with the fact that patients and relatives did not pay attention to the early signs of tuberculosis, only an increase in temperature, a persistent dry cough, sometimes with a small amount of sputum, served as a reason to go to the clinic. In this study, we were unable to trace the severity of tuberculosis in relation to the size of the BCG scar, however, there is a connection with concomitant diseases that reduce the body's defenses.

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