



## Information Sheet on Psittacosis/Ornithosis

### Introduction

This document summarises the key information on the disease Psittacosis/Ornithosis. The guidelines are for informational use only. They are not exhaustive. Other methods may occasionally be applicable.

### Causal Agent

The causal agent of Psittacosis/Ornithosis is the bacterium *Chlamydophila psittaci* (formerly known as *Chlamydia psittaci*) which is a member of the family *Chlamydiaceae*. There are currently thought to be 8 serovars and 9 genotypes of *Chlamydophila psittaci*.

### Transmission and Epidemiology

Transmission of the disease is mainly through aerosols of respiratory secretions, faecal, or feather dust, but oral infection is an alternate route. Young birds are more susceptible to infection and clinical disease than older birds, and some species seem to be more susceptible than others.

### Disease Observed in Cage Birds

Many birds may carry the bacterium without showing any clinical signs of disease and yet may still intermittently shed the bacterium in their faeces.

Most acute cases in psittacine birds show clinical signs of liver and respiratory tract disease initially with increased respiratory tract secretions and the production of lime green urates due to increases biliverdin production and excretion. Diarrhoea is another common clinical sign and patients are often dehydrated. Death may ensue rapidly after onset of clinical signs, particularly in young birds.

Chronic cases may also be seen with non-specific clinical signs that may vary from weight loss, intermittent sinusitis, and conjunctivitis to poor feathering or feather plucking.

*C. psittaci* is commonly a secondary pathogen in immunosuppressed birds such as those suffering from psittacine beak and feather disease or those affected by poor husbandry and nutrition. It is particularly common in pet Budgerigars and Cockatiels.

### Disease Observed in Other Birds

Pigeons may show clinical signs such as bilateral or unilateral conjunctivitis (often referred to as 'one-eyed cold'). It may also produce a transient ataxia, diarrhoea, and yellow to lime green urates indicating hepatic involvement.



Many waterfowl may show no clinical signs of disease at all but are considered natural hosts for this bacterium. Occasionally trembling and gait abnormalities have been noted in ducks with yellow-green urates.

In domestic poultry such as chickens and turkeys it is not a Notifiable Disease but suspicion or identification of the disease in poultry should be reported to the local Animal Health Divisional Office. It produces green urates and diarrhoea, respiratory rales, nervous tremors, and a drop in egg production in layers.

### **Diagnosis of *Chlamydophila psittaci* Infection**

Various testing regimes may be used in the diagnosis of *Chlamydophila psittaci* infections.

One of the most sensitive is the polymerase chain reaction (PCR) test for DNA particles of the bacterium performed usually on a bulk faeces sample (i.e. all faeces passed by the patient over a period of 3-5 days). It may however produce false negative results due to intermittent shedding of the bacterium by the patient. Positive results indicate current infection and active shedding. This test may take some time to produce a result (7-10 days on average) due to its design.

Antigen kit tests are available for 'in-house' testing and are generally less sensitive than the bulk PCR test although have the advantage of producing results quickly. Again false negatives are a problem and may occur due to the intermittent shedding of the bacterium by the patient as well as reduced sensitivity of the test.

Serology/antibody tests denote exposure to disease but not necessarily current infection unless levels are high or rising titres are noted on paired samples.

Radiography may be used to investigate clinically as hepatomegaly is suggestive though not pathognomonic for this condition. An enlarged spleen is also a common clinical finding, particularly in psittacine birds. Blood tests, particularly to establish the presence of elevated liver enzymes and a significant heterophila/monocytosis (total WBC often  $>30 \times 10^9/L$ ) would similar be clinically suggestive but not pathognomonic for chlamydophilosis. Other diseases affecting the respiratory system and liver of the bird can also produce similar clinical findings.

### **Treatment of *Chlamydophila psittaci* Infection**

Standard treatment involved the use of tetracyclines, principally doxycycline. Clinical cases have been shown to improve when fluoroquinolones such as enrofloxacin have been used, but insufficient data has been produced to show that these antibacterials can eradicate infection from the body of the patient. Prolonged courses of treatment are generally required (usually in excess of 45 days) as the bacterium spends most of its lifecycle in an intracellular position which is relatively well protected from the antibacterial agents.



### ***Chlamydophila* as a Zoonotic Agent**

*Chlamydophila psittaci* is a potential zoonotic agent and can produce mild to severe disease in humans. The incubation period is 5-14 days, although longer periods have been reported.

Clinical signs vary from inapparent illness to pyrexia/fever of unknown origin (PUO) and an atypical pneumonia. General malaise with muscular pain, a hacking non-productive cough, and headaches are also common. In severe cases a myocarditis, encephalitis, and nephritis may be seen with occasionally ensuing organ failure and death. Disease is more likely to be seen in those sectors of the population that are immunosuppressed for one reason or another such as diabetes mellitus or AIDs suffers, the very young or elderly. Avian strains of *C. psittaci* can cause atypical pneumonia during pregnancy. Massive placental infection with impaired placental perfusion may ensue subsequently and this has rarely been associated with placentitis and foetal hypoxia.

The disease is transmitted to humans via respiratory secretions, faecal or feather dust generally and gains access via the respiratory route. Therefore, it is advisable to take routine precautions, such as the use of face masks and gloves, when handling potentially infectious avian material. Post mortems should only be carried out in approved fume cupboards.

Each facility should develop its own Standard Operating Procedures as part of its general health and safety policy for dealing with avian patients having carried out an individual risk assessment of the perceived risk from *Chlamydophila psittaci*. This would be expected to vary with factors such as the avian species commonly seen/kept and the nature of the work performed.