

Wildlife rabies control and management in Tatarstan (Russian Federation)

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Abstract

Over the years, in Tatarstan, the activation of natural focus of rabies has been periodically noted, and the risk of introducing infection from adjacent regions remains. Sporadic outbreaks of rabies in animal populations are largely unpredictable, highlighting our lack of knowledge about how the virus is transmitted and spread in the wildlife. In this regard, comprehensive analysis of the geographical distribution of rabies, study the structure of animal species involved in the epidemic process, cyclic recurrence identification, seasonality, risk factors, along with effectiveness of preventive measures assessment remain as actual challenge.

Wild animals are involved in the epidemic spread of rabies infection in Tatarstan. Periodic rises in the incidence of rabies are observed every 2-3 years. In the species structure of the disease, foxes (*Vulpes vulpes*) account for the main share (96.9%) among wild carnivores. Rare cases of rabies have been observed also in other species. However, the level of their involvement in the epidemic process and the role in the infection transmission to wild herbivores, domestic animals and humans, has not been fully established.

Since 2016, there is the attenuation of the activity of natural infection cycles. The 15-fold decrease in wild rabies likelihood is primarily due to the large-scale oral vaccination campaigns. Annually, two campaigns for oral immunization of wild carnivores and official control of them in accordance with approved Rabies eradication programs are carried out. In addition to the above, the program to reduce the population of foxes also contributed to the stabilization of the rabies epidemic situation at a minimum level of incidence in the wildlife.

Thus, wildlife rabies control and management programs, including regulation of the number of wild carnivores, assessment of oral vaccination campaigns against rabies have become an effective strategy for natural foci of rabies eliminating and stabilizing the epidemic situation in Tatarstan.

Keywords: rabies, *Vulpes vulpes*, vaccination, wildlife, eradication program