

Fowl Adenovirus and Inclusion Body Hepatitis



Inclusion Body Hepatitis (IBH) is one of many diseases caused by infection with fowl adenovirus (FAdV). It typically occurs in 2-3 week old broiler chickens but may affect chickens from 4 days to 7 weeks of age. There are several species of FAdV that can cause IBH, but species D and strain FadV11 and species E and strain FadV8b are the most common in Ontario. In Canada, IBH usually causes disease on its own but it can also occur secondary to immunosuppression by other infectious diseases as well as mycotoxins or environmental stressors.

What are the clinical signs of IBH?

IBH causes severe liver lesions in young birds, usually up to 35 days of age. Affected birds may be:

- jaundiced (yellowing of body fat)
- depressed
- anorexic
- experience sudden death due to metabolic imbalances

On postmortem examination, affected birds have pale and swollen livers which may show small hemorrhages on the liver surface. Swollen kidneys are also common.

How is FAdV transmitted between birds to cause IBH?

FAdV is transmitted horizontally, through contact with infected birds or fomites such as litter or dust, and vertically, from the parents. Outbreaks in birds younger than 3 weeks seem to be associated with higher mortality and are more suggestive of vertical transmission.

Cross infections with more than one FAdV species (e.g. D and E) are commonly found, suggesting that progeny from different breeder flocks may be contaminated with different species of FAdV and that there is little cross-protection between species.

How is IBH diagnosed?

Veterinarians can diagnose the disease from a sample of mortality by submitting specimens for histopathology, PCR testing, genotyping, and, potentially, virus isolation.

How is IBH managed?

There is no treatment for IBH but the disease can be managed by focusing on:

- Controlling, by vaccination, concurrent diseases that suppress the bird's immune system.
- Providing a healthy environment, minimizing stress and providing optimal brooding conditions.
- Cleaning and disinfection between cycles. Clean up is critical as repeat infections are regularly identified on the same farms over time due to challenge from the environment.
- Providing sufficient downtime between flocks.
- Vaccinating the parent stock which reduces the level of infection of the breeders, prevents egg transmission to progeny and produces maternal antibodies. Most maternal antibodies are gone by 21 days of age, highlighting the importance of preventing entry of the virus and reducing the viral load in the barn.
 - Only autogenous inactivated vaccines are available. It is important that they contain the most relevant strains that are circulating in Ontario flocks. Current vaccines contain serotypes 11, 8a and 8b of species D and E respectively.

How can you help?

In order to know what current IBH strains are affecting your birds, continuous monitoring of field strains of IBH needs to be done on a regular basis. Autogenous vaccines can be developed that reflect the current strains, however it can take up to two years for this to occur. **If you have a sick bird, contact your veterinarian and request testing.**