

## Rabies update and alert

A 22-year-old male from Msogwaba in Mpumalanga Province presented to a local hospital during October 2013 with delusions, hiccoughs, drooling, and inability to swallow. The patient was constantly scratching a healed wound on his left leg. He was initially admitted to the psychiatric ward, but following progression of his clinical presentation with the onset of seizures he was admitted to an intensive care unit. Initially, meningitis was the presumptive diagnosis, but laboratory investigations were negative. The patient's family was not able to verify a recent dog/animal exposure, or whether the patient had previously presented to a healthcare facility and received rabies post-exposure prophylaxis (PEP).

A number of specimens including saliva, cerebrospinal fluid and blood were submitted to the NICD for rabies investigation. The saliva and cerebrospinal fluid specimens tested negative for rabies by reverse transcription PCR. Of note is that anti-rabies virus IgG and IgM antibodies were detected in both the blood and cerebrospinal fluid specimens. Interpretation of this result is problematic since it has not been possible to verify if the patient had previously received rabies PEP; however, the detection of anti-rabies antibodies in the cerebrospinal fluid is suggestive of rabies disease. The gold standard for the laboratory diagnosis of rabies remains the detection of rabies virus antigen in a brain specimen. Regrettably, the patient's family denied post-mortem sampling and therefore no further specimens were available for investigation.

The patient's clinical presentation, together with the fatal outcome and the serological findings in the cerebrospinal fluid support a diagnosis of rabies. Rabies is an endemic disease in Mpumalanga Province with an average of 100 dog cases reported annually throughout the province. The area surrounding Mbombela currently represents one of the most densely-infected rabies areas in the country. Since 2008 when rabies re-emerged in domestic dogs in Mpumalanga Province, a total of

six human rabies cases (not including the case discussed here) has been confirmed. All but one of these cases had a history of exposure to domestic dogs.

For 2013 to date, a total of seven human rabies cases has been confirmed (not including the case discussed here), originating from Mpumalanga (n=1), KwaZulu-Natal (n=1), Limpopo (n=3) and Free State (n=2) provinces.

### **Alert: exposure to rabid cat in Sedibeng District, Gauteng Province**

On 20 November 2013, rabies was confirmed in a domestic cat by fluorescent antibody testing (FAT) on a post-mortem brain sample submitted to the Agriculture Research Council - Onderstepoort Veterinary Institute. The cat was a previously healthy animal that resided in a church property situated in agricultural holdings in the Rosashof area west of Vanderbijlpark city centre (Emfuleni Municipality, south of Johannesburg), Gauteng Province. The animal was euthanased on 19 November 2013 after displaying symptoms compatible with clinical rabies, including aggression and three unprovoked human attacks. The source of the cat's rabies infection is not clear. However, there is a possibility of exposure to potential rabid wild animals as there have been two confirmed cases of rabies in meercats in the Vanderbijlpark area during 2013 (in March and August), and history of the cat's rabies vaccination status is not known. Further typing of the virus may reveal whether the virus is of the mongoose or canid biotype, which would suggest the likely source and potential for further cases in the area. Rabies post-exposure prophylaxis (PEP), including rabies vaccine and rabies immunoglobulin (RIG) was administered to three humans who were bitten or had contact with the cat.

Healthcare professionals should be aware of the possibility of rabies when dealing with any animal-exposures in the area. Rabies disease is universally

fatal, but may be prevented by PEP which is almost 100% effective if given timeously and correctly.

Dog/cat bites are common in Gauteng Province and generally follow provoked attacks, most commonly related to dogs 'protecting their territories'. Rabies PEP biologicals need to be used judiciously and the decision whether to give PEP must be based on a thorough assessment of the risk of rabies transmission. A provoked attack from an otherwise healthy animal in most urban settings in Gauteng Province is highly unlikely to carry a risk of rabies.

Relevant information for assessing the risk of exposure includes the species of the animal (there is no risk from small rodents), whether it was an unprovoked attack, whether the animal was visibly ill or exhibiting unusual behaviour (e.g. aggression, salivation, weak limbs, or snapping at imaginary objects), and the category of exposure. While dogs are the most common source of rabies for humans, other animals that need to be considered as possible rabies sources in this area include cats,

livestock (which typically appear to choke and appear to have a 'bone in the throat') and mongoose. If the animal is well with no symptoms 10 or more days after the exposure, rabies is not likely and no PEP is needed. There are no laboratory tests that can confirm whether rabies has been transmitted and a decision to administer PEP is made on the risk assessment as detailed above. Rabies PEP is a life-saving intervention for an otherwise untreatable and fatal disease.

Health professionals and members of the public can find more information on rabies available on the NICD website: [www.nicd.ac.za](http://www.nicd.ac.za). The national rabies guideline document may also be downloaded from the NICD website: <http://www.nicd.ac.za/?page=guidelines&id=73>.

**Source:** Centre for Emerging and Zoonotic Diseases and Division of Public Health Surveillance and Response, NICD-NHLS; Gauteng Veterinary Services