Communicable Diseases Communiqué

Volume 9, No. 8 Additional Issue

August 2010

Rift Valley fever: the outbreak continues

An additional three laboratory-confirmed RVF cases have been identified in recent weeks. The patients are farm workers from the Heidelberg area, Western Cape Province, who experienced onset of a relatively mild febrile illness on 18 August 2010 a few days after slaughtering cattle. Viral detection by PCR was demonstrated on two of the three cases, implying recent infection and ongoing transmission.

This brings the total laboratory-confirmed human RVF infections (as of 27 August 2010) to 232 cases, of which 26 have been fatal. The majority of infections occurred among men (86%, 199/232) working within occupations where direct contact with animals frequently occurs (82%, 177/217). Furthermore, 94% (190/202) of cases report a history of direct contact with RVF-infected ruminants prior to onset of their symptoms; while human infection through mosquito-vectors (3.5%, 7/202) and/or unpasteurised milk (2.5%, 5/202) were observed less frequently.

Despite the observed decrease in RVF virus transmission through the colder winter months (Figure), there is much concern over a possible re-emergence of the outbreak in previously affected areas accompanying the expected seasonal increase in temperature and rainfall. There remains a need for continued vigilance amongst all healthcare workers; clinicians should continue to suspect RVF in patients meeting the case definition and submit specimens to the NICD for laboratory testing.

Additionally, clinicians should bear in mind that certain RVF-complications often manifest a few weeks after the acute infection; meningoencephalitis may present up to 4 weeks later, and ocular complications (notably retinitis) may present weeks to months later. In such cases, the acute infection may have been extremely mild and not have been diagnosed initially.

Source: SA-FELTP, Special Pathogens and Outbreak Response Units, NICD; Departments of Health and Agriculture, Forestry and Fisheries

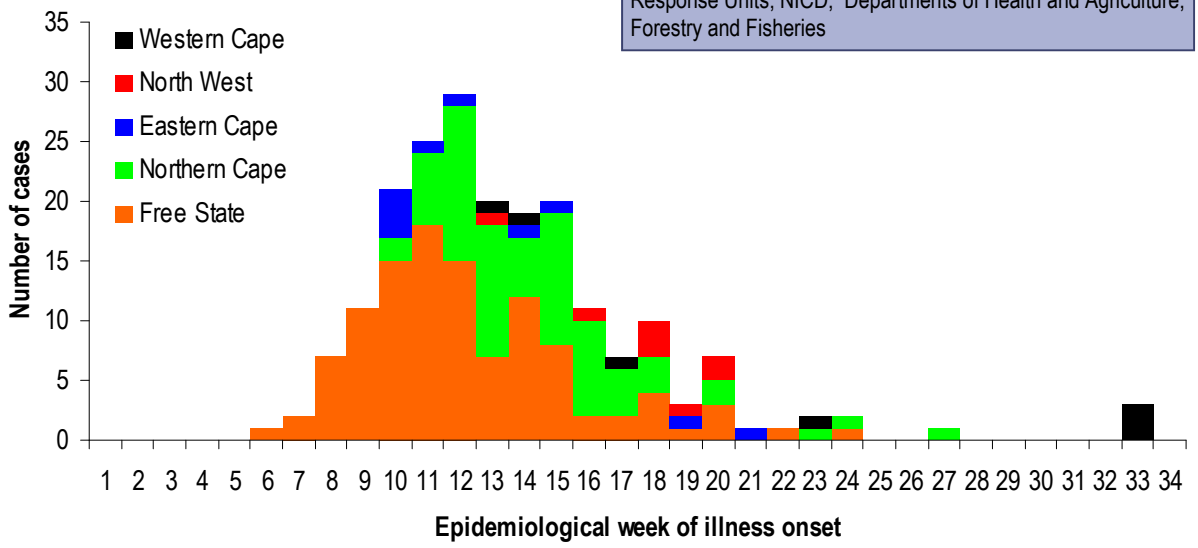

Figure: Epidemic curve illustrating the number of laboratory-confirmed RVF cases by epidemiological week of illness onset and province, South Africa, updated 27 August 2010 (N=232, of which date of onset is available for 88% (n=203), and an additional 3% (n=7) of cases were asymptomatic).

Rabies alert

Several cases of rabies have been confirmed in domestic dogs in the greater Johannesburg area in the past few weeks. The affected areas include Sophia Town, Witpoortjie, Randfontein, Kibler Park and Roodepoort. These animals were kept pets and the source of exposure of these animals is still under investigation. Cases of rabid dogs were also confirmed in May 2010 in Witpoortjie (Roodepoort), and in Linden in 2009.

Rabies is endemic in South Africa with KwaZulu-Natal, Eastern Cape, Mpumalanga and Limpopo provinces being the focal points of dog rabies at present. Rabies is also reported in wildlife; predominantly mongoose in the central plateau regions of the country, black-backed jackal in the northern regions, and bat-eared fox in the Western Cape. The public should report cases of suspected rabies in dogs or other animals to the State Veterinarian or their local Veterinarian. Common features of rabies in domestic animals include: altered behavioural patterns (including unprovoked aggression), hypersalivation, paralysis, fixed stare, seizures, difficulty swallowing and hydrophobia. Rabies vaccination of domestic pets is compulsory by law in South Africa. Pets should be vaccinated at the age of three months and again at 12 months, and receive boosters annually or every 3 years thereafter (depending on the rabies vaccine used). The Department of Agriculture, Forestry and Fisheries are responding to these reported cases through ring vaccination of animals in the affected areas.

Rabies post-exposure prophylaxis should be considered for all exposures (bites, scratches, nicks, licks on broken skin and mucosa) to suspected or confirmed rabid animals. Infection with the rabies virus requires breaches of the mucosa or skin, thus petting or being in the presence of a rabid animal is not considered to be an exposure.

A risk assessment should be conducted for each animal exposure case, and should include questions about the animal involved (i.e. a stray or a kept pet), vaccination records of the animal, the health and behaviour of the animal and whether the attack was provoked or not. Animal exposures are classified into 3 risk groups, with risk group 1 constituting negligible risk (i.e. petting or licking of intact skin), group 2 low- to medium-risk (i.e. wounds without bleeding) and group 3 high risk (wounds that draw blood, licking of broken skin or mucosa) exposures. All cases considered to be at risk of rabies exposure should receive prompt wound care including copious washing of the wound with soap and water, the application of disinfectants (iodine-based), and administration of antibiotics and tetanus toxoid. Risk group 2 exposures require a series of five doses of rabies vaccine on days 0, 3, 7, 14 and 28. Risk group 3 exposures should receive the same series of rabies vaccine as for risk group 2, as well as human rabies immunoglobulin (infiltrated into the wound as far as possible, with the remainder administered intramuscularly in the deltoid muscle). The recommended guidelines for rabies post-exposure prophylaxis are provided in the annexure.

It is noteworthy that few cases are reported and laboratory-confirmed, and these statistics do not reflect the true burden of the disease. Rabies is not always easily clinically diagnosed, with two forms of presentation: the encephalitic ('furious') and paralytic ('dumb') forms. The encephalitic form often presents with hyperactivity, hallucinations and altered behaviour with periods of lucidity, as well as the classic hydrophobia and aerophobia. The paralytic form initially resembles Guillain-Barré syndrome with an ascending paralysis or a symmetric quadriparesis and normal sensorium, followed by confusion and ultimately coma.

The following tests are available for ante-mortem rabies confirmation in human patients: RT-PCR on saliva, cerebrospinal fluid and skin biopsies (dermatological punch-biopsy collected from the nape of the neck to include hair follicles); histology of skin biopsies is also informative. Serology is most often not helpful, as patients only seroconvert late during the illness or possibly not at all. The fluorescent antibody test performed on post-mortem brain smears is the gold standard for rabies diagnosis; however, brain specimens are often not available for testing due to lack of consent. Skin biopsies may also be collected post-mortem and tested by RT-PCR and histology in the absence of brain

Source: Special Pathogens and Outbreak Response Units, NICD; Gauteng Department of Agriculture

This communiqué is published by the National Institute for Communicable Diseases (NICD), a division of the National Health Laboratory Service (NHLS), on a monthly basis for the purpose of providing up-to-date information on communicable diseases in South Africa. Much of the information is therefore preliminary and should not be cited or utilised for publication. Questions and comments may be addressed to: The Outbreak Response Unit: outbreak@nicd.ac.za; Private Bag X4, Sandringham, 2131, South Africa

PREVENTION OF RABIES IN HUMANS

HUMAN DISEASE IS FATAL BUT IS PREVENTABLE BY POST EXPOSURE TREATMENT

ALL ANIMAL BITES SHOULD BE MANAGED AS A POTENTIAL RABIES RISK

HIGH RISK ATTACKS

- Stray animals
- Animal with abnormal behaviour - e.g. aggressive animal, wild animals may appear tame
- Unprovoked animal attack
- Animal that cannot be traced after the attack
- Category 2 and 3 exposures see below

NOTE

- All animal bites are notifiable
- Vaccination history of animal may be unreliable
- There is NO blood test to confirm or exclude rabies transmission from animal to human
- Do not delay post exposure treatment pending confirmation of rabies in animal
- Post exposure treatment is most effective if given immediately after the exposure
- Do not withhold post exposure treatment if there is a delay in the patient presenting to the health facility

MANAGEMENT OF PATIENT EXPOSED TO POTENTIALLY RABID ANIMAL

GENERAL WOUND MANAGEMENT IS CRITICAL IN ALL PATIENTS:

- Flush well with soap and water or water alone for 5 minutes then apply disinfectant e.g. 70% alcohol or iodine solution
- Avoid suturing
- Give antibiotics e.g. amoxycillin clavulanate
- Give tetanus booster

FURTHER SPECIFIC MANAGEMENT DEPENDS ON CATEGORY OF RABIES EXPOSURE:

- **Vaccine course in category 2 and 3 exposures***
- **Addition of rabies immunoglobulin in category 3 exposures is critical****

CATEGORIES OF RABIES EXPOSURE

Risk Category	Type of Exposure	Action
1	• Touching or feeding animal • Lick of intact skin	• No action if history is reliable • If history is not reliable treat as category 2
2	• Nibbling of uncovered skin • Superficial scratch without bleeding	• Manage the wound • Give full course rabies vaccine* • Do not give rabies immunoglobulin
3	• Bites or scratches that penetrate skin and draw blood • Lick of mucous membranes • Lick of broken skin	• Manage the wound • Give full course rabies vaccine* • **Give rabies immunoglobulin****

Rabies vaccine*

- Indication: CATEGORY 2 AND 3 BITES
- Course: day 0, 3, 7, 14, 28. Day 0 = day of first vaccination
- IMI deltoid muscle in adults, anterolateral thigh in children, (NEVER INTO GLUTEUS MAXIMUS)
- Dose: 1 amp per dose for adults and children
- Vaccine induces immune response in 7-10 days

Rabies immunoglobulin (RIG)** (300 IU in 2ml ampoule)

- Indication: CATEGORY 3 BITES
- Dose: 20 IU/kg infiltrated around wound, and remainder into deltoid in opposite arm to vaccine (NEVER INTO GLUTEUS MAXIMUS)
- If multiple wounds, dilute RIG in an equal volume of saline
- Give RIG immediately after vaccine administration
- RIG CAN BE GIVEN UP TO 7 DAYS AFTER 1st DOSE OF RABIES VACCINE
- Omit RIG if past vaccination can be confirmed
- Administration of rabies immunoglobulin is critical in category 3 bites

NICD Hotline for Clinical Advice: 082 883 9920

Inform state veterinarian of incident

Adapted from Rabies: Guide for medical, veterinary and allied professions, Department of Agriculture

health
Department:
Health
REPUBLIC OF SOUTH AFRICA

NATIONAL HEALTH LABORATORY SERVICE

THE BIOVAC INSTITUTE
The science of protecting life

NICD

sanofi pasteur
The vaccines business of sanofi-aventis Group