

Dynamics of the Distribution of Trematodosis and Echinococcosis in the Samarkand Region

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Annotation. The article provides information on flatworms (Phathelminthis), trematodes (Trematotes), Fasciola hepatica and Fasciolagigantica, as well as parasites belonging to the genus Cestodes, parasitizing in the parenchymal organs of cattle of different ages in the irrigated areas of the Samarkand region, causing parasitism in the liver and other organs of farm animals.

Key words: cattle, helminths, echinococcosis, fascioliasis, parenchymatosis, cestodosis, liver.

Introduction. Today, the development of animal husbandry plays an important role in shaping the economy of Uzbekistan and increasing the welfare of the people.

The study of the epizootic status of helminthiasis in the parenchymal organs of cattle in the Samarkand region, the development and implementation of improved modern measures against them, as well as the prevention of death and forced slaughter of animals due to the most common diseases, will increase meat and dairy production. Accordingly, the leadership of the republic administration gives great attention to the further development of animal husbandry in personal subsidiary, dekhkan and farms.

The degree of study of the problem. Nowadays, changes in the ecological situation have led to the spread of helminthiasis among animals. As a result, infection with such biohelminths as opisthorchiasis, tenioidosis, fascioliasis and echinococcosis has become common among animals [5].

Currently, there are many factors hindering the development of animal husbandry in Uzbekistan. In particular, fascioliasis and other liver flukes, caused by the larvae of some cestodes, can occur in irrigated areas, especially on river banks and adjacent territories, which leads to forced slaughter and even death of animals, which negatively affects their productivity, growth and may manifest as the development of mixed helminthiasis.[3].

We are well aware that the causative agent of echinococcosis, *Exinococcusgranulosus*, goes through all stages of development in endogenous conditions and that invertebrates do not participate in its development. In each area there are both intermediate (farm animals, people) and main (dogs and other carnivorous animals) hosts of the parasite. Thus, echinococcosis can spread to all human-populated areas of the republic. Most importantly, anthropogenic factors play a key role in the infection of dogs with echinococcus, the main host, and the effect of this factor increases from year to year, which leads to the spread of echinococcosis among farm animals, humans, dogs [1;8].

In the desert-pasture and foothill regions of Uzbekistan, up to 60% of sheep are infected with echinococcosis and 13.5% with coenurosis.[3].

According to the author's research, the average incidence of fascioliasis in cattle in the districts of the Samarkand region ranged from 52.80% to 67.1%, or 58.52%. In irrigated biocenoses, this indicator was 60.02%, in the foothills - 41.17%. [6].

According to another author, the incidence of echinococcosis in cattle was 5.1% in the spring, 5.8% in the summer, 3.5% in the fall and 3.0% in the winter, an average of 4.3% [4].

Echinococcosis is considered a serious socio-economic and environmental problem. The disease spread from north to south to all regions of the Earth except Antarctica [2].

In domestic dogs of the Tashkent metropolis, 21 species of parasitic helminths were found, 8 of which belong to cestodes, among which high activity of *Exinococcusgranulosus* was found [9].

According to a study by another author, cattle in Bukhara, Navoi and Samarkand regions were infected with cestodes, trematodes and nematodes, on average 27.3% with cestodes and 89.3% with trematodes. [10].

Materials and methods. The studies were carried out in 2003-2019. by complete helminthological dissection of the liver of 447 heads of cattle belonging to personal subsidiary, farm and livestock farms in some areas of the Samarkand region unhealthy for fascioliasis and echinococcosis, with the determination of the number and age of isolated helminths. The study used helminthic, scatological, parasitological and pathological methods.

Research results and their analysis.

In total, 447 heads of cattle were examined, including 271 infected *F. gigantica*, 356 *F. hepatica*, 279 *D. dendriticum* and 108 *Echinococcusgranulosus* (larvae) (Table 1).

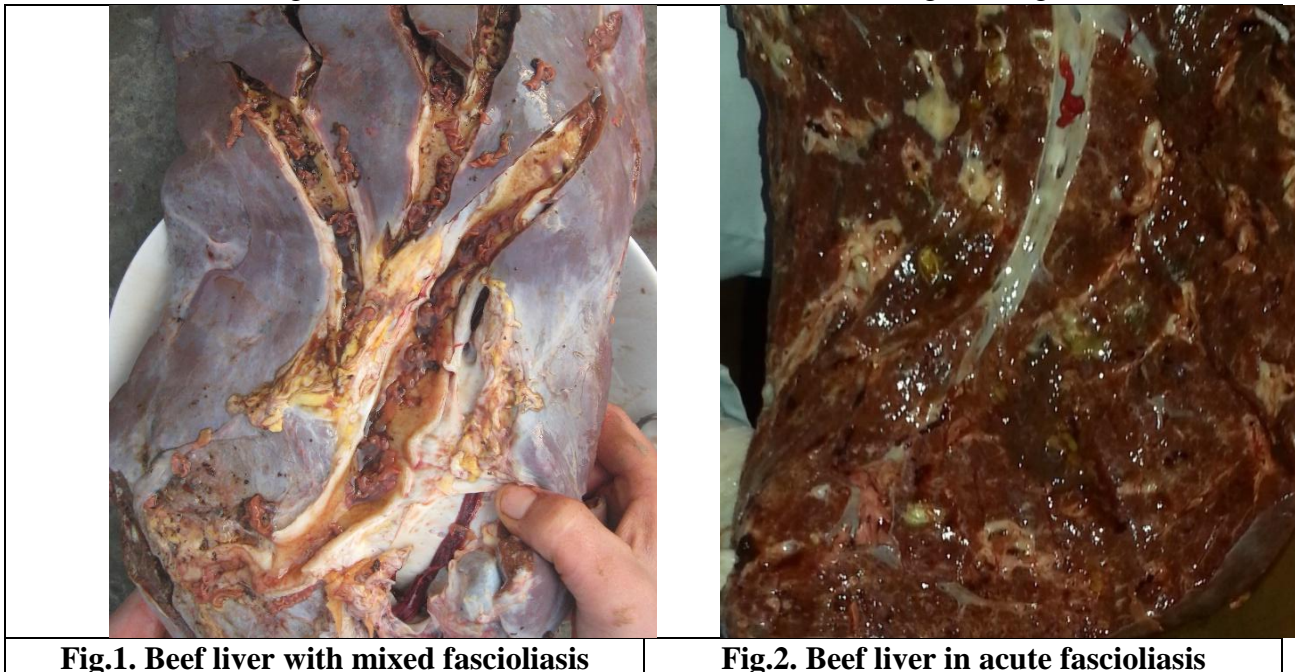
Table 1
The incidence of fascioliasis, dicroceliosis and liver echinococcosis in certain districts of the Samarkand region (by districts)

Urvedareas	Quantity of surveyed cattle	Fasciolagigantica		Fasciolahepatica		Dicrocoeliumdendriticum		Exinococcuslarva	
		Total:		Total:		Total:		Total:	
		Quantity	%	Quantity	%	Quantity	%	Quantity	%
Payaryk	65	59	90,8	56	86,2	5	7,7	17	26,2
Ishtykhan	59	51	86,4	50	84,7	58	98,3	17	28,8
Akdarya	35	24	68,6	27	77,1	2	5,7	9	25,7
Kattakurgan	71	34	47,9	48	67,6	66	93,0	14	19,7
Pastdargom	35	17	48,6	24	68,6	2	5,7	10	28,6
Jambay	42	30	71,4	33	78,6	40	95,2	10	23,8
Bulungur	28	15	53,6	21	75,0	4	14,3	7	25,0
Taylak	41	14	34,1	38	92,7	39	95,1	11	26,8
Urgut	41	16	39,0	37	90,2	40	97,6	8	19,5
Narpay	30	11	36,7	22	73,3	23	76,7	5	16,7
TOTAL:	447	271	60,6	356	79,6	279	62,4	108	24,2

We analyze our studies in more detail, then in the liver of all examined cattle, from 11 to 6710 samples of the causative agents of fascioliosis and dicroceliosis were found. We found that in total all cattle were parasitized by 356,341 specimens of trematodes, and an average of 797 specimens of fascioli and a dicrocelium per head of cattle were infected with them.

In the tissues of the liver and bile ducts of 271 heads of cattle infected with *F. gigantica*, parasites were found in numbers from 2 to 4230 specimens, or a total of 10 037. Its average intensity of invasion was 399 specimens. The second causative agent of fascioliosis, *F. hepatica*, infected 356 heads of cattle, and from 2 to 2256 specimens of the parasite were found in the tissues of the liver and bile ducts of each cattle, a total of 59 539. Accordingly, 167 specimens were found in each liver of cattle parasite. It was found that the mixed form of *F. hepatica* and *F. gigantica* affected 249 head of cattle, which is 55.7% of the total surveyed cattle. A total of 145,107 specimens of *F. gigantica* and *F. hepatica* were found in cattle infected with both types of fascioliosis, of which up to 583 specimens per head of cattle, of which 103 871 specimens 71.6% *F. gigantica* and 41 236 specimens of *F. hepatica*.

Thus, according to the results of our research, *F. gigantica* was the main causative agent of fascioliosis in the irrigated areas of the biocenosis of the Samarkand region. (Fig.1,2)



The causative agent of dicroceliosis *D. Dendriticum* was detected in 936% of 416 studied heads of cattle, from 7 to 5708 specimens in the bile ducts and gallbladder of each infected cattle liver, and the total number of parasites was 188765 specimens, or an average of 454 parasites per head of cattle. The trematode *D. dendriticum* is a relatively small parasite that is not found in the liver tissue and parasitizes only in the bile ducts of the liver, partly in the gallbladder. However, it can cause a complex course of mixed fascioliosis. The causative agent of dicroceliosis, along with *F. gigantica* and *F. hepatica*, was found in 243 heads of cattle in the form of mixed flukes. While *D. dendriticum* was found in 303 cattle exposed to *F. hepatica*, it was found with *F. gigantica* in 262 cattle.



Fig.3. Intensive infected 38kg liver of cottle with Echinococcusgranulosus (larvae)

As a result of our study, it turned out that echinococcal vesicles of various sizes were found in the liver of 108 heads of cattle infected with echinococcosis. 49 heads of cattle infected with echinococcosis had mixed types of *F. gigantica* and *F. hepatica*. The total number of detected fascioli was 15 960, with an average invasive intensity of 148 in combination with *D. dendriticumbi* up to 328. Pure vesicles of echinococcosis were found in 7 heads of the examined cattle, but it was impossible to count the number of vesicles found in the lungs, liver and even the spleen of cattle (Fig.3.).

Conclusion:

1. According to the results of our research, in irrigated biocenoses of the Samarkand region, helminthiasis of the main parenchymal organs of cattle was -fascioliasis, dichrocellosis and echinococcosis.

2. Infection of the researched cattle with this or that helminthiasis was 79.6% *F. hepatica* and *F. gigantica*; *D.dendriticum**Echinococcusgranulosus* (larvae) 62.4; 24.2 percent.

3. At present, the irrigated biocenoses of the Samarkand region are a completely unhealthy area for parenchymal organs of cattle and require systematic improvement of measures against helminthiasis.

References

1. Aminzhanov M. Scientific aspects of the study and prevention of echinococcosis in Uzbekistan. // In collection: materials of the second international. scientific conference "Monitoring the spread and prevention of dangerous animal diseases" Samarkand, 2004. - p. 18-23.
2. AminzhanovSh.M. Cystic echinococcosis-hydatidosis in animals and humans and measures to combat it. / Monograph. Tashkent-2012.b. thirteen.
3. AminzhanovSh.M. "Development of the main animal cestodes and immunoprophylactic measures against them." Author's abstract. diss.at the st.d.v.n. - Samarkand: SamVMI, 2018.-- 22 p.
4. Achilov O.E., Ibragimov F.B. "Veterinary and sanitary examination of beef infected with echinococcosis" // Bulletin of veterinary medicine. Tashkent, 2020 No. 12. B.27.

5. Beer S.A. Parasitological profile of Russia: one of the possible ways of assessment / S.A. Beer, A. Ya. Lysenko // Region. Problems and health management of the population of Russia.- M.: AEN RF, 1996.-23p.
6. Daminov A.S. "Epizootological and immunological features of cattle trematodes in various biogeocenoses of the republic."Diss.to the step. Doctor of Medical Sciences ... Samarkand: SamVMI, 2016.-- 200 p.
7. Elgandieva N.K., Abdiev T.A. The situation with parasitic diseases in Uzbekistan. // Zh-I Medical parasitology and parasitic diseases. 2000.-- p. 51-52.
8. Nazirov F.G., Ilkhamov F.A., Atabekov N.S. Echinococcosis in Uzbekistan: state of the problem and ways to improve treatment results. // Medical Journal of Uzbekistan No. 2-3. Tashkent, 2002.-- p. 2-5.
9. Safarov A.A. Fauna and ecology of parasites of dogs of the Tashkent metropolis (*Canis lupus familiaris*). // Abstract of the thesis. Tashkent-2020.b. 17.
10. Goipova M.E. "Worms of large horned animals of the Zarafshan Valley (*BOS TAURUS* Dom.): Fauna, distribution and ecology". Author's abstract ... diss. atst.d.v.n. Tashkent 2019 - 22 p.