SECTION VI. VETERINARY MEDICINE

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Epizootic situation of the pest of small ruminants

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Abstract

In the article authors gave the short characteristic of history of emergence of illness in the Republic of Tajikistan, pest of small ruminants virus drift sources, presumably with sick animals from the neighboring Afghanistan are defined. It is noticed that as a result of the events for fight against pest of small ruminants held in the Republic it was succeeded to reduce significantly incidence of illness during the period from 2012 to 2016.

Source of a drift of the pest of small ruminants virus and the cause of epizooty in the territory of the Republic of Tajikistan most likely the infected animals from Afghanistan were. Factors of distribution of the agent of pest of small ruminants in the republic is the distant-pasture livestock production. Maintenance and expansion of an osological area of illness are influenced noticeably also by seasonality of implication of illness as during a rainy season (February–March) and in droughty the periods (June–October) the number of episodes of illness increases.

The measures of fight against pest of small ruminant taken in the Republic of Tajikistan during the period since 2005 till present, including the organization of planned use of winter and summer pastures, holding disinfection measures in the infection centers, well-timed isolation of animals, sick and suspicious on a disease, explanatory work with the population, preventive immunization of an acquisitive livestock of sheep, significantly reduced incidence of this illness.

Keywords: pest of small cattle, anti-epizootic actions, virus of pest of small ruminant, illness spread, immunization

The pest of small ruminants is a highly contagious virus disease of sheep and goats, passing acutely and subacutely, involving fever, canker of tunic mucosa of mouth and schneiderian membrane, conjunctivitis, hemorrhagic damage of lymphoid system and progression of pneumonia. The agent of pest of small ruminant is RNA-virus containing Paramyxovirus, morbillivirus species, according to OIE classification the pest of small ruminants is on the list of dangerous diseases, people do not become infected by the pest of small ruminants [1,2].

Domestic and also wild goats and sheep are amenable to the pest of small ruminants. What is more, goats become ill more often and harder than sheep. The most amenable animals to this disease are West African and dwarf goats and some hybrid breeds of these animals. Kids and lambs, because of inipient immunity, show high sensitivity to the virus of pest of small

ruminants. Amenability to the disease also depends on the keeping and feeding conditions, physiological state (pregnancy of ewe and others), presence of obvious and latent signs of manifestation [3-4,10]. Besides the above mentioned animal species, mountain goats, gazelles, chamois, laristangoats are amenable to this mobile virus infection, the disease can be followed by death. During the experimental infection the disease of saigas, mountain goats, oryxes, gazelles, Cameroon goats and American whitetail deer were noticed. So Hamdy F.M. et Dardiri A.H. (1976) infected intrastain at a dose of 10^4 TCID₅₀ tissue cytopathic dose and one was left for the contact. Similarly the infection of deer was conducted by strain – Nigerian. Two deer died of clinical picture of pest of small ruminants, but the recovered animal had a fall test of blood serum specific antibodies to the virus of this disease [11]. The agents of pest of small animals are both ill and infected animals, that are in incubation period of disease. Virus isolates with all excreta and secretum from the organisms of all animals. Aerogenic way of pathogen transmission is the main way, but besides contact and alimentary ways are possible. [8-9,12-19]. As virus of the pest of small ruminants is unstable in outside environment, the pathogen transmission is conducted at the contact between ill and amenable animals.

The official name of disease is pest of small ruminants was given in 1980 at International Symposium (Jabado, Nigeria) where on the ground of accumulated data on immunobiological properties of the agent and research of virus genome of pest of small ruminants was separated into special nosological group of Morbillivirus species and further it was classified by MKTV [5-7]. In 2004 there were 34 countries unfortunate on pest of small ruminants in the world, but to 2014 the number of such countries with this disease was 55 including Eurasia, there were 20.

The research goal was the study of epizootological situation on pest of small ruminants in the territory of districts and regions of the Republic of Tajikistan from 2012 to 2016.

Research targets and methods

The study of epizootology of pest of small ruminants in the Republic of Tajikistan was conducted using accountancy data of veterinary health centres at the struggle against animal diseases in districts and regions and according to veterinary expeditions.

Research results

During the period from 1995 till 2005 in the Republic mass mortality of sheep and goats of unknown disease was observed. Here with mortality among young and adult animals reached 50% depending on the region and season.

First in the Republic of Tajikistan the pest of small ruminants officially was registered in 2005, on the results of research of blood serum of ill and recovered animals. In separate flocks a high level of antibodies in EIA (from 1:50 to 1:3200) it was discovered at 80% of animals. At first disease was registered in south regions of Republic, closely bordering with Islamic Republic of Afghanistan. Such stock-raising districts as Jililikul, Kobodiyen, Pyandzh, Vose, Hamadoni, Vahsh and RRS were losing hundred of animals among sheep and goats, mortality among young and adult animals was from 20% to 50%.

During conducting clinical, epizootological and laboratory researches it was established that the reasons of disease and animal mortality in the virus of pest of small ruminants.

Then the disease with similar clinical and pathologic-anatomic features was registered in north regions of RRS (Aini, Rasht, Vakhdat).

Analyzing epizootological situation in the Republic of Tajikistan by pest of small ruminants it must be noted that the important factor of spread of agent of pest of small ruminants in the Republic is distant pasture cattle tending, when raking animals, mass

gathering of animals and also expanding and more intensive trading relations between regions are noted. On maintenance and expanding of nosological area of disease seasonality of disease influences the disease, as during the rains (February–March) and in drought seasons (June–October) the number of episodes increases.

The results of study of epizootological situation on the pest of small ruminants in the territory of districts and regions of the Republic of Tajikistan in the period from 2012 to 2016 are shown in Table 1.

As we can see from the table, the pest of small ruminants obtained a wide circulation in the territory of the Republic, otherwise the tendency to the reduction of epizootological tension on this disease is noticeable in a period under study. To begin with the positive dynamics of pest of small ruminants is connected with intensification of activities against the disease in the whole territory of the Republic. Organization of planned usage of winter and summer pastures, conduction of disinfecting measures in center of infection, on-time isolation of ill and suspicious on disease animals, explanatory work with population and also prophylaxis immunization of amenable livestock of sheep and goats.

Table 1.

Spread of pest of small ruminants in the Republic of Tajikistan in 2012–2016

Regions and districts	Number of episodes by year				
	2012	2013	2014	2015	2016
Khatlonskaya region	5	5	3	2	2
Djilikulskiy district	2	2	2	2	1
Kabodiyanskiy district	1	1	-	-	-
Pyandzskiy district	1	1	1	-	-
Vakhshskiy district	1	1	1	1	-
RRS	2	2	2	2	2
Rashtskiy district	1	1	1	1	1
Sh. Vakhdat	1	-	-	-	-
Kulyabskaya zone	2	2	2	2	1
Voseyskiy district	1	1	1	1	-
A. Khamedonid district	1	1	1	1	1
Sugdskaya region	1	1	1	-	-
Ayninskiy district	1	1	1	-	-
Total	20	19	16	12	8

Conclusion

The agent of pest of small ruminants and reason of emergence of epizooty in the territory of the Republic of Tajikistan were infected animals from Afghanistan.

The basis of prophylaxis of pest of small ruminants is prevention of importation of animal diseases from unfortunate countries with infected animals. For this reason the immunobend is created at a depth of administrative region (at least 30 km) by yearly planned immunization of everybody who is in the zone of livestock of small cattle. In the face of direct threat of emergence of pest of small ruminants special committees at the struggle against this disease are recreated. They determine the list of necessary work on prediction of spread and liquidation of disease on case of its importation, the control of their fulfillment in epizootic centre, unfortunate places and troublesome zones. During the organization of antiplague measures the territory of epizootic center, unfortunate center and troublesome zones on pest of small ruminants must be clearly marked for sequestration and prevention of its spread according to the requirements of veterinary laws and recommendations of OIE on plague of cattle, that are put into these documents. The practice is conducted at the end of 21 days since death or slaughter of the last ill animals in unfortunate center with the complex of veterinary sanitary measures and liquidation of center of infection.

Efforts to crack down on pest of small ruminants which were done in Tajikistan since 2005 till the present days including organizational, veterinary sanitary and preventive measures, including conduction of vaccination of livestock of sheep and goats against pest of small ruminants in boundary zones, reduced essentially the incidence of this disease. The basis of preventive measures and warning of pest of small ruminants is prevention of importation of disease agent from unfortunate husbandry and territories with infected animals. The procurement of fodder must be done in safe territories without pest of small ruminants. During pasture seasons animals must be pastured at separate places of pastures with isolated water and pasture, not allowing the mixture with other groups and kinds of animals.

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