Animal bites and animal rabies surveillance, Jordan, 2000-2007

R.Haddadin¹, S.Hussein¹, H.Khazally¹, A.Mhedat¹, M.Al-Rashdan¹, M.Al-Nsour¹, B.Al-Hajawi¹
1: Ministry of Health

- Introduction

Rabies is a zoonotic viral disease which infects domestic and wild animals that causes acute encephalitis. It is usually fatal. It is transmitted to other animals and humans through close contact with saliva from infected animal.

WHO estimates the annual global burden of rabies:
- Human mortality 55,000 deaths, 99% of all deaths occur in developing countries and in rural areas.
- Exposure to animal bites, mostly from dogs.
- Annually 10 million people received post exposure anti-rabies treatment.

Rabies is a real economic and social problem for countries. Accurate data are lacking in developing countries. Our study summarized rabies epidemiologic profile in animals and animals bites in Jordan, 2000-2007.

- Methods

Retrospective epidemiological analysis performed on data collected on rabies in animals by division of Vaccines and sera / MOH (the reference diagnostic laboratory for rabies in Jordan). Specimens (rabies viral antigen in brain material from animals with suspected rabies were tested by using standard protocol. Data was analyzed on geographic location, animal species, and time of specimen collection.

Retrospective analysis performed on data collected on bites from annual epidemiological reports of communicable diseases surveillance. Data was analyzed on gender, age, geographic, year and month (time) distribution of animal bites and incidence rates.

- Results from 2000 - 2007

- The incidence rate from 25.2 (2002) to 50.8 in 2007/100,000 population. More than 50% related to dogs. Distribution of cases geographically showed more than 50% for central, 45% for north and 2% for south region of the country. Seasonality was observed.
- Males were more exposed than females ratio was 3:1. Age more than 20 years old represented the largest proportion 43%. Since 1997 only one human rabies case occurred, in 2007.

- 108 animals tested positive from all 164 suspected rabies. Yearly increased from 1 in 2003 to 50 in 2007. Dogs (56,52%) represented the largest proportion. Cattle (23,21%), sheep (7,6%) and goats (6,6%) also became infected. Over time, the number of different species infected have increased. Cases of animal rabies occurred in 16 sites of 21 geographic sites Cases were concentrated geographically in the north region (58;53%).

- Conclusion

- Since 2003, a large increase of animals infected with rabies and animal bites in Jordan occurred. Many infections probably go unobserved and are never tested or reported.
- Similar to patterns observed in developing countries, most rabies infections in Jordan have been in dogs and were concentrated in the north. The majority of reported animal bites go to dogs, and concentrated in the north and central have a high population density 90%.
- No known change in surveillance procedures for animal rabies and animal bites in Jordan has occurred in this period.

- Recommendations

- Continue close surveillance of rabies in animals and animal bites in human.
- Improve the quality and completeness of reports on animals bites, and submission of samples for testing.
- Continue to provide post-exposure treatment of humans following animal bites or exposures likely to transmit rabies.
- Concentrate on health education for high endemic area especially the north.
- Create a mass immunization program against rabies for all pets, especially dogs.
- Control and prevent infections in animals before human exposure or infection can occur by involving joint actions by the Ministry of Health, Ministry of Agriculture, and Ministry of Environment, and municipalities on rabies control and prevention programs.