

Avian Bornavirus Infection

Avian bornavirus was identified as the cause of proventricular dilatation disease or PDD in 2008. Proventricular dilatation disease was first recognized in the late 1970s. Initially, this mystery disease seemed to be limited to macaws, and was termed “macaw wasting or fading syndrome”. Today PDD has been reported in more than 50 species, including cockatoos, cockatiels, lovebirds, macaws, parakeets, Amazon parrots, conures, Eclectus parrots, and African grey parrots. Proventricular dilatation disease has also been reported in songbirds, like the canary, honeycreeper, and weaver finch, as well as waterfowl, toucans, and birds of prey. Adult birds appear to be more commonly affected than juveniles.

Avian bornavirus (ABV) infection is one of the most frustrating diseases encountered in avian medicine today. Researchers at various institutions around the world are working on ABV infection; a summary of current information is listed below.

What is the biology of avian bornavirus infection?

This RNA virus is shed in the droppings, but can also be transmitted through the egg. The incubation period for ABV infection can be as brief as days but may also be much, much longer, possibly decades, in some birds.

Avian bornavirus infection is also known as...

Terms used to describe disease caused by ABV include neuropathic gastric dilatation, myenteric ganglioneuritis, proventricular and ventricular myositis, psittacine encephalomyelitis, and infiltrative splanchnic neuropathy. Neuropathic ganglioneuritis is a very common term used to describe symptomatic avian bornavirus infection today.

What are the signs of neuropathic ganglioneuritis?

Common signs of neuropathic ganglioneuritis or PDD range from mostly gastrointestinal signs, primarily neurological defects, or both gastrointestinal and neurological signs can be seen.

- The proventriculus is the glandular portion of the bird stomach. Disease of the proventriculus leads to an inability to digest or absorb food normally therefore common signs include depression, weight loss, regurgitation, and/or passage of undigested food in the feces. Abdominal distension, lethargy, weakness, diarrhea, scant feces, or an increase in the water component of the droppings have also been described in some birds. Secondary bacterial and fungal infections are also common.
- Neurologic signs can include wobbliness, tremors, weakness, abnormal head movements, or even seizure activity. Some affected birds develop central nervous system signs in the absence of gastrointestinal abnormalities.

How do we determine if a bird's illness is caused by avian bornavirus infection?

Definitive diagnosis of ABV infection is challenging in the living bird, but typically relies upon a combination of blood tests (serology) and polymerase chain (PCR) tests that look for a short sequence of viral RNA. Your avian veterinarian may also want to perform a crop biopsy or surgical removal of a small segment of the crop wall. This sample can be evaluated beneath the microscope for signs consistent with PDD or neuropathic ganglioneuritis.

How common is avian bornavirus infection?

There is evidence that ABV is widespread in parrots in the United States. Infection rates of 33% to 60% have been identified in birds in homes and aviaries that appear completely healthy. Since ABV infection can be difficult to confirm, infection rates are probably even higher.

What can be done for birds with PDD?

There is currently no treatment that definitively halts the progression of disease. Given the inflammatory component of disease, some avian veterinarians administer nonsteroidal anti-inflammatory drugs like meloxicam. Management of the PDD patient frequently relies upon nursing care and making sure the bird is on high quality, easily digestible nutrition.

How can I minimize the risk of PDD to my pet bird?

Although ABV is intermittently shed in droppings, the virus is susceptible to most detergents, disinfectants, and sunlight so a good sanitation routine is important.

When ABV infection is diagnosed or suspected in a multi-bird household, isolate infected birds whenever possible. Wash your hands between birds, and always care for birds that have tested negative ABV infection before handling positive birds.

References

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