14 August 2013

CVO bulletin to NSW veterinarians

Submitting samples for Hendra virus exclusion

Notification re samples for non routine testing e.g. weekends and public holidays

It is essential that Biosecurity NSW is notified when samples are being submitted in the expectation that they will be **tested outside business hours**, e.g. weekend, public holiday or after hours. Please call:

- during business hours, the State Veterinary Diagnostic Laboratory (SVDL) on 02 4640 6325 or
- after hours the EAD Hotline on 1800 675 888.

After hours testing requires specialist laboratory staff to be recalled to duty and this will only be approved where a risk assessment supports urgent testing.

Completion of laboratory submission forms and sample presentation

Please make sure the laboratory submission form is completed in full. Include your full name and contact details (including mobile phone), the name of your practice and the full details of animal owner/manager (name, phone, address and preferably Property Identification Code). This information is vital for communicating test results or seeking further information e.g. to assess priority of testing.

Ensure that the exterior of sample tubes is clean and ALL tubes are clearly labeled. Samples must be in leak proof primary containers and packed in secure unbreakable secondary containers. The specimen advice form must be packed separately in a sealed plastic bag and placed on the top of the contents. A note “Possible Hendra” must be placed inside the package where it is clearly visible once the package has been opened.

Hendra virus in a NSW dog

Hendra virus infection was confirmed in a dog on a property at Macksville on 19 July 2013. Samples were collected from the infected dog during routine monitoring 13 days after the detection of Hendra virus in a horse on the same property. The dog had been seen in the paddock where the infected horse was euthanased and it is thought to be likely that it had contact either with the sick horse or with body fluids from the carcass.

Clinical presentation

The dog had been closely monitored since the property was quarantined. It appeared normal although it was noted to have yelped once or twice when it was sampled (day 13). The absence of significant clinical signs is consistent with experimental infection trials conducted in dogs at the Australian Animal Health Laboratory. The dog was euthanased on day 15 after infection was first detected in the horse and the owners agreed to a post mortem examination.

Virology investigations

Real time PCR was used to detect Hendra viral RNA in both the EDTA treated whole blood sample and serum from clotted blood from the dog collected on day 13. The levels of RNA in the EDTA treated blood were moderately low and about 10 fold lower in the serum. No virus was detected in oral and pharyngeal swabs. Testing of another set of samples when the dog was euthanased 2 days later showed that RNA levels had declined further, with very low levels in EDTA blood and not detected in serum. Urine and swabs from oral cavity, pharynx, vagina, and rectum each gave negative PCR results. Testing of a tracheal swab collected at post mortem examination also gave negative results. Very low levels of RNA (similar to those in the blood) were detected in a wide range of organs. However, higher levels of viral RNA, perhaps consistent with virus replication, were detected in kidney, liver, spleen, spinal cord and some lymph nodes. Serology undertaken on the samples collected on day 13 showed the presence of very low levels of antibody (by both ELISA and VNT) and on day 15 antibody levels were markedly higher.

While no definitive judgment can be made, it is likely that the levels of infectious virus in the blood at this stage of infection were very low, especially in conjunction with rapidly rising antibody levels. Investigations are continuing to improve our understanding of the level of risk that infected dogs present to humans.

An oral swab collected from the dog on 6 July 2013 was also PCR negative.

Pathology results

Gross pathology included dark, enlarged tracheobronchial and bronchial lymph nodes, and heavy dark fluid filled lungs with froth in the trachea. Histopathology showed a systemic vasculitis in many tissues with variations in severity and distribution. Kidney, liver, tracheobronchial and bronchial lymph nodes and brain were most affected.

Hendra virus sampling in dogs

At present there are no recognised clinical signs of Hendra virus infection in dogs. However, if Hendra virus infection is suspected, both EDTA treated and clotted blood (for serum) should be collected. If possible, pharyngeal and nasal swabs should be collected in viral transport medium and kept chilled.

Further information

The DPI website "Hendra virus- Information for vets" at http://www.dpi.nsw.gov.au/agriculture/livestock/horses/health/general/hendra-virus/vets contains biosecurity advice and a wide range of useful links including:

- Queensland web material
- Sampling advice in the laboratory manual
- The laboratory submissions form
- The packaging and transport sections of the laboratory manual
- Human health contacts (or phone NSW Health on 1300 066 055)
- Work Health and Safety Responsibilities (or phone Workcover Authority of NSW 131050).

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