HERPESVIRUS INFECTIONS IN WATER TURTLES

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<th>ANIMAL GROUP AFFECTED</th>
<th>TRANSMISSION</th>
<th>CLINICAL SIGNS</th>
<th>FATAL DISEASE ?</th>
<th>TREATMENT</th>
<th>PREVENTION &amp; CONTROL</th>
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</thead>
<tbody>
<tr>
<td>Fresh water turtles</td>
<td>Unknown</td>
<td>Hepatitis, pneumonia</td>
<td>None known</td>
<td>In houses</td>
<td></td>
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</tbody>
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\[in zoos\]
\[Strict hygiene and quarantine procedures for a minimum of 3 months\]

Fact sheet compiled by Norin Chaï, Ménagerie du Jardin des Plantes, Paris, France

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Fact sheet reviewed by P. Zwart, formerly Vakgroep Pathologie, Afd. Bijzondere Dieren, Utrecht University, The Netherlands
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Susceptible animal groups
Pacific pond turtles (Clemmys marmorata), painted turtles (Chrysemys picta), map turtles (Graptemys spp.).

Causative organism
Herpesvirus-like particles associated with lesions.

Zoonotic potential

Distribution
North America.

Transmission
The route of transmission is unknown.

Incubation period

Clinical symptoms
Lethargy, anorexia, and subcutaneous oedema. One adult male painted turtle was treated for an abscess before dying. Herpesvirus-like particles were found in the liver and lung of that animal.

Post mortem findings
Characteristic necropsy findings include hepatomegaly and pulmonary oedema.
Light microscopy indicates areas of hepatic necrosis with the presence of intranuclear inclusion bodies in hepatocytes. Inclusions have also been demonstrated in the spleen, lungs, kidneys, and pancreas.

Diagnosis
Based on detection of intranuclear inclusion bodies in tissues by light microscopy, and electron microscopic detection of viral particles.

Material required for laboratory analysis

Relevant diagnostic laboratories
Contact pathologists with experience with reptiles.
For virus detection: Dr. Rachel E. Marschang, Institut für Umwelt- und Tierhygiene (460), Hohenheim University, Stuttgart, Germany.
It is best to contact the laboratory before collecting and sending the samples to optimize chances of success.

Treatment
None described. Described cases have all been diagnosed post mortem.

Prevention and control in zoos
• Strict hygiene and quarantine procedures for a minimum of 3 months.
• Tanks should have separate water sources.
Herpesviruses can cause latent infections, so that any animals that become infected should be considered carriers for the rest of their lives.
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<th>Suggested disinfectant for housing facilities</th>
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<td>Notification</td>
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<td>Guarantees required by EAZA Zoos</td>
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<td>Measures required under the Animal Disease Surveillance Plan</td>
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<td>Measures required for introducing animals from non-approved sources</td>
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<td>Measures to be taken in case of disease outbreak or positive laboratory findings</td>
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<td>Conditions for restoring disease-free status after an outbreak</td>
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<td>Contacts for further information</td>
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### References