NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES
Division in the National Health Laboratory Service

Communicable Diseases Communiqué

APRIL 2013, Vol. 12(4)

CONTENTS

Rabies

Two cases of human rabies were laboratory confirmed during the month of March 2013, one each from Mpumalanga and KwaZulu-Natal provinces. These are the first reports of human rabies cases in South Africa for 2013 to date. The first case was a 65-year-old man from Mvangatini, Kwabokeni (located 20 km from Nelspruit in Mpumalanga Province). He was bitten by a stray dog on his right index finger on 18 March 2013, but did not seek treatment after the incident. He presented to a healthcare facility ten days after complaining of headache and pain in the right hand, and received rabies vaccination at Themba Hospital on 28 March 2013. He returned two days later with worsening symptoms and was admitted. He was noted to have aero- and hydrophobia, hypersalivation, confusion, and anxiety. On admission, saliva and cerebrospinal fluid samples were collected for rabies testing, but were negative by rabies RT-PCR. The patient died the following day (31 March 2013). A post-mortem brain specimen tested positive for the presence of rabies virus antigen with the fluorescent antibody test.

The second case was a 6-year-old female patient from Malukazi, a settlement located on the southern border of Umlazi, 25 km south-west of Durban on the east coast of KwaZulu-Natal Province. The patient was bitten by a stray dog on 3 March 2013 and sustained multiple category 3 bites to her right hand, buttocks and left wrist. She was taken to Prince Mshiyeni Memorial Hospital (PMMH) in Umlazi for treatment the same day. Post-exposure prophylaxis in the form of rabies vaccine was administered to the patient at the hospital, and she was referred to a local clinic to complete the vaccination schedule. Rabies vaccine doses were administered on days 3, 7 and 14 as per the national guidelines. However, there is no record that rabies immunoglobulin was given at the initial visit to the hospital, despite the presence of category 3 wounds. On 22 March 2013 (19 days after the attack), the child presented to a local clinic with fever, cough and vomiting, and then developed pain in her left arm and leg. On 27 March, she was admitted to PMMH, where she was noted to be confused and anxious. The child died 9 days later. Ante-mortem saliva samples tested negative by RT-PCR, but a post-mortem brain specimen tested positive for rabies virus antigen.

The fluorescent antibody test performed on post-mortem brain specimens remains the gold standard for confirming or excluding rabies virus infection - the test is robust, with high sensitivity and specificity for detecting rabies virus infection in animals and humans. Ante-mortem diagnosis of human rabies cases is problematic, and submission of multiple specimens is usually required to confirm or exclude a case. For comprehensive ante-mortem investigation, submission of at least three repeat saliva specimens (note: saliva, not sputum; specimens collected at different times, preferably on different days) cerebrospinal fluid and nuchal biopsies are required. The value of serologic testing for rabies confirmation is limited in most cases taking into account that seroconversion is usually delayed and often suppressed in rabies cases. In addition, patients have commonly received incomplete rabies post-exposure prophylaxis, or have received rabies vaccine and/or immunoglobulin on admission to a healthcare facility, which complicates the interpretation of serology. The administration of rabies vaccine and/or immunoglobulin when the patient is already presenting with clinical disease has been shown to

have no effect on the course of disease or outcome.

The fatal consequences of delayed or incorrect administration of rabies post-exposure prophylaxis in line with national guidelines are evident in both these cases. Rabies is entirely preventable with timely and appropriate application of rabies vaccine and immunoglobulin. Further information regarding rabies in South Africa is available in the national guidelines document (http://nicd.ac.za/assets/files/Rabies-Guide-2010-small.pdf).

Source: Centre for Emerging and Zoonotic Diseases, and Division of Public Health Surveillance and Response, NICD-NHLS.