

Seneca Valley Virus

This summary has been excerpted from the full report at SHIC
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Key Points

- The Transmission routes and pathogenicity for Seneca Valley Virus (SVV, also known as Senecavirus A) are unclear
 - Neutralizing antibodies to SVV have been detected in swine, cattle, and wild mice in the United States and isolates have been found throughout the country and linked to recent vesicular disease outbreaks in Brazil
 - In future occurrences of idiopathic vesicular disease, SVV must be considered
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Etiology

- Seneca Valley virus (SVV, also known as Senecavirus A) is a small, non-enveloped picornavirus discovered incidentally in 2002 as a cell culture contaminant.
- Only a single species is classified in the genus *Senecavirus*. The family *Picornaviridae* also contains foot-and-mouth disease virus (FMDV) and swine vesicular disease virus (SVDV).

Epidemiology & Clinical Impact

- The transmission route(s) for SVV are not well understood. Another picornavirus, FMDV, is known to spread readily by direct contact with infected individuals, fomites, or exposure to aerosolized virus, but it is unknown if these same modes of transmission also apply to SVV.
- The survival of SVV in the environment has not been reported. Most cases of idiopathic vesicular disease, which is associated with SVV, seem to occur between spring and fall.
- Neutralizing antibodies to SVV have been detected in small populations of swine, cattle, and wild mice in the United States. Since July 2015, isolates have been identified in pigs from Minnesota, Iowa, South Dakota, Nebraska, Illinois, Indiana, Missouri, Oklahoma, and North Carolina. SVV has also been linked to recent vesicular disease outbreaks in Brazil.
- The pathogenicity of SVV in swine remains unclear. Experimental infections in swine have failed to produce signs of disease and SVV has been isolated from healthy pigs in the United States. However, the virus is linked to idiopathic vesicular disease, and multiple cases of vesicular disease in swine in the United States have been reported in which SVV was the only detected pathogen.

Control

- No vaccines are currently available for SVV.
- Proven methods for prevention and control of SVV are lacking. Vaccination and stamping out have been used to control FMD, which is caused by a similar virus.
- Common industry biosecurity practices should also be in place.
- In future occurrences of idiopathic vesicular disease, SVV must be considered and the presence of additional etiologic or adventitious agents closely monitored as well. Surveillance of healthy herds and diagnostics on individuals without clinical signs may also help to provide a clearer picture of the actual degree of morbidity associated with SVV infection in swine.

Complete Report

Lambert T, Killoran K, Leedom Larson KR. Seneca Valley virus. Swine Health Information Center and Center for Food Security and Public