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MODERN LABORATORY METHODS OF HELMINTHIC DISEASES

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Abstract
Helminthic diseases- are the most common parasitic diseases of humans caused by various representatives of lower worms - helminths. The prevalence of helminthic diseases depends on natural and social factors. Of great importance are climatic conditions, such as soil and air temperature, precipitation, humidity, in which helminths, eggs, or larvae excreted in the feces.

Keywords: Helminthic diseases, larvae, eggs, food, parasitologic methods of research.

Introduction

Consumption of water contaminated with larvae or eggs of helminths, washing vegetables, fruits, dishes in it, eating algae - all this is a factor in the spread of helminth infections. Of helminthic diseases, the most common are: ascaridosis, toxocarosis, enterobiasis, hymenolepidosis, tenyrhinchosis, teniasis, opistorchiasis, diphyllobothriosis, trichocephalosis, echinococcosis, trichinellosis. Today, due to the current problem, laboratory diagnosis of helminthic diseases is of great importance, which is especially important in the early stages of the disease.

Material for laboratory parasitological studies for helminth infections is a variety of biological material: feces, blood, urine, sputum, lavage fluid, duodenal contents, contents of cysts, biopsy or postoperative material, histological preparations of internal organs and tissues and other. Stool sampling Stool after defecation is taken from different sites in an amount of at least 50 g. The sample is placed in clean, dry, glass or plastic dishes with lids. The stool sample is taken to the laboratory and examined on the day of defecation.

If it is impossible to examine the fecal sample immediately after defecation or on the day of receipt of material in the laboratory, the fecal sample is stored at a temperature of 0 to 4 ° C for no more than a day or collected in a preservative. Selection of duodenal contents (bile). The material is

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delivered to the laboratory in clean chemical or centrifuge tubes immediately after probing the patient on an empty stomach. All three fractions (portions "A", "B", "C") are delivered and examined immediately after arrival to the laboratory. Portion "A" is delivered for examination for the presence of pathogens of strongyloidosis, trichostrongyloidosis, ankylostomidosis.

The "B" and "C" portions are delivered for testing for helminth eggs parasitizing the liver ducts and gallbladder. Sputum and lavage fluid sampling the laboratory receives sputum extracted by coughing (not saliva or nasopharyngeal mucus) in sterile dishes with lids. The sputum sample is examined immediately upon receipt in the laboratory Lavage fluid is delivered to the laboratory in sterile containers and examined on the day of delivery. Urine sampling Urine collected between 10 a.m. and 2 p.m. or all portions of daily urine is delivered to the laboratory; preferably collected after physical activity (e.g., 20-30 squats).

Macroscopic methods are used to detect whole sexually mature helminths or their fragments in feces with the naked eye or with a hand-held magnifier and/or stereoscope. On the surface of the feces after defecation can be seen actively crawling pinworms, sometimes excreted with feces ascarids, in patients with diphyllobothriosis may be excreted fragments of strobila lenticeps (in the form of "noodles"), and in those infected with tenidae (porcine or bovine chain) with feces are often withdrawn members of helminths.

A native smear is the most common and technically available method of fecal examination. Eggs and larvae of all helminth species parasitizing the intestine and bile ducts can be detected in the native smear. However, with a small number of eggs in the feces, they can not always be found. Therefore, the study of feces only with the help of native smear is not complete and should be supplemented with enrichment methods and some other methods. The efficiency of the examination of the native smear is markedly increased by viewing four preparations prepared from the stool sample on two slides without covering slides, which allows examination of a total of approximately the same amount of stool as the Kato method.

A small amount (about the size of a match head) of stirred feces is thinly smeared with a wooden (glass) stick on the surface of a slide in a drop of 50% aqueous glycerol solution. Usually two smears are prepared on one slide. The smear is viewed under low microscope magnification (x10, x8). To prepare a large native smear, 200-300 mg of feces (the size of a large pea) are rubbed on a 6x9 cm glass in 15-20 drops of 50% aqueous glycerol solution.

Procedure for collecting fecal samples in preservative. Pour 8-10 ml of Turdyev's fixing solution (prescription in Appendix 8) into polystyrene containers with a built-in spoon. A small (pea-sized) portion of feces is added to the container daily or at 1-2 day intervals. The volume of the average fecal sample placed in the solution should not exceed 2-3 ml. The material is thoroughly mixed with the preservative at each addition and stored in a dark, cool place (it can be stored for up to 2-3 weeks). The patient is advised not to eat mushrooms, liver, large amounts of rough fiber, take sorbents. After oil enemas and barium intake, several days should pass.

In case of treatment with broad-spectrum antibiotics or antibacterial drugs, feces for examination should start to be collected 7-10 days after the end of the drugs. Liquid stools should be collected once in an amount of at least 5 ml in preservative and at the same time bring to the laboratory fecal samples without preservative collected that day in clean, dry dishes. This is especially true in cases

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of “traveler's diarrhea” returning from tropical and subtropical countries. Guidelines for collection and preparation of material for testing should be given to patients along with the container.

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