DOI: 10.38095/2181-466X-20251171-38-40 UDC 616-094:616-093

PECILOMYCOSIS AND ECHINOCOCCOSIS: RESEARCH AND MODERN ACHIEVEMENTS

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Key words: pecilomycosis, echinococcosis, sick people, domestic and wild animals.
Tayanch so‘zlar: pecilomikoz, echinokokkoz, kasal odamlar, uy hayvonlari va yovvoyi hayvonlar.
Ключевые слова: пециломикоз, эхинококкоз, больные люди, домашние и дикие животные.

Pecilomycosis and echinococcosis are two different diseases caused by parasitic infections that pose a serious threat to human health. In recent years, research into the prevention, diagnosis and treatment of these diseases has increased significantly. In this article, modern achievements in the study of these infections and their impact on the practice of medical care are considered. Pecilomycosis is a rare infectious disease caused by fungi of the genus Paecilomyses. One of the modern achievements in the fight against pecilomycosis is the development of new antifungal drugs capable of destroying Paecilomyses fungi with high efficiency and safety for the patient's body. Echinococcosis is a parasitic disease caused by tapeworms of the genus Echinococcus. This infection is spread through contact with infected animals or food. The situation with echinococcosis is complicated by its complex diagnosis and treatment. One of the achievements in this field is the use of molecular techniques to identify genetic markers of Echinococcus, which helps to detect an invasion early and prevent its spread. It is necessary to continue research in this area in order to develop more accurate diagnostic methods, improve medicines and develop preventive measures.

PECILOMIKOZ VA ECHINOKOKKOZ: TADQIQOTLAR VA ZAMONAVIY YUTUQLAR

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Pesilomikoz va exinokokkoz parazitar infektsiyalardan yuzaga kelib, ikki xil kasallik hisoblanadi. inson salomatligiga jiddiy tahdid soladi. So‘nggi yillarda ushbu kasalliklarning oldini olish, tashxislash va davolash bo‘yicha tekshirishlar sezilarli darajada tezlashdi. Matnda infektsiyalarni o‘rganishdagi zamonaviy yutuqlarni va ularning sog‘liqni saqlash amaliyotiga ta’sirini ko‘rib chiqamiz. Pecilomikoz-paecilomyses zamburug‘lari keltirib chiqaradigan, kam uchraydigan yuqumli kasallik hisoblanadi. Bemor organizmiga yuqori effektivlik va xavfsizlikka ega Pecilomikozga qarshi kurashda zamonaviy yutuqlardan biri yangi fungisid preparatlarni ishlab chiqishdi. Exinokokk- bu Echinococcus turkumidagi tasmasimon chuvalchanglar keltirib chiqaradigan parazitar kasallik. Bu kasallik kontakt yo‘l orqali infektsiyalangan hayvonlar yoki ovqat mahsulotlari yordamida tarqaladi. Exinokokkoz bilan bog‘liq vaziyatda diagnostika va davolash murakkabligi kasallikni asoratli kechishiga olib keladi. Bu sohadagi yutuqlardan biri Echinococcus genetik belgilarini aniqlash uchun molekulyar texnikadan foydalanib, invaziyani erta aniqlash va uning tarqalishining oldini olishga yordam beradi. To‘g‘ri diagnostika usullarini ishlab chiqish, preparatlarni mukammallashtirish va profilaktika choralarini ishlab chiqish uchun sohadagi tadqiqotlarni davom ettirish kerak.

ПЕЦИЛОМИКОЗ И ЭХИНОКОККОЗ: ИССЛЕДОВАНИЕ И СОВРЕМЕННЫЕ ДОСТИЖЕНИЯ

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Пециломикоз и эхинококкоз являются двумя различными заболеваниями, вызванными паразитическими инфекциями, которые представляют серьезную угрозу для здоровья человека. В последние годы исследования в области предотвращения, диагностики и лечения этих заболеваний значительно усилились. В данном тексте рассмотрим современные достижения в исследовании этих инфекций и их влияние на практику медицинского обслуживания. Пециломикоз – это редкое инфекционное заболевание, вызванное грибами рода Paecilomyses. Одним из современных достижений в борьбе с пециломикозом является разработка новых противогрибковых препаратов, способных уничтожать грибы Paecilomyses. с высокой эффективностью и безопасностью для организма пациента. Эхинококкоз – это паразитарное заболевание, вызванное ленточными червями рода Echinococcus. Эта инфекция распространяется через контакт с инфицированными животными или пищевыми продуктами. Ситуация с эхинококкозом осложняется его сложной диагностикой и лечением. Одним из достижений в данной области является использование молекулярных техник для выявления генетических маркеров Echinococcus, что помогает рано выявлять инвазию и предотвращать ее распространение. Необходимо продолжать исследования в этой области, чтобы разработать более точные методы диагностики, улучшить лекарственные препараты и развивать профилактические меры.

Introduction. Pecilomycosis and echinococcosis are two serious diseases caused by parasites that affect humans and other animals. The study of these pathologies is one of the priorities of veterinary and medical science, since they pose a serious threat to public health. Pecilomycosis is a disease caused by fungi of the genus Paecilomyces varioti and Paecilomyces viridis. This fungus is present in soil, vegetation and other biological environments and can infect humans as a result of injury or decreased immunity. The disease manifests itself in the form of purulent-inflammatory processes in the lungs, bones, joints and other organs, which can lead to serious complications and

even death. Echinococcosis is a parasitic disease caused by tapeworms of the genus Echinococcus. These parasites are distributed throughout the world and their larvae can infect a variety of species, including humans. The disease is chronic and affects the liver, lungs and other organs, causing the formation of giant cysts. Surgery is the main treatment for echinococcosis, and accurate diagnosis of this disease is very important to determine the extent of surgery and postoperative treatment strategies.

Nowadays, a lot of research is focused on finding new methods for diagnosing and treating pecilomycosis and echinococcosis. The development of molecular genetic methods and modern information processing technologies make a significant contribution to this area of science. International scientific teams are working to develop highly sensitive tests and bioactive polyethylene glycols that can increase the effectiveness of treatment for these diseases.

Objective: study of pecilomycosis and echinococcosis in humans and animals.

Materials and methods of research: A retrospective analysis of literature data was carried out. The data from the dissertation work was used. The following methods were used during the study: analytical and descriptive assessment.

Results: The results of the study on pecilomycosis provide the following information: in food-producing animals such as sheep, cattle, pigs and goats, fungi of the genus Paecilomyces were detected in the blood, which are the causative agents of pecilomycosis, a fungal disease. In Uzbekistan, there is a high incidence of echinococcosis in sheep, cattle, pigs and goats. Between 2018 and 2023, female sheep represented 33.7% of advanced cases of echinococcosis, and male sheep represented 37%. The share of cattle is 23.5% and 32.0%, respectively, and for pigs – 61.6% and 35.2%. Affection of animals by echinococcosis should be classified depending on the degree of damage: weak (+), medium (++), strong (+++), and very strong (++++).

We were the first to examine animals affected by pecilomycosis, and they were divided into four degrees of infection by pathogenic fungi. Weak degree (+) is characterized by the content of 6.5-8 thousand poecilomyces fungi in 1 µl of blood, medium degree (++) - 8.5-10.0 thousand fungi in 1 µl of blood, strong degree (+++) - 10 .5-14.5 thousand mushrooms in 1 µl of blood, and a very strong degree (++++) - more than 15.0 thousand mushrooms in 1 µl blood.

Our research also found that poultry such as chickens, turkeys and geese carry Poecilomyces fungus in their blood, and this also applies to wild birds such as mynahs, quail, chukars and crows.

When taking medications for worms, pathological changes occur in the lungs, which are associated with an inflammatory reaction in this organ. Morphological changes are usually of a typical nature with a predominance of the reaction of microcirculation vessels and the formation of exudate. Most often, the inflammatory reaction in the lungs is limited to certain foci and is associated with bronchitis. In addition, in acute venous congestion, dystrophic and necrotic changes in lung tissue may occur, especially when large doses of mebendazole, albendazole and furazalidone are prescribed. In this regard, homeopathic drugs began to be used in the treatment of parasitic diseases, for example, “Todikamp”, “Cheblin”, “Cheblin SK-1”, “Irillen”, made from various medicinal plants. Homeopathic medicines began to attract the attention of surgeons and parasitologists.

In all cases where the parasite lives in the lungs for a long time, fibrosis of the lung tissue, reduction in blood flow, narrowing of the small bronchi and, in some cases, closure of blood vessels are observed.

Morphological changes in dead echinococci do not affect the development of the giant cell reaction. An eosinophilic reaction is often observed in the capsule of dead echinococcal cysts, more often than in living or dystrophically changed cysts. Among dead echinococci in the capsule, the eosinophilic reaction appears in the form of rare individual cells or in the form of extensive clusters, and also reveals spherules of fungi of the genus Poecilomyces.

Some quantitative differences were also established in the amino acid composition of the fluid of echinococci of various morphological changes: for example, the fluid of the echinococcal cyst of E. acephalocysticus contains more cystine, glutamic acid, methionine, valine and tryptophan, and the fluid of E. veterinorum contains more histidine, arginine and aspartic acid. acids.

Microorganisms have a significant impact on the amino acid composition of echinococcal fluid. In infected echinococcal fluid, an increase in the content of amino acids such as histidine, arginine, glycine, threonine and phenylalanine is observed, while glutamic acid predominates in bacteriologically sterile fluid.

Thus, there is a clear relationship between the state of the parasite, the contents of its capsule and the nature of the pathological process in each specific case. An important role is played by the microbiological characteristics and amino acid composition of echinococcal fluid, taking into account the constant presence of fungi of the genus Paecilomyces, which accompany echinococcus.

We have proven for the first time that fungi of the genus Paecilomyces can have active hyaluronidase, which explains the mechanism of lysis of echinococcus cells when interacting with the vegetative form of fungi.

The results of the study showed that infection with Paecilomyces varioti fungi through the abdominal cavity, nasal cavity and digestive tract leads to the development of a generalized infection similar to sepsis and secondary damage to the lungs, as well as the heart and liver.

Such observations allow us to conclude that in many helminthiases complicated by pecilomycosis, morphological changes occur in the heart muscle of animals, regardless of the route of migration of the larvae and the localization of the helminths. The morphological state of the heart during invasion is nonspecific and indicates the development of allergic myocarditis, accompanied by degeneration and necrosis of the walls of blood vessels and myofibrils, eosinophilic infiltration of tissue and degeneration of cardiomyocytes.

Conclusion. Analysis of research results indicates that the inclusion of antifungal drugs in the treatment program leads to a significant improvement in the clinical and instrumental symptoms of this disease. The number of fungi is reduced, which stops their pathological effects and also helps to improve immunological parameters. Correct use of antifungal drugs has a beneficial effect on the course of the disease and prevents possible complications that can lead to a chronic form.

In addition, special attention should be paid to prevention and education, especially in regions where pecilomycosis and echinococcosis are widespread. Educating the public about prevention, hygiene, and safety practices related to land and animals helps reduce the risk of disease and maintains public health.

In conclusion, the study of pecilomycosis and echinococcosis is a serious and multifaceted area of scientific research, which is directly related to human health. Modern advances in the diagnosis and treatment of these diseases open up new prospects in the fight against them and help reduce the risk to public health.

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