

## CLINICAL FEATURES OF RABIES

Rabies is caused by members of the RNA virus genus *Lyssavirus*, family *Rhabdoviridae*. Rabies infection characteristically produces a rapidly progressive encephalomyelitis (inflammation of the brain and spinal cord), and should be considered as a possible cause of any such illness in humans or other animals.

### Rabies in Humans

The incubation period in humans is typically between 20 and 90 days, although incubation periods as short as 4 days and longer than 6 years have been documented. This variation is probably related to the site of inoculation, the severity of the wound, and the amount of virus introduced. It is thought that the closer the inoculation is to well-innervated areas and to the brain, the more severe the wound, and the more virus introduced, the shorter the incubation period.

Early symptoms of rabies are non-specific, but often include pain or paresthesia at the inoculation site. The disease progresses to an acute neurologic phase characterized by delirium, convulsions, muscle weakness, and paralysis. Spasms of the swallowing muscles can lead to a fear of water (hydrophobia), and may be precipitated by blowing on the patient's face (aerophobia). *Not all persons exposed to rabies virus develop disease*, but if symptoms do occur, rabies is almost invariably fatal -- usually within 10 days. There are case reports of three people who survived the disease in the 1970s. All three had received some pre- or post-exposure treatment with the duck embryo vaccine or suckling mouse brain vaccine (vaccines that are no longer used in this country). A fourth documented case was reported in 1992 in a boy who received partial postexposure treatment.

**Diagnosing Rabies in Humans:** Because rabies is often not considered during the evaluation of patients with acute encephalitides, human rabies cases are usually identified after death. Antemortem diagnosis is possible, however, by analyzing the saliva, cerebrospinal fluid, skin (from the posterior neck), and serum of a symptomatic patient. Brain biopsy material can also be examined for rabies. Providers wishing to submit specimens for testing should contact the Acute Communicable Disease Control at (213) 240-7941.

### Rabies in Other Animals

The clinical features of rabies in other animals are highly variable and resemble a number of toxic and infectious illnesses of the central nervous system. In dogs, a common viral disease known as canine distemper often produces seizures and neurological disease resembling rabies. Rabid animals can appear aggressive, known as "furious rabies" or lethargic, known as "dumb rabies". Aggressive rabies is common in cats but seldom seen in bats. As the disease progresses

over a matter of days, the rabid animal typically develops difficulty with coordination. This is usually followed by generalized paralysis and death. Rabies can not be diagnosed reliably by an evaluation of behavior or clinical signs alone. Laboratory testing of the brain is essential.

All cases of suspected rabies in animals should be reported immediately to Veterinary Public Health at (323) 730-3723.