FIRST INTERNATIONAL CONFERENCE "RABIES IN EUROPE" KIEV, (UKRAINE), 15–18 JUNE 2005

CONCLUSIONS AND RECOMMENDATIONS

The prevention, control and eradication of Rabies in Europe

CONSIDERING THAT

The World Health Organization (WHO) recommendations and requirements and the World Organisation for Animal Health (OIE) standards are relevant tools for the control of rabies in humans and animals and should be continually updated.

During the past few years, Europe has witnessed the re-emergence of several infectious animal diseases, including rabies in some regions that have had a major impact on animal and human health.

New scientific and technological knowledge for the prevention and detection of rabies could contribute to the development of safer and more efficacious vaccines, diagnostic tests and preventive and control methods.

For ethical, ecological and economical reasons, it is no longer acceptable to control and eradicate disease outbreaks mainly by applying mass slaughter of animals.

The World Organisation for Animal Health (OIE), as well as the World Health Organization (WHO), the European Union (EU) and other national administrations and organizations have recognized the important threat posed by the presence of rabies in Europe.

The International Conference in Kiev provided information on the valuable experience the re-emergence of rabies in some parts of Europe gained in the control and elimination of rabies and other significant animal diseases and zoonoses through the use of appropriate strategies and standardized recommended diagnostic and vaccines with a strong and close partnership among veterinary and public health authorities.

The most important aim of this Conference was to bring together veterinarians, scientists, wildlife experts, clinicians and public health officials to share their experience in modern rabies control, to agree on the strategies for the prevention and control of the disease in reservoir animal species, and to examine the threat posted by classical rabies virus and the emerging bat lyssaviruses.

The Conference is also an opportunity to evaluate and improve the current OIE standards and guidelines for better control of rabies,

For this event, the OIE has acted in collaboration with the World Health Organization (WHO), the European Union (EU), the French Food Safety Agency (AFSSA), together with the Veterinary Service of Ukraine, and the participation of stakeholders and the

International Association for Biologicals (IABs). It has brought together representatives of all the key rabies control and research groups from around the world including the OIE Reference Laboratories and the WHO Collaborating Centres.

CONFERENCE ATTENDEES OF THE OIE INTERNATIONAL CONFERENCE “RABIES IN EUROPE” RECOMMEND THE FOLLOWING:

Session 1: Epidemiology

1. Rabies surveillance is still inadequate in many European countries and this deficit should be addressed by national authorities, with the technical support of international agencies (OIE/WHO) and with the support of the EU.

2. An effective surveillance system to collect epidemiological data of rabies in healthy ‘suspect’ and confirmed animals must be established in each country to confirm free status. Wild animals shot during hunting or night shooting operations are not the main relevant source for disease surveillance.

3. The surveillance should be managed with a focus on the laboratory confirmation and effective reporting of definite human and animal rabies cases and by examining ‘suspect’ sick or dead animals.

4. Epidemiological data should be collected, processed, analysed and disseminated rapidly between sectors and different administrative levels (veterinary and health ministries in each country must share data systems). This work should be undertaken in designated and well-equipped provincial, national or regional laboratories. An effective surveillance network should be able to transport specimens rapidly from the field to the diagnostic laboratory that does not present a risk for the shipment company. Each country should establish one national rabies data collection centre.

5. Reliable data reporting the epidemiology of rabies in animals across Europe is inconsistent. Additionally to OIE information systems, the *Rabies Bulletin Europe* (RBE), sponsored by WHO, is considered a pivotal source of information and decision support for rabies control. All countries should be encouraged to submit data to RBE. Support for its future existence and modernisation should continue.

6. More research programmes should be conducted concerning the epidemiology of rabies in recognised reservoir species specifically domestic dogs, foxes, raccoon dogs and bats.

7. Increased research is necessary to clarify host/virus adaptation.

8. Uncontrolled translocation of susceptible animals from rabies endemic areas should be avoided.

9. There is a need for the harmonisation of control measures between neighbouring countries.

10. The definition of the rabies status of countries should be clarified by the OIE and WHO in relation to the epidemiological situation.

Session 2: Rabies diagnosis

1. Clinical diagnosis of rabies is not reliable. A definitive diagnosis can only be made by laboratory investigations. Each country should establish one national rabies reference laboratory.

2. Routine rabies laboratory diagnosis should be undertaken using only the techniques as specified by OIE and WHO. The 5th edition of the OIE *Terrestrial Manual* and the 4th edition of the 'Laboratory Techniques in Rabies' (WHO) must be available to each national and provincial laboratory.

3. The recommended primary diagnostic test for rabies is the fluorescent antibody test (FAT).

4. Confirmatory diagnosis, where required, should be undertaken using the rabies tissue culture inoculation test (RTCIT). The mouse inoculation test (MIT) should only be used if tissue culture is not available.

5. Methods for rabies diagnosis in animals should be harmonised across Europe. The techniques should be standardised using regular interlaboratory tests in compliance with OIE standards.

6. The use of the polymerase chain reaction (PCR) and other amplification techniques is not currently recommended for the routine diagnosis of rabies. These molecular techniques, however, can be applied to epidemiological surveys and for confirmatory diagnosis in specific circumstances and under strict quality controls in national reference laboratories that are routinely working with these techniques.

7. Attempts should be made to isolate viruses for characterization of prevalent strains. The strains should be typed and compared with isolates from neighbouring countries. The data should be rapidly exchanged and the original isolates submitted to an independent laboratory for further characterisation and stored in an archive.

8. Positive samples should be shared for further characterisation.

9. Serological methods should not be used for routine rabies diagnosis. These tests are indirect and demonstrate past-exposure to virus only and are applicable to sero-prevalence surveys and vaccine control.

10. An infrastructure for training of personnel from national diagnostic laboratories and the exchange of personnel to reference laboratories should be established.

11. There is a requirement for rapid and accurate serological methods (i.e. ELISA tests) to replace currently used virus neutralisation tests (FAVN / RFFIT) for both follow-up investigations of oral vaccination campaigns and analysis of serum from vaccinated domestic carnivores in the context of international animal movements.

Session 3: Animal rabies control

1. An understanding of the epidemiological situation of rabies in each country is a pre-requisite for animal rabies control measures.

2. A long-term and consistent rabies control strategy must be prepared and revised at regular intervals. This strategy should state explicitly the necessary steps for a national rabies elimination programme in animals. This strategy should be published and copies made freely available to the general public.

3. This must include a national political willingness with the assistance of international agencies (OIE/WHO) and the EU. These agencies should demonstrate a fully co-operative and integrated approach.

4. An integrated international approach, which includes when necessary appropriate financial support for rabies control in animals should be a high priority.

5. Canine rabies can be eliminated, as has been demonstrated in specific regions using mass parenteral vaccination programmes. Stray dog destruction alone is not fully effective in rabies eradication.

6. Further research should be undertaken on the use of oral vaccines for domestic species. Under specific circumstances, oral vaccination campaigns should be also considered as complementary measures for interrupting the rabies infectious cycle in stray animals.

7. Currently, wildlife rabies control can only be effectively undertaken using oral vaccination of reservoir species. Vaccination should be the principal method of rabies control in animals. Culling reservoir species alone is not effective.

8. The selected vaccines should follow all the efficacy and safety requirements according to procedures recommended for veterinary use and according to international standards and guidelines.

9. The bait should include a biomarker to monitor bait uptake.

10. Wherever possible, rabies control in animals should be undertaken as prescribed in currently available documents by the OIE/WHO and the EU (http://europa.eu.int/comm/food/fs/sc/scah/out80_en.pdf).

11. The success of rabies control strategies must be further monitored by follow-up investigations. The biomarker detection method is the preferred option if only a single test is available in rabies negative/susceptible animals.

12. There is an urgent requirement to finance rabies research aimed at improved control.

13. Public information needs to be improved concerning the risks of rabies.

14. Awareness of rabies should be raised among health and veterinary professionals in rabies-free countries.

15. Reservoir species should be monitored in countries where a risk of re-emergence should be strengthened.

16. Research aimed at the development of new biological tools should be encouraged i.e. specific contraceptive vaccines for reservoir species.

17. There is a critical need for the establishment of an oral vaccine bank for emergency use.

18. A need exists for the development of oral vaccines/baits/delivery systems for use in all terrestrial animals.

Session 4: Human rabies prevention

1. Rabies prophylaxis in humans should be undertaken as prescribed in currently available documents by the WHO in WHO Expert Consultation on Rabies (series 931; 1st report, 2005, www.who.int).

2. As rabies remains a 'neglected' disease, an increased awareness of human infection is needed among the medical community, as demonstrated by the recent cases of rabies following organ transplantation.

3. Additional research is required to understand the pathogenesis of rabies in humans.

4. Exchange of information and cooperation between medical and veterinary authorities must be considered a priority.

5. The production of an alternative to rabies immune globulin for passive immunization (such as monoclonal antibodies) is urgently required.

6. There is a need for clear harmonised guidelines for vaccine prophylaxis for people at high risk of rabies-related virus infection.

7. Although, post-exposure prophylaxis is considered fully effective when administered properly; cross-neutralisation/protection profiles for conventional human vaccines should be assessed against all members of the lyssavirus genus.

8. Training of personnel in rabies diagnosis in humans is needed.

Session 5: Vaccinology and immunology

1. Rabies vaccines for human and animal use should meet WHO/OIE/EDQM and European Pharmacopoeia requirements for production and control of rabies vaccines.

2. Post-vaccination serological monitoring of vaccinees should be considered as an alternative to lifelong repeat vaccination.

3. The risk of sarcoma in cats following vaccination should be considered.

4. The immune response during infection and/or the response to vaccination in animals and humans should be studied in detail.

5. Attempts to correlate the minimum measurable VNA titre of 0.5 IU/ml with protective immunity should be considered.

6. The immunogenicity testing of vaccines should use appropriate challenge strains.

7. Consideration for the need of broad spectrum vaccines for animal/human use is highly required.

8. Recombinant (live vector) vaccines for parenteral vaccination of domestic animals should be considered for rabies control purposes as equivalent to inactivated vaccines.

9. Disease control authorities must pay attention to the vaccine and immunoglobulin supply chain to avoid shortages.

10. Manufacturers and regulatory bodies are recommended to follow the principle of the three R's (reduction, refinement, replacement) taking into account the outputs of the ECVAM workshop (http://ecvam.jrc.cec.eu.int).

11. Research should be undertaken to standardise antigenic mass determination in place of in vivo tests.

Session 6: Bat rabies.

1. In considering the protected status of all bats in Europe, a national bat rabies surveillance network should be established in all European countries in close collaboration with bat specialists including international bat agencies.

2. This network should be based on a passive surveillance programme (collection of sick or dead bats of all species present in the country). Active surveillance with micro-samples of blood and saliva (capture of bats, bats maintained in wildlife hospitals) is also recommended. The active capture of bats should be targeted at high risk species.

3. A database is required to register submission details and sequence data for bat lyssavirus isolates sequence and archive bat lyssavirus isolates from countries throughout Europe.

4. Epidemiological data available so far show that the destruction of an infected bat colony is ineffective and must be avoided. This strategy will disturb the balance of the metacolony and should be avoided as far as possible not to induce an unpredictable dispersion of infected animals. It is preferable to monitor the known positive colonies

(salivary excretion and serological survey with marking of sampled bats belonging to the colony), collection of all sick or dead bats.

5. Laboratory and sampling techniques for bat rabies should be harmonised throughout Europe.

6. All bat handlers should be vaccinated.

7. All negative samples should be reported.

8. All dead bats (regardless of species) should be submitted to the National Rabies Reference Laboratory for lyssavirus testing. Brain sample collection using a needle through the orbit of the eye socket can be used to cause minimal disruption to the bat skull and allow species identification. The bat can then be archived as a specimen.

9. Research studies are required to understand the dynamics, epidemiology and pathogenesis of these viruses and their distribution, hosts and incidence in European bat species.

10. Research is needed on the ability of lyssaviruses to spillover in host bat species and other relevant domestic / wildlife species.

General recommendation

To hold a Second OIE International Conference on “Rabies in Europe” in two years (2007)

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(Adopted by the OIE First International Conference on “Rabies in Europe”,
Kiev, (Ukraine), 15 –18 June 2005)