

New Information About Goat Monieziosis And Its Causes

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Abstract – Monieziosis has been identified as a deadly cestodosis in goats, with symptoms that are frequently acute and lethal. New species of Moniezia have been identified that differ from the previously known and widespread causative agents of Moniezia expansa, M.benedeni, in the robust structure of the strobilus, the larger size of the scolex and correspondingly the suckers, the shape of the segments, the accelerated growth in both transverse and longitudinal directions, the more rapid onset of sexual maturity, and a much shorter body.

Keywords – Moniezioz, Moniezia Expansa, M.Benedeni, Moniezia Species, Skoleks, Strobila.

I. INTRODUCTION

Monieziosis is a serious helminthiasis caused by numerous species of large cestodes that parasitize sheep, goats, and cattle, as well as some wild ruminant mammals, in their small intestines. Cestoda Rudolphi 1808 belongs to the Cyclophyllidea Beneden in Braun, 1900 family of diseases. Anoplocephalata Skrjabin 1933, Anoplocephalidae Chladkowsky 1902, Anoplocephalata Skrjabin 1933, Anoplocephalata Skrjabin 1933, Anoplocephalata Skrjabin 1933, An Adult moniezia can grow to be between 1-2 and 10 meters long. They cause disease in both acute and chronic currents.

Monieziosis is extremely harmful to young animals. Moniesia has a developmental type that is similar to dixer. Their intermediate hosts are small-sized oribatid (soil) tubes that belong to the spider class of arthropods. More than a dozen species have been identified as intermediate hosts of the Moniez on Uzbekistan's territory. Azimov, Sh. A., 1974. Soil canals are humus-like arthropods that can be found on all plains, arid pastures, and hilly foothills. Therefore, monieziosis is a common disease all over the world, especially in Central Asian countries and Kazakhstan.

Fanda knows 14 species of the Moniezia genus. Among them Moniezia expansa (Rudolphi, 1810), Moniezia benedeni (Moniez, 1879), Moniezia autumnalia (Kuznetsov, 1967), Moniezia alba (Perroncito, were found to parasitize sheep, goats and cattle in the CIS region. The remaining 10 species of moniezia are found in some countries of Europe, the Americas and some wild mammals (deer, partridges, etc.) in the territory of Kazakhstan.

In 1963-1975, parasites of monieziosis in goats M.expansa, M.benedeni (I X Irgashev, 1963, 1973, MA Sultanov and others, 1975) were detected in different regions of Uzbekistan. In addition, S. Kurbanov (1975) noted the presence of M. autumnalia in goats in the foothills of Namangan region, but did not explain its morphological features that distinguish it from other species of moniezia. This species of Moniezia M.expansa, and M.benedenidan has narrow (6-8 mm) joints, the longened joints are longer than the width of the joints (M.I. Kuznetsov, 1967), the length of the strobilas is 60 cm to 250 cm, the uterus is reticular and ovate. With 10-12 facets (E.M. Matevosyan, S.O. Movsesyan, 1927) it differs sharply.

In recent years, the first scientific data on the species composition of pathogens of sheep moniesiosis in the conditions of Uzbekistan were published in the 11th issue of the Journal of Veterinary Medicine in 2013 (B. Salimov et al.). It records the

occurrence of new pathogens of moniezirosis, which differ sharply in morphological features, except for *M.expansa* and *M.benedeni*, identified in 1998-2005. In this article, we found it necessary to study the existing problem of theoretical and practical significance in goat moniezirosis.

II. RESEARCH MATERIALS AND METHODS

The research materials and methods used were cestodes found in the small intestine sections of goats that died and were slaughtered in the foothills of the Samarkand region in 2019-2020, and their joints, which were torn out with animal manure. The scientific data obtained as a result of studying the important morphological aspects of the collected cestodes and their mature joints were analyzed in a comparative manner with the literature data on the subject. Relevant data on the epizootiological significance of moniezirosis for goats were obtained through special observations.

III. RESEARCH RESULTS

As a result of special studies and observations, it was noted that moniezirosis is a dangerous disease not only for sheep but also for goats, passing it in acute and chronic conditions similar to sheep. The acute course of moniezirosis is most often observed in 3–6-month-old goats in April-May. Young animals intensively infected with moniezia begin to lag behind the herd, their appetite decreases, and then it disappears completely. After a while, they become restless, kicking the ground with their feet, shaking their heads, and often lie down, while their stomachs tense up, sometimes they have diarrhea, and suddenly they fall to the ground, kicking their feet and rubbing the ground with their heads.

When carcasses of dead or forcibly slaughtered goats were dissected, it was observed that their small intestines were filled with gas and cestodes in a tense manner, and even ruptured, monoecious and other cestodes were collected in one place, impervious to the feed mass. A total helminthological dissection examination of the intestines revealed that between 6 and 14 cestodes are parasitised in the intestines of each young goat. A total of 56 specimens of cestodes were found in the small intestine of 6 goats examined. Of these, 18 were *M.expansa*, 15 were *M.benedeni*, 10 were *Moniezia* species, 3 were *Thysaniezia gardi* (*Moniez*, 1879), and 10 were *Avitellina* species. The most dangerous among them are *M.expansa* and *M.benedeni*, because the strobiles of the former are very wide, while those of the latter are very long and wider than those of other species of cestodes.

Of the 78 head of goats examined by helminthoscopy, we found that the joints of the cestodes were severed with 12 head feces. Accordingly, their total infestation with cestodes was 15.4%. Of these, 4 heads (5.1%) with *M.expansa*, 3 heads (3.8%) with *M.benedeni*, 1 head (1.3%) with *Moniezia* species, 4 heads (5.1%) found to be infected with mixed cestodes.

Briefly on the morphological features of moniezia found in goats, the strobiles of *M.expansa* cestodes range in length from 1 m 35 cm to 3 m 20 cm, and the width of mature joints from 8–10 mm to 12–14 mm. The scolex is small in size, almost spherical in shape, 0.80 x 0.90 0, 90 -1.0 mm in diameter. The neck is very short, no more than 4-5 mm. The joints formed from it begin to grow slowly along the neck, fast and almost flat in width. Strobilas are slightly thicker, white-milky. The uterus is reticulate, with an infinite number of eggs in it, mostly a triangular, six-lobed oncosphere with a noxious apparatus. The genitals are placed two each to the left and right of the joints. The cestode is weakened, most often the joints of the strobilas are in the range of 180.0-240.0 cm.

In studies, the length of the strobile of *M.benedeni*, from 1 m 66 cm to 3 m, it is milky, in some cases yellowish. Scolex small, somewhat smaller in diameter than *M.expansa*'s, but almost round, the neck is very short, the joints begin quickly along the neck, they grow in a single rhythm, the width of the mature joints reaches 22-24 mm, they are slightly rounded. The genitals are two, they are located on either side of the joint like *M.expansa*'s. The uterus is reticular, with oncospheric, noxious apparatus eggs, often 4-sided, in some cases 5-6-sided. Its maturation is slower than that of *M.expansa*.

*Moniezia species*1. Strobilas 1 m 65 cm long, white, thickly structured. The scolex is small, 0.870 x 0.650 mm in diameter, with a neck of about 4 mm. The joints begin to grow very quickly in width, partly in height. 20 cm cestode joint width 6.0 mm, width 0.6 mm, at 30-40 cm, joints width 6 mm, height 0.8 -1.2 mm, length 1 m, width 8 mm, 1.18 m to 1 m 46 cm 10 mm, but not mature. *In M.expansa, the width of the last joint of a 1.5-meter cestode is only 6 mm, and the width of the last joint of a cestode close to 3 meters and slightly longer does not exceed 9 mm.*

*Moniezia species*2, faster-growing cestode, strobilas 1 m 24 cm, scolex large, round, diameter 0.80 x 0.950, very short, 6 cm long, joints width 2.4 mm, 9.0 cm, 3.4 mm, 22 cm 5 mm in diameter, 8 mm in 50-60 cm, 10 mm in 70 cm, then they are slightly

reduced in width, reaching 80 mm at 80-90 cm. Then the width of the joints grows again, in the last joint it grows 13 mm faster than in the neck of *M.expansa* and *M.benedeni* larniki, the width of the joints at 90 cm is 2.4 mm, their length is slightly reduced due to the increase in the width of the last joints. This cestode was found to be immature.

Moniezia species 3 Strobilas 96 cm, white-milky in color, the scoliosis is slightly larger, the neck is much longer, the joints start from the neck and begin to grow faster in width than *M.expansa* and *M.benedeni*. For example, the width of the joints at a distance of 10 cm from the scolex is 4 mm, and at 20 cm - 6 mm (in *M.expansa* the width of the joints at this distance does not exceed 3 mm), but then the joints grow very slowly and at 96 cm its width is 12 mm, 0.7 mm in height. The uterus is reticulated, in which no eggs are laid. This cestode is distinguished from *M.expansa* and *M.benedeni* by the thick structure of the strobilas, the rapid growth and acceleration of the joints, and the length of the neck.

Moniezia species 4. The scolex is small, the short neck is 1 m 70 cm, white, milky, thick. The articulation begins as quickly as a short neck like *M.expansa* *M.benedeni*. But the joints begin to grow rapidly, then shrink slightly in width and take the form of a chain, the last joint becoming impenetrable and shortening in width. Immature eggs were found in the uterus of this cestode. With a number of such morphological features, this cestode also belongs to the *Moniezia* genus, but differs from other moniezias by the rapid growth of the joints to the initial width, but the subsequent shortening of the middle joints to 7-8 mm in width to 4 mm. Although the shape of the subsequent joints resembled that of the avitellinas, eggs of smaller size were found in them, rather than cocoons.

Moniezia species 5 Strobilas 1 m 16 cm and 1 m 39 cm, mature, white scolex very large, diameter 1.70 x 1.64, correspondingly large suckers (0.40 x 0.52 mm). The neck is very short (5-6). The joints starting from it are sharper under the microscope than those of *M.expansa* and *M.benedeni*'s, but they are very narrow. (0,40-0,45 mm). The joints at a distance of 10 cm from the neck grow very fast and their shape is leafy, the length is relatively long (1.28 x 1.06 mm), the height of the *M.expansa* joints at this distance is very high (0.13 mm) relative to the width (1.45 mm). short, 25 cm long joints shortened to the neck, grown in width and almost square in shape (width 1.60 mm, height 1.22 mm) and on both sides of them appeared genital holes. Later the joints took on the shape of a chain, the width of the end joints being sharp in width (5 mm) and growing in height (3 mm), but not mature. We have also encountered this new species of cestode in lambs.

Thus, in sheep as well as in goats, in addition to *M.expansa* and *M.benedeni*, we found that a new species of monieziosis pathogens is parasitic. They are morphologically distinguished from a number of recorded and common monieziosis pathogens by a number of symptoms, rapid maturation and shortness of body.

IV. CONCLUSION

Monieziosis has been found to be a dangerous cestodosis for goats, passing it in a sharp stream that can be fatal. A new species of moniezia has been reported in this species, which differs sharply in morphological features from pathogens such as *M.expansa*, *M.benedeni*, which are still known and widespread. They are characterized by a thick structure of the strobilas, scolexia and, accordingly, the size of the suckers, changes in the shape of the joints appearing from the neck, rapid growth in width and height, shortness and rapid growth of the body, shortness of body and rapid maturation.

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