MODERN MEDICINE AND PRACTICE
https://inovatus.es/index.php/ejmmp
EUROPEAN JOURNAL OF MODERNMEDICINEAND PRACTICE
Vol. 4 No. 5 (May - 2024) EJMMP ISSN: 2795-921X

STUDY OF THE EFFICACY OF ALBENDAZOLE AS A TOPICAL GERMICIDE AFTER HEPATIC ECHINOCOCCECTOMY

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Abstract: Relevance. One of the most common causes of parasitic invasions of the liver encountered in surgical practice is echinococcosis. According to WHO data, about three million people fall ill with echinococcosis annually in the world. The aim of the study is to improve the quality of treatment of patients with echinococcosis of the liver by using the drug albendazole as a topical germicide. Material and methods of the study. The clinical study consisted of 87 patients with EP. Results of the study. The comparison group included 45 patients with hepatic echinococcosis who took Albendazole according to the standard scheme. The main group included 42 patients with echinococcosis of the liver, who, on the same level with oral administration of Albendazole in the postoperative period at the dose of 5 mg/kg/day, were treated with antiparasitic contact treatment of the residual cavity walls with this drug according to our method. Conclusions. Application of "low" doses of Albendazole in combination with the use of this drug as a local germicidal agent according to the developed method showed a positive antiparasitic effect of their application.

Key words: echinococcosis of the liver, local herbicide, relapse, prevention.

Relevance of the study. One of the most common causes of parasitic liver invasions found in surgical practice is echinococcosis [2-7, 19, 23-28, 31]. According to WHO, about three million people worldwide get sick with echinococcosis every year. Uzbekistan is one of the regions endemic to echinococcosis. Climatic, geographical, social and economic conditions have traditionally developed in such a way that there are a number of zoonotic foci with varying degrees of intensity of epizootic processes on the territory of the republic. At the same time, the incidence of echinococcal disease in humans correlates directly with the intensity of the epizootic process in zoonotic foci. Currently, the surgical method of treating liver echinococcosis, in the vast majority of cases, is the method of choice [1-4, 9-18, 32].

However, the operation is a risk factor, which is determined by a number of reasons: the patient's condition, the localization of parasitic foci, the number of previous operations. Echinococcosis of the liver, being a serious disease, can be complicated by the development of recurrent cysts. Repeated surgical interventions in echinococcosis are technically very difficult, and under certain circumstances (multiple lesions and repeated relapses) lead to disability and even death of patients. A wide range of recurrence rates (from 3% to 54%), according to various authors, is due to many factors: the pathogenicity of the pathogen, the peculiarities of treatment and prevention. Unfortunately, to date, there is no unified approach to the etiological causes of relapse [11, 19-25, 30]. There are metastatic, implantation, residual, and invasive

relapse theories. It is impossible to reliably determine the cause of the origin of recurrent cysts using currently existing methods. Rather, there are no reliable methods for determining the causes of relapse. The establishment of the cause of relapse will contribute to the correct choice of surgical treatment tactics and the effectiveness of prevention due to the "targeted" effect.

In connection with the above, the most significant and important in the prevention of relapses, regardless of the causes of their occurrence, is chemotherapy. Since 1983, the anthelmintic drug Albendazole, prescribed for the treatment and anti-relapse prevention of echinococcosis, has been widely used in the world. In the CIS countries, this drug was also recommended for use as a therapeutic and prophylactic agent during the Congress of the Association of Hepatological Surgeons of Russia and the CIS countries in 2014.

The following scheme of application of Albendazole has become most widespread: the drug is prescribed at a dose of 10-20 mg / kg of weight per day, the number of courses is from 3 to 10 with a break of 14-15 days. This scheme is consistent with the scheme proposed by Horton (1989) and approved by WHO. An analysis of international literature has shown that Albendazole, once in the human body, does not have a direct effect, but quickly undergoes biotransformation. Currently, it is known that in the human body albendazole (ABZ) is converted into albendazole sulfoxide (ABZ-SD), which has an anthelmintic effect. The latter, in turn, is metabolized into albendazole sulfone (ABZ-SD), which has no biological activity. Then, ABZ-SD is hydroxylated and is mostly excreted in bile and urine.

The use of the drug has a number of side effects well described in the literature, which causes many patients to stop taking it prematurely. Known methods of preventing echinococcosis with Albendazole, depending on the severity of the course (solitary, multiple), according to the literature, show their effectiveness in the range of 40% - 70% [4]. This is due to the fact that the metabolism of Albendazole in the body proceeds differently due to the unique morphological, physiological and biochemical properties of each person due to genetic polymorphism. The proposed standard regimen of Albendazole (at a dose of 10-20 mg / kg of weight per day, the number of courses 3-10 per year with a break of 14-15 days, in practice, is used in different ways, since uniform criteria have not yet been developed, which also does not improve treatment results.

In addition to the oral administration of Albendazole, local application of the drug as a contact germicide has become quite widespread, especially among surgeons who actively use minimally invasive techniques. As a rule, injection of a solution of 10% Albendazole and 20% hypertonic solution into the cyst cavity is used, followed by its aspiration or without it. Despite its simplicity of implementation, the technique has a number of negative aspects, manifested, among other things, in the form of suppurative processes.

Materials and methods of research. In order to circumvent the negative aspects associated with the use of Albendazole in oral or injectable form, we have developed a chemotherapy technique based on contact antiparasitic treatment of liver tissue with Albendazole and oral administration of this drug in "small" doses (5 mg / kg / day) and conducted a study of its effectiveness in order to prevent recurrence of echinococcosis liver in patients admitted to the multidisciplinary clinic of the Samarkand State Medical University in the period from 2017 to 2020.

The essence of the technique is that due to the tamponing of the wound surface of the liver sponge Spongostan treated with Albendazole solution, a long-term local effect of the drug on the pathological focus is achieved. In accordance with it, we impregnated a sterile sponge sponge with a size of 7x5x1 cm with 50 ml of 0.9% saline solution with Albendazole dissolved in it at a concentration of 10 μg/mL (Fig. 1).



Fig. 1. Treatment of the residual cavity after echinococcectomy from the liver sponge Spongostane impregnated with albendazole

Albendazole concentration of 10 μg/mL is effective and safe for the patient, which has been proven by numerous experiments by Erzurumlu et al.[16].

The study included patients who had:

1) multiple cysts;

2) cysts with daughter blisters as contents (Echinococcus Hominis);

3) single-chamber cysts (Echinococcus Veterinorum);

4) calcified cysts;

5) cysts of large and medium size;

6) cases of recurrent echinococcosis of the liver (Table 1).

Table 1. Distribution of patients by type of echinococcal cyst (n=87)

Type	Total (n=87) (%)	Comparison Group (n=45) (%)	The main group (n=42) (%)
Multiple cysts	26 (29,9)	12 (26,7)	14 (33,3)
Cysts with child blisters as contents (Echinococcus Hominis)	56 (64,4)	29 (64,4)	27 (64,3)
Single-chamber cysts (Echinococcus Veterinorum)	31 (35,6)	17 (37,8)	14 (33,3)
Calcified cysts	7 (8,0)	2 (4,4)	5 (11,9)
Cysts of large and medium size	24 (27,6)	11 (24,4)	13 (30,9)
A case of recurrent echinococcosis of the liver	17 (19,5)	10 (22,2)	7 (16,7)

All the patients included in the study were divided into 2 groups: the main group and the comparison group. The comparison group included 45 patients with echinococcosis of the liver who took Albendazole according to the standard regimen: 10-12 mg / kg of weight per day (no more than 800 mg per day), three

courses of 28 days with an interval between courses of 14 days. The main group included 42 patients with echinococcosis of the liver, who, along with oral administration of Albendazole in the postoperative period at a dose of 5 mg / kg / day, underwent antiparasitic contact treatment of the walls of the residual cavity with this drug according to our method.

The results of the study. After discharge from the hospital, patients were taken under medical supervision with ultrasound, ELISA control and examination of biochemical parameters of the functional state of the liver (ALT, AST) every 6 months for 1.5-2 years. According to the results of the study, a recurrence of the disease occurred in 5 (11.1%) patients from the comparison group. There was no recurrence of the disease in patients from the main group. There were also no cases of local and general complications in patients treated according to our method.

Conclusions. Despite the small volume of the study performed, the use of "small" doses of Albendazole in combination with the use of this drug as a local germicidal agent according to the developed method showed the presence of a positive anti-relapse effect from their use.

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