

## **Avian Mycobacteriosis**

### **What is it?**

A bacterial infection of birds most commonly caused by *Mycobacterium avium* or *Mycobacterium genavense*. Avian mycobacteriosis has a world-wide distribution and has been reported widely in pet birds, free-ranging and captive wild birds, and poultry.

### **What are the signs that are seen with disease?**

Usually the clinical signs of affected birds include emaciation, lethargy and weakness, eventually resulting in death several months later. On necropsy, lesions are typically found in the liver and gastrointestinal tract although many other organ systems can potentially be affected.

### **How is it transmitted?**

Mycobacteria are opportunistic organisms and the primary source of infection is a contaminated environment. Feces from infected birds, which are shedding the organisms via the intestinal tract, are the principal source of infection for other birds. Mycobacteria can survive in soil for years, hence, infected soil and other organic material is a potential source of infection for successive generations or new groups of birds.

### **How is it diagnosed?**

Diagnosing mycobacteriosis in live birds is problematic and typically unrewarding. Most often the disease is diagnosed once birds have died. The usual method of identifying the presence of mycobacterium in alive birds is by collecting and staining fecal samples with Ziehl-Neelsen (carbol-fuschin) stains and looking for the presence of the bacteria under a microscope. Other diagnostic tests that may be performed include systemic blood work (to evaluate the organs, as well as red blood cells, white blood cells, and platelets), radiographs (x-rays), celioscopy (evaluating the body cavity of the bird with a camera), and tissue samples.

### **How can it be treated?**

Treatment of avian mycobacteriosis remains controversial and essentially unfeasible. *Mycobacterium avium* is notoriously resistant to anti-mycobacterial drugs. Owing to the infectious nature of this disease to other birds and mammals, the debilitating effects to the diseased individual bird and the zoonotic potential (although slight), a case could be made for the humane euthanasia of all infected birds. Another consideration is the potential for poor compliance by the owner, leading to the selection for multi-drug resistant mycobacteria. In combination with the potential zoonotic risk, this should discourage the use of anti-mycobacterial drug treatment regimes in birds.

### **How is it prevented?**

Disease can be virtually eliminated when the environment of the bird can be controlled. These management practices are based on the following two principles:

- a) Identification and either elimination or permanent segregation of infected birds
- b) Strict hygiene practices to minimise contact with feces, soil, and other potentially contaminated materials

If a decision has been made not to euthanize, birds with confirmed mycobacteriosis should be kept permanently separated from other birds.

### **Is it zoonotic?**

Although rare, *Mycobacterium avium* and *Mycobacterium genavense* can cause disease in humans. Immunocompromised patients, such as those with AIDS and young children, appear to be more susceptible than immunocompetent adults.