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Tuberculosis or the causative agent of tuberculosis, symptoms and types, diagnosis and prevention

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Abstract: Tuberculosis causes and spread, Tuberculosis development, Signs and symptoms of different stages of the disease, Active stage of tuberculosis, symptoms and manifestations, Extrapulmonary signs of the disease, Diagnostic methods, Treatment of tuberculosis, Preventive measures about. First of all, we need to follow a healthy lifestyle. We have to start with ourselves first. This article will cover it in detail!

Keywords: Tuberculosis causes and spread, Tuberculosis development, Signs and symptoms of different stages of the disease, Active stage of tuberculosis, symptoms and manifestations, Extrapulmonary signs of the disease, Diagnostic methods, Treatment of tuberculosis , Preventive measures.

Tuberculosis or tuberculosis is an infectious disease of bacterial etiology. The disease is considered not only medical, but also social: the most vulnerable to the tuberculosis pathogen are people with reduced immunity, those who do not eat enough, who do not follow hygiene standards, and people living in poor social conditions. The development of the disease is affected by the quality of human life. However, the entire population, regardless of age and gender, is at risk of tuberculosis.

The high death rate (3 million people per year) and the prevalence of the disease are influenced not only by social factors, but also by the long period of tuberculosis without any symptoms (latent). This period is the most favorable time for the treatment of tuberculosis, and the body is evaluated for the Mantoux test reaction to determine the presence of infection.

CAUSES AND WAYS OF SPREADING OF TUBERCULOSIS

The disease develops after the human body is infected with Mycobacterium bacteria or Koch bacillus. These microorganisms retain their viability at low temperatures, are resistant to external environmental influences and high temperatures.

Koch's bacillus is not considered a highly contagious infection, but an infected carrier spreads the bacteria to the environment, and a healthy person is very unlikely to get infected with these bacteria. In many cases, a patient with tuberculosis (tuberculosis patient) is not required to be hospitalized in the inactive form of the disease, and their actions and social activities are not restricted. Constant daily contact with a person infected with TB, for example in a family setting, not only concern about the patient's health, but also proper hygiene at home, strengthening the immunity of other family members and early detection of the disease for (if infected) it is often recommended to determine the reaction of the body to the Mantoux test.

The main way of transmission of tuberculosis is through inhalation of Koch bacillus through airborne droplets. In rare cases, cases of daily contact and transplacental transmission are recorded. The bacterium enters the body through the respiratory tract, then passes to the mucous membrane of the bronchi and alveoli, and spreads throughout the body through the blood.

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For the human body, Koch bacillus is a foreign microorganism. Usually, when such bacteria enter the body and develop, immune cells attack them and prevent their reproduction and development. The possibility of developing tuberculosis can be in two cases:

If the immune system is weakened, the production of antibodies is disturbed, there is a state of immunodeficiency, the body's defense ability is weakened by other diseases or it is not sufficiently formed due to other social or age factors;

If the contact with the causative agent is long, continuous, the carrier of the bacillus is in the process of an open form of the disease, and if appropriate treatment measures are not applied.

Among the factors that reduce specific immunity and contribute to the development of the disease, the following are distinguished:

Smoking as a factor in the development of broncho-pulmonary diseases (for example, chronic bronchitis), smoking weakens local immunity;

Excessive consumption of alcohol;

All types of addiction;

Propensity to diseases of the respiratory system due to the presence of frequent diseases in the anamnesis, chronic inflammatory processes in the respiratory organs;

Chronic diseases and foci of inflammation in other organs and tissues;

Diabetes, endocrine diseases;

Malnutrition, lack of vitamins in nutrients;

Neurotic disorders, depressive situations;

Pregnancy period;

Negative social and living conditions.

TUBERCULOSIS DEVELOPMENT: SIGNS AND SYMPTOMS OF THE DIFFERENT STAGES OF THE DISEASE

Tuberculosis usually develops gradually. Pathogenic bacteria do not manifest themselves in the body for a very long time, they often develop and multiply in lung tissue.

At the beginning of tuberculosis there are no symptoms. In the first stage of the disease, mainly pathogenic organisms develop and multiply, and no clinical symptoms appear. The initial stage is followed by a hidden or latent period of the disease, in which the following symptoms can be observed:

General deterioration of health;

Fatigue, weakness, nervousness;

Unwanted weight loss;

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Excessive sweating in the evening.

Cough, high body temperature are not typical for the first stage of the disease, such symptoms are observed in extensive damage to lung tissue. Since the early stages of the disease are not noticeable, diagnosis is made only with the help of tuberculosis tests (Diaskin-test, Mantoux test reaction, etc.) or PCR analysis of blood.

The next stage of the disease is latent (hidden) stage - "closed" form of tuberculosis. At this stage, pathogens are not distributed to the environment, and due to the slow development of the disease and the body's resistance, it does not cause any harm to health.

The hidden form of the disease is dangerous due to the possibility of transition to the stage of the active disease, it not only poses a danger to others, but also has a very negative effect on the body.

The active form of the disease goes to the secondary stage, pathogenic bacteria multiply rapidly and spread to other parts of the body. Serious injuries and diseases that lead to death occur.

ACTIVE STAGE OF TUBERCULOSIS: SYMPTOMS AND MANIFESTATIONS

Symptoms of tuberculosis in the acute period of the disease:

Long (more than three weeks) wet cough with sputum discharge;

Presence of blood in sputum;

Fever in the subfebrile range (37-38 °C);

Decreased body weight;

Increased fatigue, malaise, weakness, restlessness, loss of appetite, deterioration of work capacity and other signs of body intoxication.

Cough is wet, distinct, frequent attacks, characterized by a characteristic increase in the morning. At this stage of the disease, people who smoke cigarettes usually spread this symptom to the symptoms of "smoker's cough", which is a symptom of chronic bronchitis in nicotine-dependent patients.

In the more aggressive development of the disease, the clinical picture can be supplemented by the following symptoms:

Fever in the febrile range (body temperature 38-39 °C);

Pain in the shoulder area and abdomen;

Pain during coughing;

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Cough becomes dry, breathing hard.

The symptoms of tuberculosis are similar to the clinical manifestations of other respiratory diseases of viral and bacterial etiology. The diagnosis can only be made by a specialist.

EXTRAPULMONARY SYMPTOMS OF DISEASE

Koch's bacillus can affect not only the lung tissue, but also multiply and cause inflammation in other organs. With this localization, we are talking about the type of extrapulmonary disease. Tuberculosis of internal organs and systems is usually determined by eliminating other diseases and pathologies. The clinical presentation depends on the severity of the process and the location of the organ or tissue affected by the bacterium.

The occurrence of tuberculosis in the brain is manifested by an increase in body temperature, disturbances in the nervous system and sleep, excessive nervousness, tension and enlargement of the neck and neck muscles. A characteristic pain syndrome in the lumbar region is observed when stretching the legs, bending the back and head forward. The disease develops slowly - children of preschool age, diabetes and HIV are at risk.

Tuberculosis (tuberculosis) of the digestive system is manifested by symptoms such as regular disturbances of defecation, abdominal pain, pain in the intestinal area, signs of hemorrhagic bleeding (presence of blood in the feces) and an increase in body temperature up to 40 °C. .

Tuberculosis (tuberculosis) of the joints and bones is manifested by pain in the affected areas, the mobility of the joints is limited. Diagnosis is difficult due to the similarity of symptoms with other diseases of the locomotor system.

Tuberculosis of the genitourinary system (urogenital tuberculosis) is usually detected in the kidneys and / or pelvic organs. The clinical picture is frequent urination, including blood in the urine and fever.

In patients suffering from skin tuberculosis (tuberculosis), it is expressed in the form of rashes that spread over the skin.

Other symptoms can be observed when different organs are injured. A pathogenic organism that enters the bloodstream can spread to all parts of the body and injure almost any organ, tissue or organ system. In such cases, the clinical symptoms of the disease do not differ from inflammatory processes of other etiologies. The prognosis of extrapulmonary tuberculosis treatment depends on the time of diagnosis, the localization of the pathological process, its stage, the degree of damage to the organ, and the general health of the patient.

DIAGNOSTIC METHODS

The diagnosis is made on the basis of analyzes that allow to determine the cause of the disease in the body. Diagnostic measures begin with the collection of anamnesis and analysis of patients' complaints, study of medical history. A number of tests are carried out to confirm or reject the diagnosis:

Analysis of the Mantoux reaction or Pirke test are the most common research methods that determine the presence of tuberculosis. Tuberculin is placed on or under the skin. A tuberculin test allows assessing contact with Koch's bacillus, but it does not confirm the diagnosis. This diagnostic method has been criticized by tuberculosis specialists and other

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experts for the possibility that it may indicate contact with other types of mycobacteria. In addition, diagnosis by this method may lead to false results after vaccination with BCG (vaccine against tuberculosis). The Mantoux test is also used to detect allergic reactions to the main components before vaccination;

The Diaskin test is also included in skin research and is aimed at improving the diagnosis of tuberculosis by the Mantou reaction method. This is a unique test that only reacts to tuberculosis mycobacteria (Mycobacterium tuberculosis);

Quantiferon test or IFA-immunoenzyme diagnostic test is recommended for people who are allergic to tuberculin. The study is carried out on biological materials (blood) and is the most reliable test (only 2% wrong answer, while the Mantoux test is 30%). It is recommended to identify hidden and non-pulmonary forms of the disease;

Microscopic analysis is performed to look for pathogenic organisms in sputum isolated from cough. If Mycobacterium is detected under a microscope, the bacteria are planted and planted in artificial conditions;

PCR or polymerase chain reaction is the most accurate research method today, which allows to determine the presence of mycobacterial DNA in biological fluids;

Histological examination of tissues obtained from biopsy is used to determine tuberculosis of bone tissue.

X-ray and fluorography methods show the presence of foci of inflammation in lung tissue.

Fluorography imaging in the diagnosis of tuberculosis

Photo: Borysevych.com/Shutterstock.com

TREATMENT OF TUBERCULOSIS

The probability of recovery from this disease is calculated based on the stage of the disease, the area of damage, and the general health of the patient. Diagnosis in the early stages makes it possible to determine the effective course of treatment of the disease, which helps the patient to be fully cured.

Treatment is long-term, comprehensive, based on treatment with antibacterial drugs, anti-tuberculosis agents, immunomodulators, immunostimulators, probiotics and vitamins. Mandatory part of the treatment course is diet and exercise therapy.

Treatment of the patient in the active stage is carried out in the tuberculosis dispensary to reduce the possibility of transmission to others. The duration of stay in the dispensary depends on the type and stage of the process and can be from several months to a year or more. Arbitrary treatment and an attempt to stop the disease can often lead to the recurrence or development of the disease, the development of severe complications, and death.

PREVENTIVE MEASURES

The development of the disease depends on the level of immunity, so the main prevention is maintaining a healthy lifestyle.

Immunization of children, regular examinations and tests to detect the disease in the early stages also play an important role.

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