

# **Chlamydia Psittaci**

## **(Parrot Fever) Infection in Companion Birds**

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One of the most common bacterial infections in companion avian species is *Chlamydia psittaci* or psittacosis. This obligate intracellular parasite is found in all regions of the United States and is very contagious between psittacine (parrot) species. The fact that this organism lives within (italics ours) a cell, instead of on the outside of the cell, makes it difficult to diagnose and treat by veterinarians and aviculturists. Another major problem with *Chlamydia psittaci* or psittacosis involves the zoonotic potential of the organism. A zoonotic disease is an infection that can be transmitted from animals to humans. In birds, psittacosis may present as an upper respiratory infection with nasal and ocular discharge, diarrhea or as a combination of both. In some cases, birds may be infected but show no signs. These cases are of concern because the animals are carriers and shed the organism. Psittacosis in humans can result in mild to severe disease. In severe cases, humans that are infected often have severe fever with night sweats leading to pneumonia. It is very important that pet bird owners become aware of this disease in order to prevent outbreaks from occurring in their aviary or to protect their pet bird and families. *Chlamydia psittaci* can enter the bird through the respiratory system or the oral cavity. This usually occurs through infected fecal material that has become airborne, on aerosolized nasal discharge or from the clothes of a bird owner that has been exposed. It is very important that pet bird owners have a post purchase exam performed on all new birds before they are quarantined or if quarantined birds become ill. Quarantine procedures should be in place at all aviaries/households to prevent introducing infectious agents into a resident population. Quarantined birds should be maintained in a room or building with a separate airflow-ventilation system than the resident population. Quarantine should be for at least 30 days with no medication given unless prescribed for a specific illness by an avian veterinarian. This allows quarantined bird(s) to "break" with an illness they may be carrying, instead of the disease becoming evident when the bird is released. There is not an adequate diagnostic test available at this time to diagnose *Chlamydia psittaci* in a carrier bird. The three day new bird guarantee, based on a veterinary exam, is useless when screening for *C. psittaci*. A bird that is carrying the organism with no obvious signs of infection may break one month, one year or eight years later with no other exposure. All dead birds should be necropsied by an avian veterinarian to determine the cause of death. Necropsies are helpful to the aviculturist because they identify problems or potential problems in an aviary before they occur. If a problem already exists, then treatment and preventive measures may be taken before any more losses occur. Because of the zoonotic nature of psittacosis, owners should protect themselves if they

have birds that have been diagnosed, through proper cleaning and management and wearing a face mask. Any bird owner with high fever and pneumonia like symptoms should inform their physician that they own birds. Physicians commonly do not associate *Chlamydia psittaci* with pneumonia, therefore you may aid in making the right diagnosis.

If you have to treat birds, doxycycline, a fifth generation tetracycline, is the drug of choice. Doxycycline or tetracycline derivatives may be administered in seed, pellets, orally or by injections. All treatments must be for 45 days. The long treatment period is required because the intracellular lifecycle of the organism makes it difficult to treat. If the treatment is not followed for 45 days, the bird may get better, but probably will become a carrier and shed the organism to other birds and become ill again. When medicated feed and pellets are used in the treatment regimen, they should be the only food item offered to ensure that the bird will receive the appropriate amount of medication. Oral dosing of medication must be done twice a day. A calcium supplement should be added to the diet or available in the cage at all times, since tetracycline binds with this mineral which may cause a calcium deficiency. If the bird(s) being treated become ill during the treatment period contact your avian veterinarian. The antibiotic injections provide some relief to the pet bird owner because long acting doxycycline may be administered every 5 to 7 days over a 45 day treatment period. Whatever treatment regime you and your veterinarian decide on, it must be followed religiously to be successful. It is a very costly disease to treat because all forms of doxycycline are expensive and the treatment period is extensive. Birds that have been diagnosed with *Chlamydia psittaci* can be treated. It is important for owners to understand this illness to prevent the spread of this highly infectious disease. Working closely with your avian veterinarian will allow you to become knowledgeable of the latest diagnostic testing and treatment programs. There are research projects looking at more efficient testing and possible vaccine protection. Until this new information is available, good aviculture management techniques will hope prevent an aviary or household from becoming infected with *Chlamydia psittaci*.

Note from the Editor Dr. Thomas Tully, Jr. is presently involved in research to develop a successful vaccine to control *Chlamydia psittaci* (Psittacosis) in companion and breeding psittacines. We hope to keep you informed as this important research continues to develop

This information is taken from Bonnie Munro Doane's book,

## **The Parrot in Health and Illness.**

### **Transmission and Infection**

The two routes of transmission of psittacosis are respiratory and oral. Respiratory transmission insides the inhalation of infected particles of fecal, ocular, nasal, and respiratory discharges, and feather dust. Oral transmission includes the ingestion of food and water contaminated with

## Chlamydia bearing feces

Parents that are carriers can infect their nestling via the regurgitated food they feed the babies

A prior infection of psittacosis does not guarantee the bird is immune from reinfection. Due to the fact that *C. psittaci* lives "inside" the cells of its host it does not stimulate high production of antibodies against Chlamydia

Birds that survive Psittacosis may shed the organism intermittently in their feces for at least several months and possibly longer (Gerlach, 1986b). Clipsham (1988c) feels carriers may remain so for life, but may not always be a danger to other birds. Worrell (1986b) cites one case in which a bird with asymptomatic (latent) psittacosis developed overt psittacosis after a period of ten years, during which time exposure to other birds had not occurred. The discovery of nestlings of apparently healthy parents suddenly and inexplicably dead (either in the nest or at the bottom of the enclosure) could point to the presence of latent psittacosis in a breeding flock. (*Editor's note: This is also indicative of other viral infections. Therefore all unexplained deaths of nestlings or adults should be reported to your avian veterinarian and necropsies should be done to protect the health of the remaining flock.*)

## Symptoms

Symptoms of psittacosis are variable. They depend upon the strain of *Ch. psittaci* with which the bird is infected, the bird's immune system status, species, age, and the presence of other concurrent infections. Mild outbreaks of psittacosis may go unnoticed because there will be very few symptoms. Alternatively there may be very mild respiratory symptoms and diarrhea (*Avian Disease Manual, 1983*)

Symptoms are usually related to respiratory and digestive system involvement. During the acute phase those symptoms may including: (Gerlach, 1986b)

- Respiratory problems (shortness of breath, noisy breathing, "runny nose," sinus infection)
- Diarrhea
- Polyuria (excess urine)
- Lethargy
- Dehydration
- Ruffled feathers
- Loss of appetite
- Yellowish, grayish, or lime green urates

Subacute or chronic psittacosis may show the following symptoms (Gerlach, 1986b)

- Tremors
- Unusual head positions
- Convulsive movements

- Opisthotonos (neurologic disease in which the top of the head is bent over and approaches the back. *Avian viruses, Function and Control, Branson W. Ritchie, DVM, PhD.*)
- Partial or complete paralysis of the legs

In addition to the above manifestations, other symptoms may be noted (*Fudge, 1984*)

- Weight loss
- Unusual tameness
- Lack of normal molt
- Poor condition in beak and nails
- Sneezing
- Swollen, infected eyelids
- Wasting of breast muscles

Prognosis . . .

The outcome of treatment varies, depending upon the individual bird's species, age, immune status, length of illness before treatment was sought, the virulence of the strain with which it is infected, mode of treatment, and its response to that treatment. In general, the sooner the treatment is sought, the better the outlook. Prevent of the spread of psittacosis throughout a collection or aviary is very important. Precautions must also be taken to protect human caretakers. It is recommended that you take the following precautions: (information taken from several sources)

1. Isolate all sick birds.
2. Isolate incoming (new) birds for thirty to forty five days. (Longer is better)
3. Test suspicious birds (those with loose droppings, weight loss, or respiratory problems.)
4. Work with your avian veterinarian and treat infected birds with Doxycycline for 45 days.
5. Thoroughly clean and disinfect cages, surroundings, and equipment used for a psittacosis bird. Quaternary ammonium disinfectants have proved very effective against this bacteria. (i.e. A-33, Barquat, Cetylcide, Floquat, Hitor, Merquat, Omega, Parvosol, Quintacide, Roccal, Zephiran. [*Avian Viruses, Function and Control*] As well as Roccal-D, Betadine and Environ-One-Stroke)
6. Keep circulation of feather dust to a minimum.
7. Droppings from an infected bird should be soaked with disinfectant and placed in a sealed plastic bag prior to disposal.
8. Contact with infected birds by humans should be kept to an absolute minimum. Strict quarantine techniques should be used.
9. Any Flu-like symptoms in human caretakers should be monitored and a physician should be contacted. Just as with birds, human psittacosis is treatable, but can develop into a serious problem without proper treatment.