

ТҮЙІН

Ғылыми мақалада сиырлар мен қашарлардың іріңді-катаральды эндомеритін, бактерияға қарсы препараттарды, витаминдерді қолдану арқылы емдеу сұлбасы сипатталған. Жатыр жиырылғыштық және жатыршілік препараттар кешенін қолданумен іріңді-катаральды эндомеритті емдеу сұлбасының тиімділігіне салыстырмалы бағалау жүргізілді.

Үй жануарларының ветеринариясында оңтайлы емдеу кешені және аз уытты химиотерапиялық препараттарды іздеу өте маңызды болып саналады. Сүтті бағытындағы шаруашылықтарда сиырлар мен қашарлардың репродуктивті мүшелерінің аурулары ерекше орын алады. Сиырлардың бедеулігі сүтті мал шаруашылығында орасан зор экономикалық шығын келтіреді.

Шаруа қожалықтарында жыныс мүшелерінің аурулары сиырлар мен қашарларда 30 - 51% кездеседі, ал аталған аурулардың сүт шаруашылықтарындағы сиырлар мен қашарларда жиі кездесу себептері құнарсыз азық және моционның аз немесе мүлдем болмауы бірден бір себепші екен анық.

Бұл ғылыми мақалада сиырлардың жыныс мүшелерін тік ішек және ультрадыбыстық зерттеу нәтижелері берілген, жануарларды «Айнил, цефтимаг, эндоетромаг-грин, Е витамині» препараттарымен емдеудің сұлбасының тиімділігі және шаруашылықтарда қолданылатын дәстүрлі сұлбасы зерттелген. Мақалада сипатталғандай сиырларды емдеу сұлбасы терапевтикалық қатынаста ең тиімдісі деп танылғаны анықталды.

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INFECTION WITH ECHINOCOCCOSIS AND OTHERS INTESTINAL HELMINTHOSES OF DOGS IN THE WEST OF KAZAKHSTAN

ANNOTATION

Environmental changes caused by global warming have led to a spike in wild predator populations and an increase in stray dogs in urban and peri-urban areas.

As a result, the number of possible reservoirs of infection for domestic animals has increased, which has created the prerequisites for the continued maintenance of the population and the spread of zoonotic helminths. Dogs infected with individual helminths spread them among farm animals and people, thereby causing serious illness. Analysis of the literature has shown that parasitic diseases of dogs are widespread. In the formation of the helminth-faunistic complex in certain environmental conditions, a number of factors are of great importance. The most important are the biological characteristics of the species.

Dogs host a wide variety of helminths, including tapeworms, flatworms, and hookworms. These parasites have a detrimental effect on the health of dogs and cause morbidity and mortality, especially

in young (puppies) and old animals. In this regard, the study of the epizootology and ecology of helminths, carnivores and other biological features is relevant.

Thus, the study of the spread of parasitosis in dogs is of great epidemiological and epizootological significance. This study aimed to determine the prevalence of intestinal helminth parasitic infections and associated risk factors for human infection. Thus, as a result of the studies carried out, it was found that 7 types of helminths circulate in dogs in the West Kazakhstan region, including 4 types of cestodes, 3 types of nematodes.

Keywords: *helminths, ecology, parasites, carnivores, population.*

Introduction. Dogs are the most popular pets worldwide and are infested with many parasites, which may represent a health risk for humans, especially children, the elderly and the immune-compromised [1, 2, 3].

For instance, *Dipylidium caninum*, *Echinococcus granulosus*, *Ancylostoma* spp., and *Toxocara canis* are common parasites of dogs that can affect humans in different countries around the world. Knowledge about parasite species in domestic dogs, prevalence and intensity of helminth infestations in dog populations, transmission of canine parasites and the seasonal dynamics of parasite infestations are essential for control and prevention of helminthosis in domestic animals and humans. Investigation of dog populations as part of urban ecology is a major key for the solution of many ecological problems in industrial ecosystems [4,5].

Dogs may be infected by several species of zoonotic helminths, being intestinal nematodes such as ascarids and ancylostomatids, the most globally distributed [6, 7].

Importantly, besides these nematodes, cestodes inhabiting the gut of dogs, e.g. *Echinococcus granulosus* or *Dipylidium caninum*, have also the potential to infect people [8].

The most important zoonotic tapeworms infecting the intestine of dogs are *Echinococcus granulosus* and *Dipylidium caninum*. Despite the globally distributed taeniid *E. granulosus* has a scarce pathogenic potential in dogs, it is responsible for human cystic echinococcosis (CE), a zoonotic disease of major public health importance [9].

In nature, due to the organism of plants, animals and humans, there are a large number of various parasites. Parasitic worms are a very representative group of the world parasite fauna [10].

Some types of helminths in changing conditions can acquire not only epizootic, but also epidemiological significance, such as echinococcosis, trichinosis, opisthorchiasis. As a result, monitoring of the ecology and biodiversity of helminth communities in specific areas becomes very important [11, 12].

Intestinal parasites can cause serious health problems in dogs, especially puppies [13,14], including stunted growth, decreased immune response to infectious diseases, and general poor health [15].

Intestinal helminths are cosmopolitan pathogens, including numerous species with zoonotic potential, which makes research relevant for the whole world [16, 17].

As a result, the number of possible reservoirs of infection for domestic animals increased, which created the prerequisites for the continued maintenance of the population and the spread of zoonotic helminths [18].

In the formation of the helminth-faunistic complex in certain environmental conditions, a number of factors are of great importance. The most important are the biological characteristics of the species. In this regard, the study of epizootology and ecology of carnivorous helminths and other biological features is relevant.

Dogs host a wide variety of helminths, including tapeworms, flatworms, and hookworms. These parasites have a detrimental effect on the health of dogs and cause morbidity and mortality, especially in young (puppies) and old animals. Some species, such as *Toxocara canis*, *Ancylostoma caninum*, *Dipylidium caninum* and *Echinococcus granulosus*, are well-known parasites around the world that pose a high risk to human health.

In Kazakhstan, many scientists-helminthologists, such as K.I. Scriabin, V.T. Ramazanov, N.T. On the territory of the Kazakh SSR, a total of 27 species of helminths were recorded, including 5 species of trematodes, 10 - cestodes, 11 - nematodes, and 1 species - acanthocephalic [19, 20].

In recent decades, due to the changing economic situation in the country, the number of domestic and stray dogs registered and not registered with the veterinary service has sharply increased.

Literature data indicate that parasitic diseases of dogs are found everywhere both abroad and in Kazakhstan, moreover, both among service and hunting dogs kept in nurseries, priortary and village, and among decorative, indoor animals.

It should be noted that parasitic diseases of dogs caused by helminths, as a pathology, occupy the fourth place among other diseases. Helminths, along with a threat to animal health, also have social significance, since millions of dogs, especially in large cities, being in close proximity to humans and being carriers of zoonoses, pose a threat to the health of their owners.

The study of the main helminthiasis of dogs, the issues of epizootology of the most common invasions in certain areas is of scientific and practical interest. Carnivores infected with individual helminths spread them among farm animals and people, causing serious diseases.

Analysis of the literature has shown that parasitic diseases of dogs are widespread. Thus, the study of the spread of parasitosis in dogs is of great epidemiological and epizootological significance.

Materials and research methods. Helminthological studies of dogs were carried out throughout the West Kazakhstan region. In the studies, intravital research methods were used (diagnostic deworming with hydrobromic arecoline with complete emptying of the gastrointestinal tract of animals from the contents).

Statistical data. From the quantitative indicators of infection, the extensiveness of invasion (EI) was used, expressed as a percentage (since during diagnostic deworming, only the presence of one or another type of worm was ascertained, but their exact number was not counted). The extent of invasion as a sample proportion of infected animals was calculated with the error of representativeness; the comparison of infection rates in the analysis of the annual dynamics or the comparison of the epizootic role of dogs of various economic uses was carried out using the Student's t test.

Research results. In scientific materials, there are reports that parasitic systems function in the dog population, the coactants of which are more than 20 species of helminths, most of which, in a sexually mature state, parasitize in the gastrointestinal tract of animals. Helminths harm the health of dogs, pollute the environment, thereby creating the prerequisites for a parasitological pandemic in the territory. Dogs pose a significant epidemic danger to residents of both urban and rural areas, since they are the owners of a number of helminths that are dangerous to humans.

This danger is magnified by the large number of uncontrolled dogs. In order to obtain a reliable picture of the total number and species of helminths in urban, local and village dogs, unscheduled deworming with hydrobromic arecoline was carried out. Diagnostic deworming is quick and easy to use in mass screening of dogs.

In total, 143 dogs of various household belongings were subjected to diagnostic deworming, including: priortary - 53; settlement - 39; urban - 51 heads. As a result of our studies, in all groups of dogs for economic use in the region, we noted four types of cestodes-teniids: *Taenia hydatigena*, *Multiceps multiceps*, *Echinococcus granulosus*; from the family Dipylidiidae - pumpkin tapeworm *Dipylidium caninum*; from nematodes - two types of ascaris: *Toxocara canis* and *Toxascaris leonina* and one species of hookworm - *Uncinaria stenocephala*.

As can be seen from the tables [table 1], the infection of dogs with various invasions of all groups averaged 19.0%.

Taenia hydatigena. Teniosis caused by *Taenia hydatigena*. The intensity of this invasion can be indirectly judged by the statistical data on the infection of ruminants with thin-neck cysticercosis. In the cases recorded by us, the intermediate hosts were agricultural animals (cattle, sheep). When dogs are fed their internal organs affected by cysticercus, they are directly infected. Hydatigenic teniosis was found in the majority of dogs in the rural population. Affected were priortary and village dogs older than 2-5 years. The proportion of infestation in village and parish dogs was 22.64 ± 5.75 - $20.51 \pm 6.46\%$, among urban dogs the infestation rate was much lower - only $1.96 \pm 1.94\%$.

Multiceps multiceps is the second largest teniidae and had a fairly low degree of invasion throughout the studies. According to our research, the most infested were parish and village dogs.

Thus, the infestation of dogs with helminth was $9.43 \pm 4.01\%$ in parish dogs and $10.25 \pm 4.86\%$ in village dogs. and in urban dogs $1.96 \pm 1.94\%$.

Echinococcus granulosus. Of the cestodes recorded in dogs, it is necessary to isolate echinococcosis. Echinococcosis is a dangerous helminthiasis of great epizootological and epidemiological significance. The life cycle of *E. granulosus* includes final (domestic and wild carnivores) and intermediate hosts (wild and domestic ungulates and humans).

The adult parasite lives in the small intestine of the final host. Intermediate hosts become infected when eggs enter the body, which develop in internal organs, mainly in the lungs and liver, and less often in the heart. All cases were recorded in the autumn period in males over 4 years of age. The most infected with echinococcosis were the priotary dogs by $22.64 \pm 5.75\%$ and the village dogs by $25.64 \pm 6.99\%$.

Dipylidium caninum. According to the research by M.Sh. Shalmenov in the West Kazakhstan region is widespread. The extensiveness of the invasion is quite high; it ranks first in the number of cases and spread.

In general, dogs of all studied groups were infected with dipylidiosis by $24.47 \pm 3.59\%$, of which, among them, parity dogs by $18.86 \pm 5.37\%$, settlement dogs by $17.94 \pm 6.14\%$. The highest rate of infection was recorded in dogs of the urban population, $35.29 \pm 6.69\%$. According to our observations, high rates were noted in dogs over 1-2 years old.

Toxocara canis. Toxocariasis is a parasitic disease caused by the *Toxocara* hookworm that affects dogs and cats. Mature helminths are localized in the small intestine of carnivores. Getting into the soil with the feces of invaded animals, the eggs of the parasite remain alive and are able to enter the host's body for a long period of time. Dogs are infected as a whole by 19.58 ± 3.32 , where parity dogs by $11.32 \pm 4.35\%$, parity dogs by 17.94 ± 6.14 and urban dogs by $29.41 \pm 6.38\%$.

Table 1 – Extensiveness of invasion (in percent) by helminthiasis of dogs in the West Kazakhstan region according to diagnostic deworming.

| Types of helminths | Overall, 143 | | Priotary, 53 | | Village, 39 | | Urban, 51 | |
|--------------------------------|--------------|--------------------|--------------|--------------------|-------------|--------------------|-----------|--------------------|
| | Infested | Infection rate (%) | Infested | Infection rate (%) | Infested | Infection rate (%) | Infested | Infection rate (%) |
| <i>Taenia hydatigena</i> | 21 | 14,68±2,96 | 12 | 22,64±5,75 | 8 | 20,51±6,46 | 1 | 1,96±1,94 |
| <i>Multiceps multiceps</i> | 10 | 6,99±2,13 | 5 | 9,43±4,01 | 4 | 10,25±4,86 | 1 | 1,96±1,94 |
| <i>Echinococcus granulosus</i> | 24 | 16,78±3,12 | 12 | 22,64±5,75 | 10 | 25,64±6,99 | 2 | 3,92±2,72 |
| <i>Dipylidium caninum</i> | 35 | 24,47±3,59 | 10 | 18,86±5,37 | 7 | 17,94±6,14 | 18 | 35,29±6,69 |
| <i>Toxocara canis</i> | 28 | 19,58±3,32 | 6 | 11,32±4,35 | 7 | 17,94±6,14 | 15 | 29,41±6,38 |
| <i>Toxascaris leonina</i> | 15 | 10,48±2,56 | 8 | 15,09±4,92 | 2 | 7,69±4,27 | 5 | 9,80±4,16 |
| <i>Uncinaria stenocephala</i> | 1 | 0,69±0,69 | - | - | - | - | 1 | 1,96±1,94 |

Toxascaris leonine. *Ascaris* is the most common gastrointestinal helminth found in dogs. the parasite was registered in all categories of dogs older than 10 months. The most infected were dogs in the category of "priotary" ($15.09 \pm 4.92\%$), the lowest rate was recorded in the village dogs of $7.69 \pm 4.27\%$.

Dogs are less infected with *uncinaria*; in their studies, they were noted in only one dog from the urban population.

Scientific research was aimed at determining the prevalence of parasitic infections of intestinal helminths and associated risk factors for human infection. Thus, as a result of the studies carried out, it was found that 7 types of helminths circulate in dogs in the West Kazakhstan region, including 4 types of cestodes, 3 types of nematodes.

Conclusion. Based on the studies carried out, we can assess the epizootic situation of intestinal helminthiasis in dogs caused by the detected types of helminths. 7 types of helminths circulate in the region. The most dangerous epidemiologically is echinococcosis. Based on the dynamics of infection of dogs with helminths, we came to the conclusion that the following reasons are the main factors affecting the presence and number of infestations:

In all farms, the keeping of dogs was free, or were on a leash, and some were kept freely.

Lack of well-equipped points for the collection and disposal of animal waste, corpses of dead animals, delivery of offal from slaughterhouses, meat confiscated for feeding dogs. The situation is aggravated by the rapidly developing sector of private animal husbandry and the lack of demand for veterinary and sanitary measures.

Private farms are trying to do without the necessary veterinary treatments due to cost savings.

On the farms, in order to preserve the livestock, they tame the dogs to livestock and keep them together with them. In addition, the uncontrolled breeding of dogs, and their infestation with teniids, leads to the contamination of the territory with invasive elements, thereby creating new opportunities for the invasion of farm animals.

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ТҮЙІН

Жаһандық жылындан туындаған экологиялық өзгерістер жабайы жыртқыштардың популяциясының шыңына және қалалық және қала маңындағы аудандарда қаңғыбас иттердің көбеюіне әкелді. Нәтижесінде үй жануарларына арналған инфекцияның ықтимал резервуарларының саны өсті, бұл популяцияны сақтау мен зоонозды гельминттердің таралуын жалғастыру үшін алғышарттар жасады. Иттердің негізгі гельминтоздарын, белгілі бір аймақтарда кең таралған гельминтоздардың эпизоотиялық мәселелерін зерттеу белгілі ғылыми және практикалық қызығушылық тудырады.

Жеке гельминттерді жұқтырған иттер оларды ауылшаруашылық жануарлары мен адамдарға өткізіп, ауруды тудырады. Әдебиеттерді талдау иттердің паразиттік аурулары кең таралғанын көрсетті. Белгілі бір экологиялық жағдайларда гельминтофаунистік кешенді қалыптастыру кезінде бірқатар факторлар маңызды. Ең бастысы-түрлердің биологиялық ерекшеліктері. Иттер-гельминттердің кең спектрінің иелері, соның ішінде таспа құрттары, жалпақ құрттар және нематодтар. Бұл паразиттер иттердің денсаулығына зиянды әсер етеді және ауру мен өлімге әкеледі, әсіресе жас (күшік) және ескі жануарларда.

Осыған байланысты гельминттердің, ет қоректілердің эпизоотологиясы мен экологиясын зерттеу өзекті болып табылады. Осылайша, ит паразиттерінің таралуын зерттеудің эпидемиологиялық және эпизоотологиялық маңызы зор. Бұл зерттеу ішек гельминттерінің паразиттік инфекцияларының таралуын және адамның жұқтыру қаупінің факторларын анықтауға бағытталған. Қорытылай келгенде, жүргізілген зерттеулер нәтижесінде Батыс Қазақстан облысының иттерінде гельминттердің 7 түрі, оның ішінде цестодтардың 4 түрі, нематодтардың 3 түрі болатыны анықталды.

РЕЗЮМЕ

Экологические изменения, вызванные глобальным потеплением, привели к пику численности популяций диких хищников и увеличению численности бездомных собак в городских и пригородных районах.

В результате этого количество возможных резервуаров инфекции для домашних животных увеличилось, что создало предпосылки для продолжения содержания популяции и распространения зоонозных гельминтов. Изучение основных гельминтозов собак, вопросов эпизоотологии наиболее распространенных гельминтозов в отдельных регионах представляет определенный научный и практический интерес. Собаки, зараженные отдельными гельминтами, распространяют их среди сельскохозяйственных животных и людей, тем самым вызывая тяжелые заболевания. Анализ литературы показал, что паразитарные заболевания собак имеют повсеместное распространение. При формировании гельминтофаунистического

комплекса в определенных экологических условиях важное значение имеет ряд факторов. Наиболее важными являются биологические особенности видов. Собаки являются хозяевами широкого спектра гельминтов, включая ленточных червей, плоских червей и нематод. Эти паразиты губительно влияют на здоровье собак и вызывают заболеваемость и смертность, особенно у молодых (щенки) и старых животных. В этой связи изучение эпизоотологии и экологии гельминтов, плотоядных и других биологических особенностей является актуальным.

Таким образом, изучение распространения паразитозов собак имеет важное эпидемиологическое и эпизоотологическое значение. Это исследование было направлено на определение распространенности паразитарных инфекций кишечных гельминтов и связанных с ними факторов риска заражения человека. Таким образом, в результате проведенных исследований установлено, что у собак в Западно-Казахстанской области циркулируют 7 видов гельминтов, из них 4 вида цестод, 3 вида нематод.

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**ПРОФИЛАКТИКА ОСЛОЖНЕНИЯ БЕРЕМЕННОСТИ У СУЯГНЫХ ОВЦЕМАТОК
С ПРИМЕНЕНИЕМ РАЗЛИЧНЫХ ПРЕПАРАТОВ
PREVENTION OF PREGNANCY COMPLICATIONS IN PREGNANT EWES WITH THE
USE OF VARIOUS DRUGS**

Аннотация

В статье показаны результаты применения различных лекарственных средств для профилактики осложнений беременности у беременных овцематок. При трехкратном