Epidemiological Alert:
Rabies

(30 August 2010)

In the epidemiological week (EW) 30 of this year, Peru's Ministry of Health reported the death of a confirmed case of human rabies transmitted by a hematophagous bat. This case occurred in the native community of Urakusa, district of Nieva, province of Condorcanqui, department of Amazonas[1]. On EW 33 a new death was reported, in the native community of Suhapangkis, located in the same province.

The first case corresponds to an unvaccinated 4 year-old boy, who was bitten in the head on 3 June, 2010. The second case is an unvaccinated 5-years old boy who rejects vaccine for cultural believes.

Currently, a team is working in the field, where an active search and vaccination of people exposed to bat bites is underway.

This district has rabies outbreaks record in the native communities of Cachiaco (2009), Kigkis (2009-2010), and Sumpa (2010).

On the other hand, in EW 30, Colombia reported two cases of human rabies: the first, in the municipality of Piedecuesta, and the second, in Lebrija – both in the department of Santander. The department did not have a record of human rabies cases until 2008 and 2009, when one case was notified in each of these years respectively. The variant, which originated these cases, is currently under investigation.

The reported cases do not have any epidemiological links. The case in the municipality of Piedecuesta is linked to a bat and located in the northern part of the same department, while the case in Enciso is located in the southeastern part of the department - 250 km from the capital - and is linked to a cat.

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. This virus infects domestic and wild animals, and is transmitted to people through close contact with infected saliva (through bites or scratches).

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. These symptoms eventually progress to complete paralysis, followed by coma and death in all cases.

Once symptoms appear, there is no effective treatment, and the disease is fatal most of the time; hence the importance of post-exposure prophylaxis.

[1] The native community of Urakusa is located on the right shore of the Marañon River and has a population of approximately 828 people, who belong to the Aguajun ethnicity.

The Pan American Health Organization emphatically recommends adopting strategies to ensure the access to pre-exposure prophylaxis for people exposed to bites of vampire bats and other wildlife transmitters of rabies, especially to the ones that live or visit the tropical rainforests of the Americas.

Countries are encouraged to continue to strengthen surveillance activities and cases investigation of people bitten by animal as well in monitoring the viral circulation. Countries should continue with the intersectorial efforts for prevention and control in order to reduce the risk of emergence of human cases. For the areas of human rabies transmitted by dogs it is very important to maintain high coverage of canine vaccination.

Introduction

Rabies, a public health problem in Asia and Africa, is a disease that can be prevented through vaccination. Registered data show that around 55,000 deaths occur annually in these continents due to rabies, the majority being children under 15 years of age. The main mode of transmission is through bites, although transmission might also occur through other channels.

In the Americas, human rabies transmitted by dogs has been almost eliminated, although the canine population is still at risk in various countries. Rabies persists mostly in wild animals. In the last years, rabies in bats has resurfaced as a public health problem in the Americas. In 2004 and for the first time, more people died as a result of exposure to wild animals, especially bats, than to dogs in South America. The occurrence of human rabies outbreaks transmitted by hematophagous bats is cyclical, thus, it is important to maintain an active surveillance and act preemptively in areas of high risk.

Human rabies cases due to exposure to foxes, raccoons, skunks, jackals, and wild wolves, are very rare. Also, although rare, livestock, horses and deer can also become infected and transmit the virus to other animals or to humans.

Laboratorial Diagnosis

The conclusive diagnosis for rabies must be confirmed through laboratory tests. Given the high lethality rates for rabies, biosecurity is an important measure when working with *Lyssavirus*.

A level 2 biosecurity laboratory provides safe and adequate practices for rabies diagnostics, but its personnel must be vaccinated with appropriate levels of neutralizing antibodies. Samples for analysis must be taken according to national and international norms, in order to avoid exposure to risks. Samples must be refrigerated according to the Transport of Infectious Substances manual.

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.

Recommendations

There are safe and efficient vaccines to prevent rabies in animals and humans before and after suspect exposures. Vaccination of domestic animals (mainly dogs) and wild animals (foxes and raccoons, for instance) has reduced the disease's frequency in various developed and developing countries.

Human rabies prevention must be a community effort where veterinary as well as public health services participate. Rabies elimination activities, focused on the massive vaccination of dogs, are economically justified by future savings in post-exposure prophylactic treatments in people.

Post-Exposure Treatment

Wound cleansing and immunizations, done as soon as possible after suspect contact with an animal and following WHO recommendations, can prevent the onset of rabies in virtually 100% of exposures. Recommended treatment to prevent rabies depends on the category of the contact:

- Category I: touching or feeding suspect animals, but skin is intact.
- Category II: minor scratches without bleeding from contact, or licks on broken skin.
- Category III: one or more bites, scratches, licks on broken skin, or other contact that breaks the skin; or exposure to bats.

Post-exposure prophylactic treatment to prevent rabies includes cleaning and disinfecting a wound, or point of contact, and then administering anti-rabies immunizations as soon as possible. Anti-rabies vaccine is given for Category II and III exposures. Anti-rabies immunoglobin, or antibody, should be given for Category III contact, or to people with weaker immune systems.

The pregnancy, the extreme age of life (infants and elderly) and the presence of other diseases, are not contraindications for post exposure prophylaxis.

In case of human exposure to suspect animals, post-exposure treatment should start right away and only be stopped if the animal is a dog or cat and remains healthy after 10 days. Animals that are sacrificed or have died should be tested for the virus, with results sent to responsible veterinary services and public health officials so that the situation in the area is well documented.

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