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Transitional Characteristics of Lung TB in Children with Helmintosis

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Abstract: ***Children and adolescents are most susceptible to the development of tuberculosis, especially when they have concomitant diseases, which lead to a decrease in both humoral and cellular immunity. One of these co-morbidities is helminthiasis. It has been proven that the body's immune response to worm infestation is reduced, which in turn contributes to the addition of various infections, including tuberculosis. The aim of the study was to study the specifics of the clinical course of primary tuberculosis in children with helminthiasis treated at the Samarkand Regional Center for Tuberculosis and Pulmonology, the patient's medical history and archival history. The most common types of helminthiasis are hymenolepidosis - 40%, enterobiosis - 33%, less - giardiasis (22%) and ascariasis (5%). Signs of intoxication and damage to the broncho-pulmonary system are detected when worm infestation is observed in patients with primary tuberculosis. The presence of a worm infestation adversely affects the treatment of patients with pulmonary tuberculosis, so treatment measures should be appropriate for the course of both diseases.***

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

I. RELEVANCE OF THE TOPIC

At the current stage of development of society and health care, we can emphasize that TB can affect almost all segments of the population, all age groups and is especially dangerous for children and adolescents [1,4]. The epidemiological situation in the Republic of Uzbekistan has improved due to the large-scale state practice of tuberculosis prevention, and there has been a significant reduction in the prevalence of tuberculosis among children and adolescents [2,4]. Significant immunological transformations occur in the body vaccinated against tuberculosis, but severe disease can be observed, especially in young children, in cases where vaccination against TB is not performed and contact with a patient with tuberculosis is not excluded. The incidence of tuberculosis in children is a factor in the extent of the epidemiological situation among adults. Severe tuberculosis in children and adolescents is probably associated with specific features of their immunological reactivity [2,5,8,9], the severity of the infection, the lack of immunity as a result of vaccination and the weakening of the organism under the influence of other diseases 'liq. The increase in the number of drug-resistant strains of mycobacteria is also important.

It is known that children and adolescents are most prone to the development of tuberculosis, especially when they have concomitant diseases, which leads to a decrease in both humoral and cellular immunity [3,5]. One of these co-morbidities is helminthiasis. It has been proven that the body's immune response to worm infestation is reduced, which in turn contributes to the addition of various infections, including tuberculosis.

One in three people in Europe is infected with worms. According to the annual incidence rate in Uzbekistan, worm infestation is detected in one in every 100,000 people [3,7]. The most common helminthiases in Uzbekistan: enterobiosis, ascariasis, trematodes. The incidence of enterobiosis in the country is one thousand cases per one hundred thousand population. Among these patients, 90% were children, ranging in age from one to three years.

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

II. PURPOSE OF THE STUDY

To study the specifics of the clinical course of primary tuberculosis in children with helminthiasis treated at the Samarkand Regional Center for Tuberculosis and Pulmonology, the patient's medical history and archival history.

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III. MATERIALS AND INSPECTION METHODS

In this study, 60 sick children treated in the pediatric department of the Samarkand Regional Center for Tuberculosis and Pulmonology in 2017-2021 were studied, and 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. Children and adolescents aged 3 to 14 years predominated in both groups of patients. Patients in both groups were sexually identical, with 42.5 and 35% of boys and 57.5 and 65% of girls, respectively. The first clinical forms of primary tuberculosis, such as primary tuberculosis complex, diffuse pulmonary tuberculosis, and intrathoracic lymph node tuberculosis, were observed in patients in groups I and II. 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 - in 14 (70%) patients, the inflammatory stage, so The stage of death is radiologically confirmed in 6 (30%) patients. Accordingly, primary tuberculosis complex and diffuse tuberculosis are more common in the main group of patients than in the control group - 20 and 15%, 10 and 10%, respectively; intracranial lymph node tuberculosis is significantly less common - 65% and 80%, respectively.

IV. THE RESULTS OF THE INVESTIGATION AND THEIR DISCUSSION

According to the radiological features of the pulmonary process of tuberculosis, patients were distributed as follows: in the first group 28 (70%) patients had specific changes in the lungs in the form of numerous foci, round or limited inflammatory shadows or root inflammation appeared in the form of Such changes were detected by X-ray examination in 18 (90%) patients in group II. In the remaining cases, tuberculosis in 6 (30%) patients in group I and in 2 (10%) patients in group II was manifested in the form of diffuse lung lesions and extensive inflammatory shadows. Consequently, the prevalence of the process in a group of patients with tuberculosis and worm infestation was found to be 3 times higher with coverage of one or more parts of the lung. The presence or absence of helminthiasis was confirmed by anamnestic data and coprological analysis. The most common types of helminthiasis are hymenolepidosis - 40%, enterobiosis - 33%, less - giardiasis (22%) and ascariasis (5%). Studies have shown that the dynamics of clinical symptoms and objective research data varied in patients in the primary and control groups during the first 6 months of hospitalization and treatment.

Specific symptoms (sweating, weakness, chest pain, cough, dry and wet wheezing) were often detected in the main group of patients when tuberculosis was diagnosed. We believe that the symptoms of intoxication are caused by tuberculosis and long-term worm infestation. The frequent observation of signs of local damage to the bronchopulmonary system and their slow absorption are 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 and objective symptoms resulting from damage to the hepatobiliary system were analyzed. Significant increase in complaints was found in patients with mixed pathology "tuberculosis-helminthiasis": nausea, vomiting, headache, dizziness, sweating, weakness, tremors, loss of appetite, chest pain , shortness of breath, cough, dry or wet wheezing in the lungs, itching and skin rash. The incidence of pain under the right rib or in the epigastric area increased ($p < 0.05$) from 42.5% to 50%. On superficial and deep palpation of the abdominal organs, 32.5% of patients had a painful reaction in the right subcostal area, and 41.1% during chemotherapy ($p < 0.05$). Positive symptoms of Ortner and Musci were detected in 17.5% of patients upon admission, and in 26% of patients within the next 3 months ($p < 0.01$). At the time of admission, jaundice and subicteric sclera were detected in 6 (15%) children and adolescents, and in 2 (5%) patients, these symptoms occurred during treatment ($p > 0.05$). Hospitalized patients in the control group did not experience itching or skin rash. During the 3-month treatment period, complaints were observed for the first time in only 4 patients with no objective symptoms resulting from damage to the hepatobiliary system. In the evaluation of laboratory data, the dynamics of hemogram and erythrocyte sedimentation rate (ESR) were analyzed. Compared with the control group, patients with pulmonary tuberculosis with worm infestation were found to have not only significant changes in hemogram and ECG, but also a decrease in their normalization process. However, it should be noted that the degree of changes in the hemogram and ECG, in addition to the composition of eosinophils, is determined by the underlying disease - pulmonary tuberculosis. Thus, in 33 (82.5%) cases, 5–11% of eosinophils were present in the blood before treatment among patients in the first group, and more than 10% of cases of eosinophilia were reported in 7 (17.5%) patients. Eosinophils were moderately elevated in 17 (42.5%) patients with tuberculosis with worm infestation during chemotherapy, and an increase in eosinophilia (more than 10%) was observed in 9 (22.5%) patients. In the first group of patients, the average amount of eosinophils in the blood increased not only in the second month of treatment (6-15.0%), but almost unchanged in the third (5-12.5%) and fourth (3-7.5%) months . Hemograms and ECG of patients with pulmonary tuberculosis without worm infestation revealed significant changes and their normalization remained normal. The degree of changes in the hemogram and ECG is determined primarily by primary pulmonary tuberculosis.

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Blood biochemical analysis revealed primarily the presence of hypoproteinemia and dysproteinemia in the main group of patients. Thus, in 32% of the patients with comorbidities examined, hypoproteinemia ranged from 62.0 + 1.6 g / l. The thymol test showed elevated levels of bilirubin in the blood, and dysproteinemia was observed in the control group. Thus, before the start of treatment, the ALAT level 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 parameters such as thymol test, bilirubin level in the blood, aminotransferase activity were normal. A comprehensive study of the biliary tract (ultrasound examination of the liver and gallbladder) revealed that dyskinetic disorders of the gallbladder were in hyperkinetic 6 (15%) and hypokinetic 3 (7.5%) types. In 31 (77.5%) cases, the movement function of the gallbladder was not abnormal among the main group of patients who underwent ultrasound examination. Ultrasound examination of the liver and gallbladder in patients in the control group revealed no dyskinetic disorders of the gallbladder. In all 20 (100%) cases, the control function of the gallbladder was found to be abnormal among the control group patients who underwent ultrasound examination. In studying the effectiveness of complex treatment of patients in the main group, we conditionally separated two categories of patients based on drug tolerance. The first category is patients who are well tolerated antibacterial drugs. The second category included patients with adverse reactions to antibacterial drugs. One in two patients with primary tuberculosis with worm infestation was found to have an adverse reaction to anti-tuberculosis drugs.

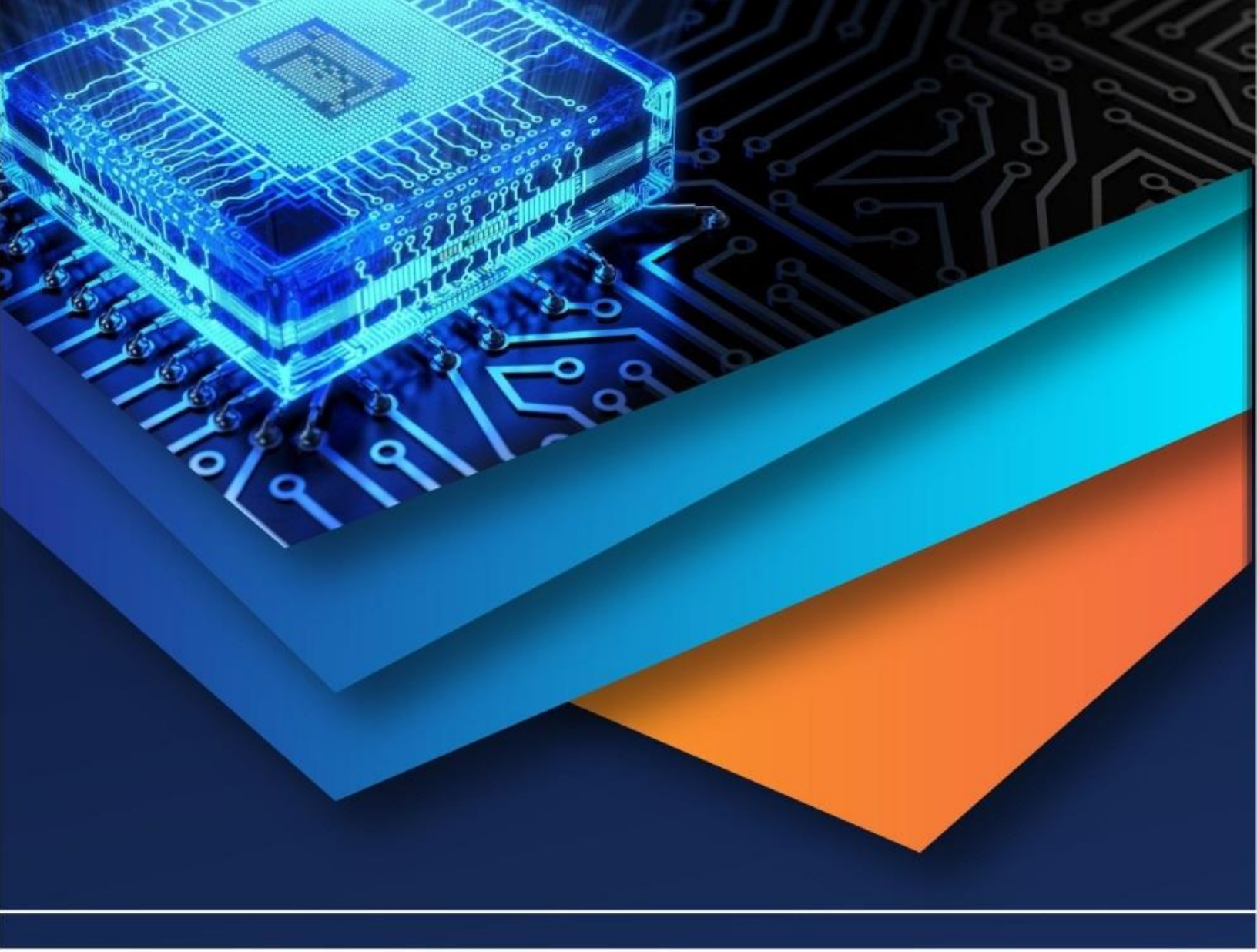
Thus, in 7 (17.5%) patients allergic reactions with persistent eosinophilia were observed in the blood. Hepatotoxic and neurotoxic adverse reactions were observed in 10 (25%) patients, and toxic-allergic adverse drug reactions in 3 (7.5%) children. Inflammatory changes in the lung parenchyma and root are divided into three types of involution depending on the rate of absorption: fast, medium and slow. The rapid type of involution is the absorption of focal inflammatory changes in the lung parenchyma and root during 1-2 months of chemotherapy, in the middle type - the involution is observed after 2-4 months, in the slow type - after 6 months. observed. Apparently, the presence of a worm infestation has a negative impact on the treatment of patients with pulmonary tuberculosis, so treatment measures should be appropriate for the course of both diseases.

V. CONCLUSION

The most common types of helminthiasis are hymenolepidosis - 40%, enterobiosis - 33%, less - giardiasis (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 disappearance of these symptoms lasts longer than in "pure" tuberculosis. Until mixed pathology was detected, persistent eosinophilia was detected in the blood of 82.5% of patients. During chemotherapy, it grows and does not decrease. AlAT levels exceeded the norm in 10% of patients with the start of treatment, 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 incidence of hypoproteinemia and dysproteinemia was 2.5 times higher than in the control group. Dyskinetic disorders of the billiard system were observed in the hyperkinetic type (15%). The presence of a worm infestation adversely affects the treatment of patients with pulmonary tuberculosis, so treatment measures should be appropriate for the course of both diseases.

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