



ENTEROBIASIS: EXPERIENCE OF TREATMENT AND FEATURES OF DEVELOPMENT OF NEW ANTHELMINTIC DRUG

NATIONAL UNIVERSITY OF PHARMACY
DEPARTMENT OF PHARMACEUTICAL TECHNOLOGY OF DRUGS



INTRODUCTION

Helminthiasis is ranked second after tuberculosis. Of the 150 worm species present in the world, about 30 are met in Ukraine. At the same time, an absolute majority is involved in enterobiasis (approximately 75 % of cases among helminthiasis of digestive system).

Enterobiasis (pinworms) refers to nematode infections. The causative agent of the disease is *Enterobius vermicularis* (Fig. 1). It is distributed worldwide, including both countries with an unfavorable epidemiological profile and low-level of medical care and developed countries with high-level healthcare. Transmission of pinworms includes faecal-oral and auto-infection routes.



Fig. 1. *Enterobius vermicularis*

Kingdom	Animalia
Phylum	Nematoda
Class	Rhabditea
Order	Oxyurata
Family	Oxyuridae
Genus	Enterobius
Species	vermicularis

PURPOSE

In order to develop new anthelmintic medicine with high level of specific pharmacological activity with low toxicity we proposed the combination of albendazole, recommended by Clinical guidelines by Médecins Sans Frontières, and praziquantel in ratio (1:4) as active substances. The purpose of our work is to study the specific pharmacological activity of this drug.

MATERIALS AND METHODS

Analysis was conducted on pigs (n = 12) in SPC Kharkov State Zooveterinary Academy. Two groups of animals were formed: experimental (n = 6) and control (n = 6). The animals of the experimental group were given the studied drug in the dose 10 mg/kg of body weight on albendazole and 40 mg/kg of body weight on praziquantel. The studies were carried out by the standardized method of Füllbourne and the "Method for the quantitative determination of helminth eggs" (patent No. 9265). Observation of animals was carried out for 7 days.

RESULTS

Thus, the studied drug proved to be effective when spontaneous nematodosis in pigs (Table 1). According to the results of a clinical examination (inspection) of animals after 24 hours of drug administration it was established that the behavior of the animals remained unchanged (natural), the intake of food and water was in the normal, visible mucous membranes were pale pink color, the skin - integral, no damage, elastic.

Table 1
Effectiveness of the studied combined anthelmintic drug in pigs (n = 12)

Animal no.	II, eggs in 1 g of feces			E, %
	before treatment	on the 7 th day after treatment	on the 14 th	
Experimental group				
1	13.3	—	—	100
2	15.7	—	—	
3	12.7	—	—	
4	11.0	—	—	
5	18.3	—	—	
6	15.3	—	—	
M±m	14.4±1.1	—	—	
Control group				
1	12.3	13.0	12.3	—
2	15.3	15.0	15.0	
3	10.3	10.3	10.0	
4	9.0	9.7	10.0	
5	12.0	11.7	12.3	
6	11.7	13.0	13.0	
M±m	11.8±0.9	12.1±0.8	12.1±0.8	

CONCLUSION

The existing clinical protocol of enterobiasis treatment requires updating and expansion. When developing a national clinical protocol for the treatment of enterobiasis in Ukraine, it is advisable to present an extended treatment regimen supplemented with schemes for pathogenetic, desensitizing and symptomatic treatment.

As the proposed medicine showed a high level of specific pharmacological activity, it is expedient to carry out the further research and to study the possibility of introducing such compositions into an updated clinical protocol for the treatment of helminthiasis of digestive system.

Vyshnevskaya L. I.
Semchenko K. V.