Epidemiological Alert

Human rabies transmitted by wildlife

22 December 2011

Current Situation

In the Americas, human rabies transmitted by dogs has been almost eliminated. Nevertheless, in the last years, human rabies transmitted by bats has resurfaced as a public health problem in the Americas. This virus infects domestic and wild animals, and is transmitted to people through exposure with infected saliva.

During 2011, events of human rabies transmitted by bats were reported in Ecuador and Peru and bats infected with rabies virus were detected in Argentina, Brazil, Chile, Cuba, Costa Rica and Honduras. Additionally, cases of human rabies transmitted by dogs were reported in Bolivia, Brazil, Guatemala, Haiti and Peru.

In epidemiological week (EW) 49 of this year, the Ecuador Ministry of Health reported the occurrence of an outbreak of human rabies transmitted by bats in indigenous communities from the Huasaga parish of the Taisha region in the Morona Santiago province. Between 3 November 2011 and 7 December 2011, there were 11 deaths due to rabies. The age of the deceased ranged from 5 to 30 years (median 11 years).[1]

In the light of this situation, the Pan American Health Organization/World Health Organization (PAHO/WHO) reiterates the recommendations made through the 30 August 2010 Epidemiological Alert[2], concerning the need to develop strategies to ensure access to pre-exposure prophylaxis for people at risk of bites from bats and other wildlife carriers of rabies (especially people who live in or visit tropical forests) prior to the identification of risk areas (the identification includes having laboratory evidence of the rabies virus circulating in bats).

Rabies (CIE-10 A82)

Rabies is a zoonotic disease (a disease that is transmitted to humans from animals) that is caused by the rabies virus, which belongs to the Rhabdoviridae family, within the Lyssavirus genre and the species rabies virus (RABV).

The incubation period is variable, but it usually ranges from 3 to 8 weeks. The first symptoms of rabies are flu-like, including fever, headache and fatigue, and then progress to involve the respiratory, gastrointestinal and/or central nervous systems.

In the critical stage, signs of hyperactivity (furious rabies) or paralysis (dumb rabies). Both forms eventually progresses to complete paralysis followed by coma and death in all cases, usually from respiratory failure. Without intensive care, death occurs in the first seven days of illness.

Member States are encouraged to continue to strengthen surveillance activities and investigate cases of people bitten by animals in addition to monitoring the viral circulation. Countries should continue with the intersectorial efforts for prevention and control in order to reduce the risk of human cases emerging.

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[1] To control this situation, the Government of Ecuador has declared a state of health exception to the affected area, to facilitate and strengthen the implementation of a series of activities to ensure appropriate care of people, immunize the population at risk, immunize domestic animals existing in the area, control the bat population and mitigate the environmental impact, all with a multicultural and risk approach.

[2] http://new.paho.org/hq/dmdocuments/2010/epi_alerts_2010_30_August_Rabies_Outbreaks.pdf

Laboratorial diagnosis

Laboratory tests must be used to obtain a conclusive diagnosis for rabies. Biosecurity is an important measure when working with *Lyssavirus* given the high case fatality rate for rabies

A level 2 biosecurity laboratory has the safe and appropriate practices for diagnosing rabies but the laboratory personnel must be vaccinated with appropriate levels of neutralizing antibodies. To prevent risk exposure, samples for analysis must be taken in accordance with national and international norms. Samples must be refrigerated following the Guidance on regulations for the Transport of Infectious Substances.[3]

The diagnostic is confirmed with the fluorescent antibody technique, which is a rapid and sensible method to diagnose rabies. The test is based on a microscopic examination under ultraviolet light of sections of tissue that have been treated with anti-rabies serum or conjugated globulins with fluorescent isothiocyanate. Samples of brainstem, thalamus, hypothalamus, cerebellum and hippocampus tissues are recommended to augment the sensitivity of tests.

Another test for confirmation is virus isolation in mice or cell cultures. It is necessary to use an international reference laboratory for antigenic and genetic characterization of isolates.

Recommendations

Faced with the re-emergence of wildlife rabies PAHO/WHO reminds Member States, in particular those in the Amazon Region with a history of wildlife rabies, of the following recommendations:

1. Ensure the availability of immunobiological (vaccine and serum) for human use as recommended by the WHO, as well as supplies and logistics for use in hazardous areas.

2. Strengthen monitoring of vampire bat attacks while prioritizing risk areas and assess the need for population control of vampire bats in the area, according to the expert consultation on rabies transmitted by vampire bats in the Amazon region (Reference Document No. 9).

3. Keep in mind that according to WHO recommendations (Reference Document No. 8) and contained in the Report of the 10th REDIPRA (Reference Document No. 6):

    a. All persons who have been attacked by bats in the last year should receive rabies prophylaxis scheme of modern post-exposure vaccine recommended by WHO and immunoglobulins when necessary.

    b. All persons at risk of exposure to bat bites due to their customs and living conditions should receive a prophylactic regimen of pre-exposure.

It is important to note, that age groups (particularly infants and elderly), pregnancy and the presence of other diseases are not contraindications for post exposure prophylaxis.

[3] http://www.who.int/csr/resources/publications/biosafety/WHO_HSE_EPR_2008_10.pdf

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