



FEATURES OF PULMONARY TUBERCULOSIS IN CHILDREN WITH HELMINTHIASIS

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Annotation

Children and adolescents are most susceptible to the development of tuberculosis, especially when they have concomitant diseases, which leads to a decrease in both humoral and cellular immunity. One of these concomitant diseases is helminthiasis. It has been proven that the body's immunological reactivity decreases with worm invasion, which, in turn, contributes to the development of various infections, including tuberculosis. The purpose of the work is to study the peculiarities of the clinical course of primary tuberculosis in children with helminthosis treated in the center of phthisiology and pulmonology of the Samarkand region, as well as the archival medical history of the patients. The most common type of helminthiasis is hymenolepidosis - 40%, enterobiosis - 33%, less - giardiasis (22%) and ascariasis (5%). Symptoms of intoxication and damage to the bronchus-pulmonary system are detected when worm infestation is observed in patients with primary tuberculosis. The presence of worm infestation has a negative effect on the treatment of patients with pulmonary tuberculosis, therefore, treatment measures should correspond to the course of both diseases.

Keywords: primary tuberculosis, helminthosis, children, patient, chemotherapy.

Relevance

At the current stage of development of society and healthcare, we can emphasize that tuberculosis can affect almost all layers of the population, all age groups, and is





especially dangerous for children and adolescents [1,4]. In the Republic of Uzbekistan, the epidemiological situation has improved due to the use of large-scale state practices for the prevention of tuberculosis, a significant decrease in the prevalence of tuberculosis among children and adolescents is observed [2,4]. Important immunological reconstructions occur in the body vaccinated against tuberculosis, but in cases where BCG vaccination is not carried out and contact with a patient with tuberculosis is not excluded, especially in young children, a severe course of the disease can be observed. The incidence of tuberculosis among children is considered to be a factor indicating the level of the epidemiological situation among adults. The severe course of tuberculosis in children and adolescents is probably due to the specific characteristics of their immunological reactivity [2,5,8,9], the massiveness of the infection, the lack of immunity due to vaccination, and the weakening of the body due to the influence of other diseases. The increase in the number of drug-resistant strains of mycobacteria is also important.

It is known that children and adolescents are most susceptible to the development of tuberculosis, especially when they have concomitant diseases, which leads to a decrease in both humoral and cellular immunity [3,5,11]. One of these concomitant diseases is helminthiasis. It has been proven that the body's immunological reactivity decreases with worm invasion, which, in turn, contributes to the development of various infections, including tuberculosis.

In Europe, every third population is infected with worms. According to the annual incidence rate in Uzbekistan, worm infestation is detected in 1,000 of every 100,000 inhabitants [3,7]. The most common helminthiasis in Uzbekistan: enterobiosis, ascariasis, trematodosis. The incidence rate of enterobiosis in the country is 1,000 cases per 100,000 population. Among these patients, 90% are children, their age is from 1 to 3 years.

In the literature of recent years, the clinical course of tuberculosis against the background of worm infestation in adults has been widely covered [1,6,10,12], but there are not enough works devoted to the study of these issues in children, and therefore we set ourselves the following goals and we set the tasks.

Purpose of the study. To study the specifics of the clinical course of primary tuberculosis in children with helminthiasis treated in the center of phthisiology and pulmonology of Samarkand region and the medical history of patients and archival medical history.





Materials and methods of verification. In this study, 60 sick children who were treated in the children's department of the Samarkand regional phthisiatrics and pulmonology center during the years 2017-2022 were studied, and the patients were divided into 2 groups: the first group included 40 children with primary tuberculosis with helminthiasis. The second group consisted of 20 patients with primary forms of tuberculosis. Both groups of patients were dominated by children and adolescents aged 3 to 14 years. The patients of both groups were similar in terms of gender, boys were 42,5 and 35%, and girls were 57,5 and 65%, respectively. The first clinical forms of primary tuberculosis, i.e. primary tuberculosis complex, diffuse pulmonary tuberculosis, tuberculosis of intrathoracic lymph nodes, were observed in patients of I and II groups. In the first group of patients, the inflammatory stage of tuberculosis was diagnosed in 33 (82,5%) patients, the absorption stage - in 7 (17,5%) patients, in the control group, the inflammatory stage was diagnosed in 14 (70%) patients, so and the stage of growth - in 6 (30%) patients, its presence was confirmed radiologically. Accordingly, in the main group of patients compared to patients in the control group, primary tuberculosis complex and diffuse tuberculosis are more common - 20 and 15%, 10 and 10%; Tuberculosis of intrathoracic lymph nodes is significantly less common - 65% and 80%.

Test results and discussion. According to the Radiological characteristics of the tuberculosis process in the lungs, patients were distributed as follows: in the first group, specific changes in the lungs in 28 (70%) patients were manifested in the form of numbered foci, round or bounded inflamed shadows or root inflammation. Such changes were detected by X-ray examination in 18 (90%) patients of the II group. In the remaining cases, in 6 (30%) patients in group I and 2 (10%) patients in group II, the tuberculosis process was manifested in the form of diffuse lung lesions and wide inflamed shadows. Therefore, in the group of patients suffering from tuberculosis process and worm invasion, it was found that the spread of the process, covering one or more lung lobes, is 3 times more frequent. The presence or absence of helminthiasis was confirmed by anamnesis data and the results of coprological analyses. The most common type of helminthiasis is hymenolepidosis - 40%, enterobiosis - 33%, less - giardiasis (22%) and ascariasis (5%). Studies have shown that during the first 6 months of hospitalization and treatment, the dynamics of clinical symptoms and objective research data were different in patients of the main and control groups.



Particular symptoms (sweating, weakness, chest pain, cough, dry and wet wheezing) have often been identified among patients in the main group when identifying tuberculosis. We think that the symptoms of intoxication were caused by tuberculosis and long-term vomiting invasion. Multiple observation of the symptoms of local lesions of the Broncho-pulmonary system and their slow absorption is explained by the peculiarities of the specific inflammatory process in the lungs, the nature of changes in the tracheobronchial tree. In the first 3-4 months of antibiotic therapy, the dynamics of complaints caused by damage to the hepatobiliary system and objective symptoms were analyzed. A significant increase in complaints was found in patients with mixed pathology "tuberculosis-helminthiasis": nausea, vomiting, headache, dizziness, sweating, weakness, chills, decreased appetite, chest pain, shortness of breath, cough, dry or wet wheezing in the lungs, itching and skin rashes. The frequency of pain under the right rib or in the epigastric area increased ($p < 0.05$) from 42.5% to 50%. In superficial and deep palpation of the abdominal organs, 32.5% of patients observed a pain reaction in the area below the right rib, and 41.1% during chemotherapy ($p < 0.05$). The positive symptoms of Ortner and Myussy were detected in 17.5% of patients when taken, and were detected in 26% of patients over the next 3 months ($p < 0.01$). At the time of admission, yellowing of the skin and subicteric sclera was detected in 6 (15%) children and adolescents, and in 2 (5%) patients, these symptoms appeared during treatment ($p > 0.05$). Hospitalized patients in the control group did not notice itching and skin rashes. In the course of 3 months of treatment, complaints were first observed in only 4 patients without any objective symptoms caused by damage to the hepatobiliary system. When evaluating laboratory data, the dynamics of indicators of hemogram and erythrocyte sedimentation rate (ESR) were analyzed. Compared to the control group, it was found that in patients with pulmonary tuberculosis, where vomiting invasions were observed, there were not only significant changes in the hemogram and ESR, but also the process of their normalization. However, it should be noted that the level of changes in the hemogram and The Goat is largely determined by the main disease - pulmonary tuberculosis, in addition to the content of eosinophils. Thus, among patients in the first group, the presence of 5-11% eosinophils in the blood in 33 (82.5%) cases before treatment and more than 10% cases of eosinophilia were recorded in 7 (17.5%) patients. During chemotherapy, eosinophils increased moderately in 17 (42.5%) patients with tuberculosis, where vomiting invasions were observed, while in 9 (22.5%) patients there was an increase in eosinophilia (more than 10%). In patients in the first group, the average amount of eosinophils in the blood increased not only in the second month of treatment (6-15, 0%), but also in the third (5-12,5%) and fourth (3-7, 5%)





month practically did not change. Patients with pulmonary tuberculosis, in which vomiting invasions were not observed, had a hemogram and obvious changes in the goat, and their meowing was maintained at a normal level. The degree of changes in the hemogram and EST is primarily determined by primary pulmonary tuberculosis. In the first place in the blood biochemical analysis, it was found that patients in the main group have hypoproteinemia and dysproteinemia. Thus, hypoproteinemia in 32% of existing individuals with the examined placenta disease had an indicator of up to $62,0 + 1,6$ g/L. Thymol test, the level of bilirubin in the blood is within the upper limits of the norm, while in patients in the control group, a state of dysproteinemia was observed. Thus, by the beginning of treatment, the alanine aminotransferase indicator exceeded the norm in 10% of patients, in the first month of treatment - in 30% of patients, in the second month - in 75% of patients, in the third month - in 25% of patients. Liver values such as thymol test, blood bilirubin levels, aminotransferase activity were at normal levels. A comprehensive study of the billiard pathways (ultrasound of the liver and gallbladder) was found to be in the hyperkinetic 6 (15%) and hypokinetic 3 (7,5%) types of dyskinetic disorders of the gallbladder. Among the main group of patients who underwent ultrasound in 31 (77,5%) cases, the function of movement of the gallbladder did not deviate from the norm. In patients in the control group, dyskinesic disorders of the gallbladder were not detected on ultrasound of the liver and gallbladder. In all 20 (100%) cases, it was found that the movement function of the gallbladder did not deviate from the norm among patients in the control group who underwent ultrasound. When studying the effectiveness of complex treatment of patients in the main group, we conditionally divided two categories of patients depending on the tolerability of the drugs. The first category is patients who can carry antibacterial drugs well. The second category included patients with adverse reactions in response to antibacterial drugs. It has been found that every second patient with primary tuberculosis who has had a worm invasion will experience side effects in relation to anti-tuberculosis drugs.

Thus, in 7 (17,5%) patients, allergic reactions were observed, manifested by persistent eosinophilia in the blood. Hepatotoxic and neurotoxic side reactions were observed in 10 (25%) patients, and toxic-allergic side effects of drugs were observed in 3 (7,5%) children. Depending on the rate of absorption of inflammatory changes in the pulmonary parenchyma and root, three types of involution are distinguished: fast, medium and slow. The rapid type of involution is characterized by the absorption of inflammatory changes in the pulmonary parenchyma and Root during 1-2 months of chemotherapy, in the middle type - after 2-4 months, the presence of involution is observed, in the slow type - absorption after 6 months. Apparently, the presence of





vomiting invasion has a negative effect on the treatment of patients with pulmonary tuberculosis, so treatment measures must correspond to the course of both diseases.

Conclusion

The most common type of helminthiasis is hymenolepidosis - 40%, enterobiosis - 33%, less often - lyambliosis (22%) and ascariasis (5%). When helminthiasis is observed in patients with primary tuberculosis, signs of intoxication and damage to the Broncho-pulmonary system are detected. The loss of these symptoms lasts longer than with "clean" tuberculosis. Until mixed pathology was detected, 82,5% of patients detected persistent eosinophilia in the blood. In the course of chemotherapy, it grows and does not have the property of fading. The alanine aminotransferase indicator exceeded the norm in 10% of patients with the onset of treatment measures, in the first month of treatment - in 30% of patients, in the second month - in 75% of patients, in the third - in 25% of patients. In the first group of patients, the amount of hypoproteinemia and dysproteinemia was observed 2,5 times more than in the control group. Dyskinetic disorders in the Billiar system were observed in the hyperkinetic type (15%). The presence of vomiting invasion has a negative effect on the treatment of patients with pulmonary tuberculosis, so treatment measures must correspond to the course of both diseases.

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