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WAYS OF PREVENTION AND PHARMACOTHERAPY OF LIVER ECHINOCOCCOSIS

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Abstract. The results of treatment with albendazole in 15 patients and prevention in 124 patients with liver echinococcosis were analyzed. With the isolated use of albendazole for therapeutic purposes, 11 (73.3%) patients received positive results. It was established that from the moment of introduction of chemotherapy into the complex of postoperative rehabilitation the frequency of relapses decreased from 8.6 to 0.5%. The incidence of local recurrence of liver echinococcosis was 26.6%. The significant frequency of recurrences of echinococcosis in segments remote from the primary focus (43.4%) and even the defeat of another liver fraction (20%) casts doubts on the role of the fibrous capsule of the primary cyst as the main disease relapse factor

Keywords: Echinococcosis of the liver, surgical treatment, prevention, chemotherapy.

Relevance of the research problem. The adult echinococcosis chain develops in the intestines of dogs and other dog animals, and herbivores and humans are intermediate hosts where the larval form of metacestode develops in different organs. After the eggs are swallowed by the intermediate host, the oncosphere (also called exacanth larva) is released from the keratinized embryophore in the stomach and in the intestine where it penetrates the small intestine wall with the help of its hook movement. Then the oncosphere with the help of portal blood flow enters the liver and other organs, where the metacestode is implanted. Oncosphere to the organs can also reach due to the lymphatic system [1, 5, 13]. This process leads to primary echinococcosis, while secondary echinococcosis develops as follows. Due to rupture of the original cyst after trauma or surgical interventions, proto-scots (head solitaire) or small daughter cysts are desymminated into the abdominal cavity [2]. The effect of echinococcosis on human health is important, about 1.2 million people suffer from this pathology and 3.6 million are invalids of this pathology [3, 9]. The mortality rate (0.2/100000 population with a lethality of 2.2%) is high [4].

In addition, it has a significant economic impact with an annual loss of livestock products to US $ 2190 million [6, 8]. Despite these figures, to date, much less attention has been paid to echinococcosis [5, 10]. In the human body, its clinical manifestations range from asymptomatic to severe, potentially fatal. The liver is the most frequent localization of the echinococcal cyst, which is about 70% of the cases [4, 7, 20-24]. The main goal of treatment of echinococcosis is the radical elimination of the parasite, reliable prevention of recurrence of the disease, minimization of the risk of complications, reduction of mortality. This should take into account such specific characteristics of the disease as the number of cysts, their size, localization, the presence and nature of complications, the general condition of the patient, the clinical experience of the surgeon and the interventional radiologist [8, 13, 15, 18-25].

The current state of the surgery of liver echinococcosis can not be considered satisfactory, since after the first performed operations there is a significant number of recurrent forms leading to repeated operations [2, 11]. According to different authors, the frequency of relapse after surgical treatment of echinococcosis of different localizations is approximately 10% and ranges between 3 and 54% [7, 12, 25-30]. The most complex problem is repeated and repeated relapses of echinococcosis, in which a lethal outcome is possible.

Materials and methods. The data for recent years show that more than 120 patients, including more than 100 people with liver echinococcosis and abdominal organs, operate annually in the clinic of the Bukhara State Medical Institute about echinococcosis, and every year there is a tendency to increase the frequency of this disease. Do not decrease and the number of repeated interventions for echinococcal disease. Analysis of the results of treatment of 427 patients operated in the department of surgery. Concerning the primary liver echinococcosis, 366 (85.7%) patients were operated. The share of primary-multiple echinococcosis was 33.9% (n = 124). 48 patients were operated on for echinococcosis of the liver and abdominal organs: 24 (50.0%), residual (8.7%), disseminated echinococcosis of the abdominal cavity - 2 (4.2%), implantation of echinococcosis - 12 (25,0%), in occasion of re-invasive echinococcosis - 2 (4,2%). Of these, 15 were previously operated in our department, i.e. for 366 primary operations, the relapse rate was 4.1%. The remaining 33 patients enrolled for re-operative treatment were previously operated in other surgical facilities. The present study was aimed at analyzing the results of the use of albendazole derivatives in the complex treatment of 139 patients with liver echinococcosis and other abdominal organs.

Indications for the use of antiparasitic drug therapy were:

1 st group - small multiple echinococcal cysts of the liver, not subject to surgical treatment - 7 patients;

2 nd group - a) residual cysts of small size in patients operated on for liver echinococcosis (n = 4); b) multiple small recurrent cysts (n = 2); c) with disseminated echinococcosis of the abdominal cavity organs (n = 2);

3rd group - prevention of relapse after various types of echinococcectomia from the liver and abdominal organs (n = 124).

All groups used albendazole at a dose of 10-12 mg / kg / day, recommended by WHO (1983). The drugs were prescribed by intermittent courses (1 month of treatment and 15 days - break). The number of treatment courses in each observation was selected strictly individually depending on the size, number and nature of the cysts. Control of the state of echinococcal cysts was carried out by dynamic ultrasound and CT. Ultrasound of the liver and abdominal organs was performed before treatment and after 1-3 months. In some situations, CT is also performed. Instrumental studies were repeated every 3 months for 1 year of observation and every 6 months in subsequent years. During the treatment, clinical, laboratory studies were performed regularly (1 time in 15 days). Contraindication to chemotherapy was considered pregnancy, hepatic, renal, hematopoietic insufficiency, active hepatitis, liver cirrhosis, and other serious concomitant diseases. It should be noted that operated patients preferred medication (chemotherapeutic) treatment, and among those who were not operated, a tendency to surgical intervention prevailed. The results of treatment were assessed according to 3 criteria developed by WHO experts (1983):

Successful treatment - the disappearance or significant reduction in the size of the cysts, suggesting their resorption or calcification;

Favorable effect - a noticeable decrease in the size of the cysts or the disappearance of some of them with multiple lesions;

Unsuccessful treatment - absence of visible changes in the shape, size and morphology of cysts based on the results of ultrasound and CT.

In addition, in order to obtain reliable data on the expediency of removing the fibrous capsule and the use of extensive resection techniques, a group of 35 patients with only primary solitary echinococcosis and a firmly segmented localization of the primary cyst was formed from the group of reoperated ones. In this group, a comparative analysis of the localization of newly appeared cysts with primary cysts was carried out.

Results of the study. Benzimidazole carbamates (mebendazole, flyendazol, albendazole) are anthelmintic drugs of a wide spectrum, they inhibit the formation of tubulin, i.e. cytostructural protein of a eukaryotic cell, which in turn is the basic unit of microtubules. In this case, benzimidazole carbamates, causing the disappearance of cytoplasmic microtubules in cestodian cells, do not have a significant effect on the microtubular apparatus of cells, the host. The disappearance of microtubules and microfilaments makes the parasite incapable of maintaining effective homeostasis because the adsorption of glucose by cells is disrupted, followed by a reduction in endogenous glycogen stores, a decrease in the formation of ATP, changes in the structure and function of mitochondria, increases the number of lysosomes, and finally, the membrane degenerates.

Most authors in the treatment of echinococcosis use albendazole intermittent monthly cycles with interruptions of 15 days according to the indications of two studies conducted by WHO. On the territory of the Commonwealth of Independent States countries, the chemotherapy of hydatidinous echinococcosis is still highly questioned. In our country, only a few doctors recommend that patients after surgery for echinococcosis perform anti-relapse chemotherapy. Most practical surgeons remain wary of using anthelmintic drugs because of the risk of developing side-effects of hepatotoxic drugs in the benzimidazolcarbamate group. However, the recent increase in the frequency of hospitalization of patients with complicated, relapsed and disseminated, often generalized forms of echinococcosis indicates the need for an integrated approach to the treatment of the disease with the mandatory inclusion in the arsenal of medications anthelmintic drugs such as albendazole.

Of the 15 patients treated with albendazole isolated for at least 12 months in 6 (40%), successful results were obtained, in 5 (33.3%) patients the results were classified as "favorable effect", and in 4 (26, 7%) patients did not have any changes. The results of isolated treatment with albendazole were assessed by dynamic ultrasound after each course of chemotherapy. The ultrasound picture of the state of cysts was evaluated from the baseline (before the treatment), during the course of chemotherapy and after discontinuation of the drug. Changes in the echinococcal cyst in the dynamics, regarded as degenerative lesions, after the 2-3 courses of chemotherapy showed the presence of the effect, which indicated the expressed disturbances in the vital activity of the parasites. Small cysts disappeared, in their place with ultrasound revealed dense, scar tissue-altered tissue.

The goal of preventive chemotherapy is the sanation of the patient with echinococcosis by albendazole derivatives to prevent recurrence of the disease. Of the entire group of primary operated patients, 162 patients were operated with primary forms of liver echinococcosis without chemotherapy supplementation. In all the remaining 204 patients operated in the first place, chemotherapy was carried out in full volume and with ultrasound in 124 patients. The relapse rate in the 1st group was 8.6% (n = 14). Relapses in the 2 nd group were noted in only 1 (0.5%) of the patient. In the remaining observations, after a course of postoperative chemotherapy at the time of observation from 1 year to 5 years, no recurrence of the disease was noted. We would like to draw your attention to the research section, in which we analyzed the relationship between the localization of recurrent cysts and the site of primary lesion. A group of 30 patients was recruited exclusively

with primary solitary echinococcosis, with a confident and segmentally established localization of the primary cyst. In this case, the localization of a recurrent cyst in only a quarter of patients coincided with the segmental localization of the primary cyst, which made it possible to exclude the absolute dominance of the role of the fibrous capsule in the genesis of the recurrent course of the disease.

The likelihood of a relapse may be related to the fact that the primary liver damage could initially be multiple, and the development of only one parasitic cyst is associated with its dominance, which competitively suppresses the growth of other cysts. Given the above, it is hardly possible to solve the problem of preventing relapses of liver echinococcosis only by expanding the indications for liver resection and pericystectomy.

Conclusions. The primary operation for liver echinococcosis without auxiliary preventive chemotherapy, conducted even in a modern high-tech surgical institution, does not guarantee against recurrence of the disease. The use of anti-relapse chemotherapy in the postoperative period by derivatives of benzimidazole carbamates (albendazole) allows to minimize the frequency of relapses of the disease. Indications for the use of therapeutic isolated chemotherapy for liver echinococcosis as an alternative to surgical treatment may be echinococcal cysts up to 5 cm in diameter. Recurrent liver echinococcosis, strictly associated with the primary localization of the parasitic cyst, was 26.6% of all relapsed forms. A large proportion of recurrent echinococcal cysts in segments remote from the primary focus (43.4%) and even the defeat of another fraction (20%) cast doubt on the role of the fibrous capsule of the primary cyst as the main factor of the disease recurrence, and hence the advisability of improving the methods of its heat treatment, pericystectomy and extensive use of resection technology.

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