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SOME ANTI-TUBERCULOSIS MEDICINES

Umarova Makhfuza Mirzakarimovna

Assistant of the department of pharmaceutical sciences, ASMI

Abstract. Tuberculosis is a common infectious disease caused by Mycobacterium tuberculosis (Mycobacterium tuberculosis, also known as Koch's bacillus), characterized by the formation of one or many foci of inflammation in various organs, but most often in the lung tissue.

Key words: tuberculosis, mycobacterium, isoniazid, isonicotinic acid, antibiotic.

People, animals, birds, and even fish suffer from tuberculosis. Tuberculosis can affect a person of any age. Children under the age of one year, primary school age, adolescents and the elderly are most susceptible to tuberculosis, and their tuberculosis has a severe progressive course.

Tuberculosis is one of the ancient and widespread infectious diseases. This is confirmed by tuberculous changes discovered during excavations in the bone remains of Stone Age people. Signs of tuberculosis affecting joints and bones were found in the mummified corpses of ancient Egyptians and Peruvians. Pulmonary tuberculosis was widespread in ancient India and China. Classic descriptions of pulmonary tuberculosis were made by Hippocrates (460 - 377 BC). Avicenna (Abu Ali Hussein ibn Abdallah ibn Sina, 980 - 1037, Central Asian philosopher and physician) listed the main clinical manifestations of tuberculosis - cough, sputum, exhaustion, hemoptysis and was the first to suggest the infectious nature of tuberculosis, this was indicated by the wide and widespread spread of the disease among residents all continents.

Mycobacterium tuberculosis was discovered by the German microbiologist Robert Koch on March 24, 1882. Hence its second name - Koch's bacillus. At that time, every seventh resident in Germany died from tuberculosis, and doctors were absolutely powerless against the terrible disease. Robert Koch conducted an

intensive search for the infectious “agent”: studying lung preparations under a microscope, the scientist isolated a pure culture of bacteria with which he infected several hundred animals of different species, and all of them fell ill with tuberculosis.

In the treatment of tuberculosis, substances such as isoniazid, ftivazid, ethambutol, sodium para-aminosalicylate, bepask, ethionamide, prothionamide, sikioserine, streptomycin sulfate, kanamycin, floromycin, thioacetazone are widely used. The substances have a selective effect against tuberculosis microbacteria and, depending on their presence, are divided into two groups:

1. Synthetic substances are hydrazide derivatives of isonicotinic acid - isoniazid, ftivazide and derivatives of para-aminosalicylate sodium acid - litsylate, bepask and other chemical compounds - ethionamide, thioacetazone. Synthetic substances have an effect only against tuberculosis, sometimes leprosy, that is, acid-fast mycobacteria.

2. Antibiotics – streptomycin sulfate, dehydrostreptomycin, calcium chloride complex of streptomycin, rifampicin, sikioserine, kanamycin sulfate, florimycin.

Antituberculosis antibiotics also have an effect against other microorganisms. Most of them are bacteriostatic, some have a bactericidal effect.

Isoniazid reduces the content of mycolic acids, which are the main basis of mycobacterial membranes. According to another hypothesis, isoniazid inhibits the metabolism of pyridoxine in mycobacteria. Isoniazid binds to phosphopyridoxal due to the hydrazide group, and phosphopyridoxal is the active site of many enzymes involved in the processes of decarboxylation and peroxidation. Isoniazid prevents the formation of phosphopyridoxal from pyridoxine, pyridoxine is excreted from the body in large quantities.

Under the influence of isoniazid, the metabolism of pyridoxine is disrupted not only in mycobacteria, but also in the body of the patient consuming this substance, which causes side effects. Isoniazid is well absorbed through the gastrointestinal tract, easily penetrates all tissues, passes through the blood-brain

and placental barriers, enters the cerebrospinal fluid, and accumulates in the lungs and liver. Isoniazid is metabolized in the liver, predominantly acetylated, and is excreted from the body through the kidneys. Isoniazid is used in the treatment of all types and stages of tuberculosis; it is administered orally, into the rectum, if necessary, into a vein, between muscles, or into a cavity. When isoniazid is used, mycobacteria are less resistant to it. During treatment, various negative phenomena are observed, often complications associated with pyridoxine deficiency: neuritis, headache, dizziness, insomnia, and sometimes mental changes. When using isoniazid, allergic processes, dyspeptic conditions, anemia, agranulocytosis occur, and the liver and kidneys are affected. The vitamins pyridoxine, nicotinate, ascorbate, pantothenic acid and thiamine are used during treatment with isoniazid to reduce the negative effects. The use of Isoniazid for epilepsy, liver and kidney diseases, and atherosclerosis is prohibited.

References

1. Браженко Н.А. Туберкулез органов дыхания: руководство для врачей / ред. Н.А. Браженко. – СПб. СпецЛит, 2011. – 368 с.
2. Браженко Н.А. Внелегочный туберкулез: руководство для врачей / ред. Н.А. Браженко. – СПб. СпецЛит, 2013. – 395 с.
3. Azizova S.S. Farmakologiya. T.-2006, 514 b.