

First Monitoring about Wildlife Diseases in Albania

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Abstract

Albania is situated in the Western Balkans and is soon to be part of the EU. As surveillance did not exist 25 years ago, Albania was classified as a European hot spot for the presence of wildlife diseases. Albania is aligned to countries that have a wide range of zoonotic diseases originating from wildlife, such as rabies in wild carnivores, tularemia in wild rabbits, avian influenza (H5N1) in wild birds, Hantaviruses in wild rodents and echinococcosis in fox. Surveillance and monitoring of wildlife diseases is not only a prerequisite for public veterinary health but also an obligation of European institutions for the integration of Albania into the EU. A sector for monitoring and implementing a system for the surveillance of wildlife diseases has been established and operates in Albania since 2004. This consists of lecturers and scientific researchers from the Faculty of Veterinarian Medicine at the Agricultural University, researchers from the Food Safety and Veterinary Institute, experts from Albania Wildlife Disease Association.

Methods

For monitoring the rabies disease: Our study utilized the fluorescent antibody test (FAT) (the most used) and the mouse inoculation test for the rabies diagnosis. This FAT is used directly on smears, and can also be used to confirm the presence of rabies antigen in brain tissues of fox, wolf, dogs etc, especially from the Ammon's horn region of the brain (hippocampus). They are fixed in high-grade cold acetone and then stained with a drop of specific conjugate. We use monoclonal antibody (MAB) conjugate with FITC. In the FAT, the specific intracellular aggregates of nucleocapsid are identified by their fluorescence when used with the Fluorescence Microscope. The FAT gives reliable results on fresh specimens within a few hours in 90-99% of cases. The sensitivity of FAT depends on the specimen, on the type of infecting rabies virus and on the proficiency of the diagnostic lab.

For monitoring H5N1 AI: The control for the presence of H5 was confirmed by Ha and HIH tests, with standard-style serums imported from the institutions of reference. Final confirmation of the presence of H5N1 was carried out by the Reference Laboratory in Weybridge, UK.

In addition, another rapid test was administered and all suspect cases were referred for cultivation in embryos. Furthermore ELISA and HIH tests were employed on serum samples. For the isolation of the virus itself, MDCK tissue cultures were used.

For monitoring Hantavirus: we used PCR method. This method was confirmed in Department of Virology "Aristotle" University Thessaloniki Greece

Results

In Nov 2002 a Red Fox was diagnosed as rabies positive from Qereti village in Puka district. During 2003, further two foxes were found positive from Gjorica village in the Bulqiza district (See Table 1). In May 2004, two wolves were found to be positive for rabies in the village of Helshan, Zahrishte in the Has district. In 2005 there was no rabies cases reported. In 2006 one fox was found positive for rabies, and this coincided with an outbreak in Nikoliq village in the Has district. In 2007 rabies cases were not reported.

1. This is the first study of its kind into AI in wild birds in Albania. Despite the fact that the study was prompted by the emergency situation of H5N1 surrounding the country, it provides us with some background information and paves the way for other studies to follow. 2. Confirmed H5N1 cases were identified in the villages of cuke and Peze-Helmes. 3. cuke village was near to Butrinti Lake, which hosts migratory wild birds. The outbreak in Peze-Helmes village was not in an area visited by migratory birds, and may be the focus of further studies.

According to the testing of all samples of vital organs of 76 individuals of three varieties of captured Apodemus genus, only A. Flavicolis variety has proved positive for the presence of infection (Rogozi et al, 2008). 6 individuals of this variety have proved positive for the presence of Hantaan virus, Dobrava/Belgrade (virulent stain, typical of Balkans Peninsula). The two other varieties have proved negative for the presence of any potential infections. The individuals of Apodemus flavicolis which proved positive for the presence of Hantaan virus (Dobrava/Belgrade stain) were captured in the districts of Dibra, Librazhd, Vlora and Korca

Through our study where 230 samples from ixodes ricinus were controlled, we isolated the presence of F. Tularensis in 18 cases which proves the origin of diseases in cases exposed to human beings. We have reached the following conclusions from the present study: - The zoonotic disease of tularemia originates from its presence in wildlife, thus its monitoring should be continuously carried out. - The cooperation between human health service and veterinarian service is indispensable and the control of diseases requires a combination of the disruption of ways of infection from wildlife diseases and ways of its infection from wildlife to human beings.

Carnivore species	Samples obtained in years					
	Number of samples		Positive samples			
	2002	2003	2004	2005	2006	2006, II
Fox (<i>Vulpes vulpes</i>)	26 / 1	33 / 2	17 / 0	23 / 0	21 / 1	22 / 0
Wolf (<i>Canis lupus</i>)	15 / 0	12 / 0	11 / 2	14 / 0	12 / 0	3 / 0
Wildcats (<i>Felis silvestris</i>)	2 / 0	1 / 0	2 / 0	0 / 0	1 / 0	0 / 0
Weasels (<i>Mustela nivalis</i>)	2 / 0	5 / 0	7 / 0	4 / 0	2 / 0	4 / 0
Total	45 / 1	51 / 2	37 / 2	41 / 0	35 / 1	27 / 0

Bird species	Number of samples
Plain-dwelling chickens	1188
Sea-dwelling chickens	59
Domestic ducks	26
Wild geese	22
Eagles and falcons	5
Gulls	5
Bleaks	4
Domestic and wild doves	79
Various kinds of birds	74
Parrots and gargurs	18
Storks, pelicans and swans	4

Bird species	Number of samples
Domestic chickens	1564
Drakes	45
Doves	100
Canary	28
Storks	1
Turkey	166
Wild ducks	2
Geese	17
Parrots	29
Balate	1

Conclusions

1. Wildlife diseases represent a real threat to human health and our studies carried out in years clearly demonstrate the potential risk and infection of some individuals from rabies, tularemia and hantaviruses.
2. The initial monitoring and surveillance of wildlife diseases in Albania require a more serious evaluation and support not only from the government but also from foreign donors, in order to strengthen the sector of surveillance and monitoring of wildlife diseases, and sanitation of wild carnivores from rabies in the northern region of the country. This requires the support of EU programs of air inoculation of wild carnivores
3. Establishment of a laboratory for the monitoring of wildlife diseases at the Faculty of Veterinarian Medicine (the basic components of which have been supported by a small grant from the World Bank). This would serve as a center for the finalization of various studies on wildlife.
4. Evaluation of zoonotic diseases of wildlife as a threat to human health must be considered not only at national level but also at regional and European level as Albania will be an EU member in a near future.

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