### OPHIDIAN PARAMYXOVIRUS INFECTION

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<th>ANIMAL GROUP AFFECTED</th>
<th>TRANSMISSION</th>
<th>CLINICAL SIGNS</th>
<th>FATAL DISEASE?</th>
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<td>Mostly Snakes</td>
<td>The virus is excreted in the faeces and respiratory tract excretions</td>
<td>Sudden death, respiratory disease, lethargy, anorexia, central nervous disorders</td>
<td>In a number of cases, depending on species</td>
<td>Treatment/ control of secondary bacterial infections, supportive treatment</td>
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<td>Other reptile species (lizards and chelonians) can also be affected.</td>
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<td>Quarantine, hygiene. Virus detection and/or antibody titers for entry of new snakes (and lizards) into a collection</td>
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**Susceptible animal groups**
Snakes, viperid snakes most commonly affected, but also other species. Lizards and chelonians can also be infected (rare)

**Causative organism**
Reptilian paramyxovirus.

**Zoonotic potential**
No

**Distribution**
Worldwide

**Transmission**
Through direct contact with excreta, via vectors like water, mites, hands of caretakers, aerosols

**Incubation period**
Not clear, days to weeks, depending on the virus strain and on the species infected

**Clinical symptoms**
Sudden death, respiratory disease, anorexia, lethargy, in some cases central nervous disorders, e.g. opisthotonos.

**Post mortem findings**
Macroscopically: (exudative) pneumonia, swollen liver, enlarged pancreas, edema in the celomic cavity, pale kidneys.
Microscopically: Proliferative pneumonia, pancreatitis, pancreas necrosis, nephritis, and encephalitis.

**Diagnosis**
In live animals:
- Antibody detection (hemagglutination inhibition test)
- Virus detection (oral and cloacal swabs) by RT-PCR (virus isolation also possible but less sensitive)
In dead animals:
- Histology: (sometimes intracytoplasmatic) and intranuclear inclusion bodies in liver, lung, pancreas, kidney and brain
- RT-PCR
- Virus isolation
- Immunohistochemical detection in tissues and in situ hybridization have been described but are not generally available

**Material required for laboratory analysis**
Lung and intestine are the best tissues for virus detection in infected animals (formalin fixed for histology, fresh or frozen for RT-PCR or virus isolation), oral and cloacal swabs can be used for virus detection in live animals. Serum or plasma can be used for antibody detection.
### Relevant diagnostic laboratories
- Dr. Rachel E. Marschang, Institut für Umwelt- und Tierhygiene (460), Hohenheim University, Stuttgart, Germany
- Dr. Silvia Blahak, Chemisches und Veterinärun tersuchungsamt OWL, Detmold, Germany
- Dr. Szilvia Farkas, Veterinary Medical Research Institute of the Hungarian Academy of Sciences, Budapest, Hungary

### Treatment
Use of antibiotics to control secondary infections. E.g. enrofloxacin, marbofloxacin, trimetoprim-sulfamethoxazole. Supportive treatment. Bacteriological culture of excretions from the glottis, sensitivity for antibiotics.

### Prevention and control in zoos
- Quarantine new snakes for a minimum of 60 to 90 days in a separate room, with separate set of husbandry tools, separate air duct system, use footbaths containing disinfectant at entrance. Weigh the animals as they enter and exit the quarantine. House the animals individually.
- Test oral and cloacal swabs for virus shedding during quarantine.
- Necropsy all animals that are euthanised or die.
- Check for internal and external parasites; treat the animals against these common parasites.
- Serological test for antibodies: perform the test before the animal leaves the quarantine.
- Disinfect used materials and housing on a regular basis.

### Suggested disinfectant for housing facilities
All virucidal disinfectants, e.g. 10% chlorine bleach solution, quaternary ammonium compounds, and ammonia.

### Notification
- Guarantees required under EU Legislation
- Guarantees required by EAZA Zoos
- Measures required under the Animal Disease Surveillance Plan
- Measures required for introducing animals from non-approved sources
- Measures to be taken in case of disease outbreak or positive laboratory findings
- Conditions for restoring disease-free status after an outbreak

### Contacts for further information

### References

