TEMPORAL-SPATIAL EVOLUTION OF RABIES IN EUROPE

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Abstract

A comprehensive view over the rabies cases in Europe between 1985-2006 show that, in point of number, these have undergone changes going as far as the extinction of the disease in the western part, whereas it prevailed and even spread gradually in the eastern part during this period.

Key words: rabies, evolution, Europe.

INTRODUCTION

The first observation refers to the fact that the infections are extensively spread that they fluctuate from year to year reaching values over 23.000 in 1982, 1983 and 1984, and 24.377 in 1989; these values decreased progressively to the minimal amount of 5,000 after this year. In 1997 and 2004, these values reached a different number up to the maximum of 11.080 in 2003 (Graph 1).

The data presented show a cyclic evolution of the disease characterised by a phase with a raised incidence, including the maximum number of infections, followed by one in a descending slope (except for a peak in 1989 which was considered to be an accident), and which continued with a period in which the values are above those of the previous stages.

The explanation for cyclic infections is connected to the existence of rabies in the fox that interferes predominately in the epidemiology of the disease.

Oral vaccination in the foxes that had started in Switzerland in 1978 and was practised by other countries had the desired effect starting from 1985 and going on until 1997.

Beginning in 1998, there was an increase in the infections due to the extended areas that comprised disease cases, especially in Eastern Europe and/or partly because of the delay in the fox vaccinations and because the quantities of bait with vaccine were not directly proportional to the fox population density.

In some European countries, where there had been a large number of rabies cases, their number has decreased in the course of the previous years; in some of them the decrease was impressive. Among these we mention Austria (up to one case in 2006), Belgium, Czech Republic, France, Switzerland and Lichtenstein (up to its extinction in 2006), Hungary (up to 3 cases in 2006), Slovakia (up to two cases in 2006).

At the end of 2006, the number of rabies cases stayed at more or less high levels in countries like Belarus, Croatia, Estonia, Latvia, Lithuania, Poland, Romania, Russia, Serbia and Montenegro, Turkey and Ukraine.

At the end of 2006, among the countries that had no cases of rabies were Belgium, Czech Republic, Denmark, Finland, France, Greece, Iceland, Ireland, Italy, Luxemburg, Macedonia, Moldavia, Norway, Portugal, Sweden, Switzerland and Lichtenstein, Holland, England.

From 1982 to 2006 the positions taken by Romania in comparison to the other European countries were: position 18 in 1982, position 15 in 1985, position 20 in 1990, position 17 in 1995, position 15 in 2000, position 8 in 2001, position 7 in 2005 and 2006.

MATERIAL AND METHODS

A comprehensive view over the rabies cases in Europe between 1985-2006 show that, in point of number, these have undergone changes going as far as the extinction of the disease in the western part, whereas it prevailed and even spread gradually in the eastern part during this period. The rabies virus spread towards east and at the end of 2006 the global aspect revealed that the cases became more compact, looking like an area crammed by them.

When given oral spring vaccination and whether they are aiming at the immunization of the adult foxes, this is advisable to be carried out in the first part of March. If young foxes are included, the distribution of bait should be done until the end of May, the main reason being the fact that most of the young foxes can not be vaccinated until they reach maturity.

Besides this strategy there is another one according to which June is the recommended month for the distribution of baits, having in view their durability extended for a week. The advantage of this procedure is represented by the decrease of the operation costs and the rate increase of the immunised animals.





RESULTS AND DISCUSSION

During the autumn campaign, the vaccination is recommended to be carried out in September – November.

The effects obtained in the disease prevention in the area where the prophylaxis is applied, depend on a series of factors such as the evaluation of the number of vaccine baits on km^2 , the distribution time and means in the field, the surface of the area in which these were distributed, the quality of the biological material, the evaluation of the vaccine effect and so on.

When applying the immune-prophylaxis in foxes, there are also some inconveniences of which we mention the identification of the biomarker. The studies on rattoons and skunks, suggest that 40% of the quantity of tetracycline is available for absorption, this condition may be contributing to the low level of biomarker detection which is worth being considered.

CONCLUSIONS

During the spring and autumn campaigns, the biomarker-vaccine was detected in 60.2% of the mature foxes and 3.5% of the young foxes receiving immune-prophylaxis. In the period studied (1995-1999) the rabies cases were more frequent in baby foxes than the adult ones. Young foxes are supposed to be the carriers (receivers) of the rabies virus.

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