

Psittacosis/ Avian Chlamydiosis

Disease Vectors

Psittacosis is an infection spread to humans from birds, caused by the bacterium *Chlamydia psittaci*. The infection is called avian chlamydiosis in birds and has been found in over 460 species (NAHSPV 2016) and caused symptoms in roughly 150 species (Eidson 2002). As the scientific name implies, this disease is more common among members of the parrot family with 57 species susceptible, especially cockatiels and parakeets (budgies). However, the infection also occurs in pigeons, all species of poultry, and shore birds.

The primary way the bacteria spreads to people is from breathing dried secretions or excretions from infected birds, primarily feces, feathers or other contaminated material that becomes airborne. Spread may also occur via mouth-to-beak contact and from handling infected birds. Although it is possible, person-to-person spread of psittacosis is thought to be rare (NASPHV 2016). Those at risk include pet bird owners and breeders, pet shop employees, zoo employees, poultry workers, veterinarians, diagnostic laboratorians, and wildlife workers.

Symptoms, Diagnosis & Treatment

Psittacosis is not a common disease; from 2006-2012, 58 cases were reported to CDC although it is likely that additional asymptomatic or mild cases were not diagnosed or reported (CDC Psittacosis webpage). The disease typically develops 5-14 days after exposure, and symptoms range from mild, non-specific illness to serious respiratory problems including pneumonia; in severe cases, other organs may be damaged. Typically, patients experience flu-like symptoms including fever, chills, headache, muscle aches and dry cough. Antibiotic therapy with tetracycline drugs is effective and full recovery is expected over 2-3 weeks (NAHSPV 2016, Medline 2013). People exposed to birds with avian chlamydiosis should seek medical attention if they develop influenza-like symptoms or other respiratory illnesses.

Clinical signs in birds are often subtle and not exclusive to of *Chlamydia psittaci*, making diagnosis difficult. Clinical signs include ruffled appearance, poor appetite, weight loss, lethargy, respiratory disease, and lime green droppings. Some birds have ocular discharge, leading to the term “one eyed cold” (Long Beach Animal Hospital webpage). Chronically infected birds may have tremors, unusual head movements or paralysis of the legs. Many infected birds show no symptoms of disease but can shed bacteria in droppings and secretions. Doxycycline is the drug of choice for treating avian chlamydiosis; treatment of infected birds should be directed by a veterinarian. Routine use of prophylactic antibiotic treatment is highly discouraged because it may lead to resistant strains of bacteria.

Prevention

The National Association of State Public Health Veterinarians (2016) provides an excellent summary of measures to prevent and control psittacosis and avian chlamydiosis. Some of the key points are:

- Practice good husbandry to reduce stress in pet and store birds. Position enclosures to prevent the transfer of fecal matter, feathers, food, and other materials. Exhaust ventilation should be sufficient to prevent accumulation of aerosols and prevent cross contamination of rooms.
- The bottom of the enclosure should be made of a wire mesh. Solid-sided enclosures or barriers should be used if enclosures are adjoining. Substrate/litter that will not produce dust (e.g., newspapers) should be placed underneath the mesh.
- Clean all enclosures, food bowls, and water bowls daily. Soiled bowls should be emptied, cleaned with soap and water, rinsed, placed in a disinfectant solution, and rinsed again before re-use. Enclosures should be thoroughly scrubbed with soap and water, disinfected, and rinsed in clean running water before housing new birds.
- Inform all persons in contact with birds or bird-contaminated materials about potential health risks. Pet store workers and owners of psittacine birds should consider any flu-like symptoms as possible psittacosis and inform their healthcare providers that they have had contact with psittacine birds. Confirmed cases of psittacosis in people should be reported to public health authorities.
- When cleaning enclosures or handling potentially infected birds, caretakers should wear protective clothing,

which includes a smock or coveralls, gloves, eyewear, protective footwear, a disposable surgical cap, and a disposable fitted particulate respirator. Surgical masks may not be effective in preventing transmission of *C. psittaci*.

- Necropsies of potentially infected birds should be performed in a biological safety cabinet. The carcass should be moistened with detergent and water to prevent aerosolization of infectious particles during the procedure.
- To the extent possible, bird enclosures should be placed to prevent the transfer of fecal matter, feathers, food, and other materials.
- Enclosures, bowls, and substrate should be cleaned and/or disinfected often to remove possible sources of infection. Particulate matter should be removed before disinfecting with ammonium compounds, accelerated hydrogen peroxide or bleach.
- Avoid purchasing or selling birds that have signs consistent with avian chlamydiosis.
- Pet stores should avoid housing together birds from different sources and should consider quarantining newly acquired susceptible species.
- Quarantine newly acquired or exposed birds and isolate ill birds in a separate air space from other birds and non-caretakers.
- Birds that have been to shows, exhibitions, fairs, and other events should be quarantined for at least 30 days and tested before they are returned to a group.
- Birds with frequent public contact (e.g., bird encounters, long-term care facilities, schools) should be tested in consultation with a veterinarian to reduce potential human exposure.
- Test birds before they are to be boarded or sold on consignment and house them in a room separate from other birds pending test results.
- To aid in traceback following confirmed psittacosis, records of transactions of susceptible birds should be kept for at least one year.

SPECIFIC MEASURES FOR CLEANING HABITAT OF INFECTED OR EXPOSED BIRDS

- Thoroughly scrub soiled enclosures of infected or exposed birds with a detergent to remove all fecal debris, rinse and disinfect (most disinfectants require 5-10 minutes of contact time), and re-rinse to remove the disinfectant.
- Discard all items that cannot be adequately disinfected (e.g., wooden perches, ropes, nest material, substrate/litter).
- Minimize the circulation of feathers and dust by wet mopping the floor frequently with disinfectants; prevent air currents and drafts within the area.
- Reduce contamination from dust by spraying the floor with a disinfectant or water before sweeping it. A vacuum cleaner or pressure washer may aerosolize infectious particles and should be used with caution.
- Frequently remove waste material from the enclosure (after moistening the material) and burn or double-bag the waste for disposal.

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