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NA Hasanli
Institute of Zoology National
Academy, of Azerbaijan

Teniidies small horned livestock in the North-Eastern foothills of the small caucasus and the factors influencing their distribution

NA Hasanli

Abstract

As a result of the conducted research in various areas of the North-Eastern slopes of the Small Caucasus (Ganja, Gazakh, Shamkir, Tovuz) it was identified 4 types of tenidium in small cattle (sheep, goats), as well as identified the factors affecting their distribution. It was noted high intensity (35.2%) and intensity of infections (3-8 specimens) in animals infected with *Taenia hydatigena*. It was prepared the recommendations for prevention measures against *Echinococcus granulosus* with epizootic and epidemiologic value.

Keywords: Small-horned animals, carnivorous animals, helminth, abiotic factor, epizootology, epidemiology

Introduction

To provide the population with clean ecological meat and meat products, it is necessary to protect the ruminantia domestic animals against helminths. Helminths cause increase of weight, reduction in fertility, infertility, death of animals and economic losses and damages.

In most cases infection with helminthes of ruminantia domestic animals, in particular small-horned animals can cover 80-90% of the territory of the republic. Of such teniidiosis helminthes should be specifically mentioned.

Teniidiosis affect seriously the cattle-breeding in both larvae and mature stage. They lead to economic damages to cattle-breeding in the larvae stage (*Echinococcus granulosus*, *Taenia hydatigena*, *Multiceps multiceps*). Cystic of these helminthes form cysticercosis in small-horned animals and reduce the fertility of cattle-breeding (meat, milk, eggs) and its quality.

Widely spreading in the mature stage, they generate teniidiosis. Teniidiosis cause exclusion of internal organs of the small-horned animals and when animals catch malaria, it leads to death.

There is a number of information on study teniidies of small-horned animals in different ecological zones of the republic [1-6]. Such researches are conducted in some regions of the republic. However, the spread of teniidies among small-horned animals in the northern-east areas of the Small Caucasus mountain, some affective factors and epizootological and epidemiological importance of have not been found yet.

Therefore, it is important to reveal teniidies of small-horned animals and specify the reasons of their spread among animals in the northern-east areas of the Small Caucasus.

In consideration of the foregoing, we have considered reasonable to reveal of teniidies of small-horned animals and study their bioecological properties in the northern-east areas of the Small Caucasus.

Materials and methods

From different private and farming areas and surrounding areas of the northern-east parts of the Small Caucasus, 34 sheep were studied by incomplete autopsy, and fecal samples of 58 small-horned animals from surrounding and other areas were studied by Berman method [7].

To reveal teniidi of the small-horned animals, 34 small-horned animals from different private and farming areas were studied by incomplete helminthological method. (Skryabin).

The cestodes found were fixated in 70° alcohol.

The method of coloring is applied in revealing of cestodes and permanent preparations are made. From nematodes are used to make temporary preparations by mixing lactic acid with glycerine (1:1).

Correspondence
NA Hasanli
Institute of Zoology National
Academy, of Azerbaijan

Both permanent and temporary preparations and biometric sizes were increased x20 and x40, viewed under Olympus microscope and their species were determined on the basis of classification book.

Results and Discussion

Upon researches, eggs of 6 types of teniidi were found in

small-horned animals and 3 types of teniidi in the fecal samples.

The revealed helminthes belonged to the class of cestodes, and are considered biohelminthes for the circle of their development (table 1).

Table 1: Spread of teniidi among animals in the northern-east slopes of the Small Caucasus (in%)

| Helminthes | Found | Infected | Infection extensivity (%) | Infection intensivity | Total helminthes |
|--------------------------------|-------|----------|---------------------------|-----------------------|------------------|
| <i>Taenia hydatigena</i> | 34 | 12 | 35,2 | 3-8 | 118 |
| <i>Taenia ovis</i> | “-“ | 9 | 26,5 | 2-4 | 69 |
| <i>Echinococcus granulosus</i> | “-“ | 8 | 23,5 | 6319-13 256 | 21 376 baş |
| <i>Multiceps multiceps</i> | “-“ | 3 | 8,8 | 2-4 | 12 |

As it is seen from the table, the teniidi have spread among small-horned animals in different ways.

Taenia hydatigena has been spread with high extensivity (35,2%), and 3-8 species of total 18 were widely spread with high intensivity.

Eggs of 3 types of teniidi were found in the revealed fecal samples (table 2).

As it is seen from the table, the highest number of *T. hydatigena* eggs were found in the fecal samples. Infection of *T. hydatigena* of fecal samples with eggs equals to 53,6%; whereas its intensivity is 15-34. In total, 158 eggs were found in fecal samples.

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The extensivity of the eggs of *T. ovis* species in the studied fecal samples was 32.6%, and intensivity was 4-6 species, and 89 eggs in total.

Main reason of spread of teniidi among small-horned animals is social factors. As a result of social-economic changes occurring in the republic previous structures were destroyed, so new farming and private areas were established in the territory with no veterinary control. In such areas, internal organs of the animals infected with teniidi are thrown out into environment. The carnivorous animals feeding with the infected internal organs are also infected. Such animals infect small-horned animals with teniidi eggs, grass and water spread into environment.

Thus, teniidi always circle between carnivorous animals and small-horned animals in the same territory.

Table 2: Teniidi found in fecal samples

| Helminthes | Revealed fecal samples | Number of fecal samples in which were found teniidi eggs | Infection extensivity (%-la) | Infection intensivity (from – to) | Total teniidi eggs |
|------------------------|------------------------|--|------------------------------|-----------------------------------|--------------------|
| <i>T. hydatigena</i> | 58 | 31 | 53,6 | 15-34 | 158 |
| <i>Ech. granulosus</i> | 58 | 27 | 46,5 | 3-780 head | 32.731 |
| <i>T. ovis</i> | 58 | 19 | 32,6 | 4-9 | 89 |

Carnivorous animals play an important role in the spread of teniidi between humans and ruminantia.

The eggs of teniidi are able to keep their invasiveness for a few months, they are infected again.

The eggs of *Ech. granulosus* species can stay for more than 110 days even when the temperature of weather is zero degree. The eggs of *T. ovis* species can maintain their invasiveness for 90-60 days in natural conditions.

Teniidi found in the small-horned animals are of epizootological importance for ruminantia and domestic animals and epidemiological importance for the other domestic animals. Of teniidi *E. granulosus* has relatively low extensivity and intensivity as a result of researches, so they are dangerous for humans and the ruminantia. Humans can escape from *Echinococcus* only by operation^[8,9].

So, as a result of researches conducted in the northern-east of the Small Caucasus, 6 types of teniidi were found in small-horned animals.

Of teniidi *T. hydatigena* spreads widely among small-horned animals with the highest extensivity and intensivity.

Considering the serious economic losses to cattle-breeding, necessary epizootological and epidemiological significance of the teniidi, small-horned animals shall be prevented from being infected with teniidi.

First of all, therefore, the factors that lead to teniidi shall be

eradicated, carnivorous animals shall be prevented from entering into farms and preventive measures shall be taken against the teniidi in some areas. Farmers and vets shall also be involved in this work.

Conclusions

1. Teniidiosis principally included into helminthosis series, it is of practical importance to study their bioecological characteristics.
2. Four species of teniidi in small horned animals were discovered during investigations which were done in north-east foothills of Small Caucasus and their causes of spread among animals have been identified.
3. *T. hydatigena* from teniidi is dominated due to its highest extensiveness and intensity among small horned animals.
4. The 53, 6% extensiveness and 15-34 intensity of *Taenia hydatigena* eggs in fecal samples also were observed.

References

1. Asadov SM. Zonal distribution of helminthes and major helminthiasis of village animals in Azerbaijan and proposals to strengthen their control. Baku, Elm, 1975, 90
2. Asadova-Gayibova SS. Ecological and geographical

characteristics of the distribution the hydatid of echinococcus in sheep, cattle, and buffalo in Azerbaijan and the issue of alveococcosis in these animals. Abstract. can. diss. Bacu, 1974, 22

3. Malikov YF. *Cysticercus tenuicollis* in sheep in the Greater Caucasus within the Azerbaijan SSR and in the Absheron-Gobustan zone // Thesis rept. of symposium on helminthes. SAI mites SSR, 1986, 147
4. Sadiqov IA, Malikov YF. The spread of echinococcosis of agricultural animals in the areas of the Kura-Araz lowland of the Azerbaijan SSR // Research on helminthes - Azerbaijan. Elm publication, Baku, 1977, 88-89
5. Samedov AG. Zoonotic helminthiases (finiosis, echinococcosis, cenotariosis) of agricultural animals and measures to combat them in the Mikorashka zone of the Azerbaijan SSR. Abstract. Diss. Candidate of Biological Sciences, 1968, 22.
6. Sadiqov IA, Fataliyev QH, Yolchuyev MSh, Ibrahimova RSh. studying the effect of temperature, humidity and light to the development and spread of *Taenia hydatigena* in Ganja-Gazakh regions of Azerbaijan // News of the Academy of Sciences of Azerbaijan SSR, 1993; (1-3):87-94
7. Boev SN, Sokolov IB, Panin VY. Helminthes of hoofed animals in Kazakhstan. Alma-Ata, 1962, 373
8. Kononov VS, Mikiyev KM. Echinococcosis of the liver in children // Petiatric surgery. 1999; 2:24-27
9. Balazin VA, Fomina-Chertousova NA. Echinococcosis of the spine and spinal cord / Sankt-Petersburg practical conference. СПб, 2005, 270-271.