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Emerging Viral Diseases

Sunshine virus in Snakes

Sunshine virus is a novel paramyxovirus (PMV) distantly related to the genus Ferlavirus and named after the origin of the first isolates – the Sunshine Coast of Queensland. Previously all known paramyxoviruses utilising squamate hosts (snakes and lizards) were clustered within the genus Ferlavirus; this new virus has been molecularly characterised and shown to lie outside this and other Paramyxovirus genera (Hyndman, 2012b).

To date only pythons have been diagnosed with Sunshine virus; however this host range is likely to expand as further testing is performed. There appears to be no age or sex-linked predisposition to infection (Hyndman, 2012b).

Clinical signs appear to be related primarily to the central nervous and respiratory systems and include: Loss or reduction of righting response and torticollis, spasticity, mouth gaping, nasal discharge and non-specific signs such as anorexia and weight loss. There is no treatment available for this disease.

The initial outbreak in Queensland was associated with significant morbidity and some mortalities. There is no information available at this stage regarding incubation period or whether a carrier state exists.

Sunshine virus can be detected using a PCR test; performed on a plain dry oral/cloacal swab or fresh samples of brain, lung, liver and kidney.

Whole brain/spinal cord tissue is required for Histopathology diagnosis.

Ranavirus

Ranavirus is a DNA virus and is one of five genera within the Iridoviridae which infects Amphibians, Reptiles and is the only one of three that infect Teleost fish (Ray finned are the most common fish affected), it has also been found in Turtles and Tortoises.

Clinical signs include lethargy, pneumonia / breathing problems, ocular discharge, nasal discharge, white raised plaques in the mouth, subcutaneous oedema and can cause death.

Ranavirus can be detected using a PCR test; performed on a plain dry oral/cloacal swab or fresh samples of lung.

Picornavirus

Picornavirus belongs to the order Picornavirales, which is currently divided into 12 genera to date. Isolation has been predominantly found so far in tortoises and occasionally in snakes.

The Tortoises affected include: Spur Thigh, Marginated, Hermans, Leopard and Egyptian.

In numerous cases it has been found in conjunction with other pathogens especially Herpes and Mycoplasma.

Clinical signs include soft carapace in young animals, diphtheroid necrotising stomatitis, rhinitis, conjunctivitis and ascites.

Picornavirus can be detected using a PCR test; performed on a plain dry oral/cloacal swab or fresh samples of lung.

Reovirus

Reoviruses are RNA viruses which include Rotavirus and affect the gastrointestinal tract and lungs of Reptiles, Birds and Mammals including Rats, Mice, Hamsters and Guinea Pigs.

In reptiles there may also be some neurological signs.

Reovirus can be detected using a PCR test; performed on a plain dry oral/cloacal swab or fresh samples of lung.

Note: With of all these virus's it seems likely that at least one mode of transmission is the faecal-oral route and biosecurity arrangements within a collection should reflect this. It must be noted that initial studies suggest these virus's are only intermittently shed or shed for only a short time and serial sampling in quarantine may be required to prevent the entry of these diseases into a collection.

