

Avian Polyomavirus

Avian polyomavirus is one of the most important viral diseases seen in the companion parrot. Avian polyomavirus or APV can cause serious financial losses for aviaries and pet stores as well as considerable heartache for owners.

What types of birds are susceptible to avian polyomavirus?

APV has been reported in a wide variety of parrots. Highly susceptible species include budgerigar parakeets, conures, macaws, Eclectus parrots, caiques, ring-necked parakeets, and lovebirds. Most affected parrots are baby birds ranging from Day 10 to less than 14 weeks of age, although lovebirds may be up to 1 year of age. Most affected non-budgerigar parrots are between 4-8 weeks of age. When purchasing a new baby bird, only purchase weaned individuals as they are generally old enough to be past the danger point of developing APV.

How is avian polyomavirus transmitted?

Baby birds are probably infected by APV in the environment as soon as they hatch. Nestlings (10-25 day old) to young adults shed virus in their feces, skin, feather dander, and in crop secretions. (The crop is the pouch that comes off of the bird esophagus). Budgerigar parakeet or “budgie” hens can also transmit virus directly to the egg.

What are the signs of avian polyomavirus?

In nestling budgies, APV may cause stunting and high death rates. A number of organ systems may be affected leading to:

- Abnormal or incomplete feather growth
- Bleeding underneath the skin
- Belly distension caused by an enlarged liver and/or a collection of fluid
- Brain lesions and associated head tremors

In other parrots, signs may include:

- Sudden death
- Delayed emptying of the crop
- Weakness
- Paleness
- Bleeding underneath the skin and from feather follicles, and blood in the urine

How is avian polyomavirus diagnosed?

Diagnosis of APV infection relies on the identification of viral DNA in blood samples, oral swabs, and/or cloacal swabs.

What can be done for birds with APV?

There is no treatment for APV, and the prognosis is poor to grave. Most affected birds that develop signs of disease will die, although some individuals can pull through with intense supportive care. Some small parrots, particularly budgies, infected with APV never become outwardly ill.

What about those birds that survive?

Surviving budgies shed virus for up to 6 months after infection. Viral shedding stops with the onset of sexual maturity or during the first breeding cycle. Most non-budgerigar parrots clear virus within several weeks to several months.

Prevention

A vaccine is available for use against avian polyomavirus in non-budgerigar parrots. Nestlings may be vaccinated at 5 weeks or older and then boosted 2-3 weeks later. Since protection from the vaccine is achieved at about 9 weeks of age, use of this vaccine is controversial in baby birds since many will become sick between 4-8 weeks of age. Vaccination is always recommended for breeding adult birds as this may allow the adult to pass antibodies to the chick.

Careful avicultural practices are widely considered the cornerstone of APV prevention:

- Screen new birds entering an aviary, pet store, or home for APV.
- Isolate birds that have been to shows, exhibitions, fairs, and other events, and consult your veterinarian before returning birds to the group.
- Do not keep budgies, lovebirds, or cockatiels with larger parrots. It is possible for these species to be infected and shed APV without showing signs of disease.
- Strictly control traffic, of birds and people, entering and leaving your premises.
- Quarantine all new birds.
- In the face of an outbreak, consider artificial incubation and hand-raising to break the cycle of environmental contamination.

Reference

Phalen DN. Implications of viruses in clinical disorders. In: GJ Harrison, TL Lightfoot Dorrestein, K Quesenberry (eds). *Clinical Avian Medicine*. Palm Beach, FL.: Spix Publishing; 2006: 727-732.

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