Avian chlamydiosis

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Summary
Avian chlamydiosis (AC) can be economically devastating to producers and a serious public health problem. Most infections in humans are due to exposure to psittacine birds and pigeons; however, outbreaks resulting in severe disease and even death do occur in abattoir workers following processing of infected flocks. The disease occurs primarily in turkeys and ducks, but can affect all types of poultry. In poultry, the disease varies from one producing high morbidity and mortality to one that is asymptomatic. Farm workers and abattoir workers are at risk following exposure to either extreme. Although outbreaks of AC have declined since the 1970s, some parts of the world are now experiencing a rise in incidence. Whether the initial decrease was due to changes in production methods or to the increased use of antibiotics is not known. The mechanism for introduction of the disease into a flock or area is poorly understood. Wild birds are often infected by the same strains as domestic flocks and are therefore thought to play a major role in introduction. Data also indicate that vertical transmission may occur. Persistently infected carrier birds are known to be a source of chlamydiosis in the pet bird industry, but have not been confirmed as a source of infection in poultry flocks.

Keywords
Avian diseases – Chickens – Chlamydia – Chlamydophila – Ducks – Fowl – Poultry – Turkeys.

Introduction

Avian chlamydiosis (AC) is caused by the bacterium *Chlamydophila psittaci* (*Chlamydophila* is the new genus name adopted in a reclassification that separates the family *Chlamydiaceae* into two genera, namely: *Chlamydia* and *Chlamydophila*) (15). Avian chlamydiosis was originally termed psittacosis, or parrot fever, as the disease was originally recognised in psittacine birds and in humans in contact with these birds (28). In 1941, the term ornithosis was introduced to refer to chlamydial disease in or contracted from domestic poultry and wild birds other than psittacine birds (27). These diseases are now all considered to be similar, and the term avian chlamydiosis is preferred (5, 33).

Chlamydiae are known to infect most species of domestic poultry, pet birds and wild birds (5, 12, 13, 41). Major outbreaks have occurred on turkey and duck farms and have often led to infection of humans (5). Although the chicken appears to be more resistant, natural infections have been reported in breeder flocks, broilers and layers (10, 11, 25, 34). Chlamydial infections have been identified in over 150 species of wild birds (12, 13). The reported infection rates vary greatly, with the pigeon having the highest rates of over 30% infected. Persistent or enduring infections which continue for months or years are thought to be common (12, 46). However, the potential of these enduring infections to act as a source of infection for poultry or humans, or to cause an acute reactivation of the disease in the carrier is unknown.

At least six distinct serotypes or strains of *C. psittaci* infect birds (3) (Table I). Each serotype appears to be associated with a different group or order of birds (1, 3, 14, 39), and the ability of a serotype to establish a persistent infection in a particular order of birds may be related to these associations. Epidemiological studies indicate that the serotypes are distributed world-wide. The avian serotypes are distinct from those commonly associated with chlamydiosis in mammals.

Table I
***Chlamydia psittaci* serotypes**

Serotype	Representative strain	Host association
A	VS1	Psittacine
B	CP3	Pigeon, dove
C	GR9	Duck, goose
D	NJ1	Turkey
E	MN	Pigeon, turkey
F	VS225	Psittacine
WC	WC	Cattle
M56	M56	Muskrat, snowshoe hare

However, the avian strains can infect humans and other mammals, and can cause severe disease and even death. Secondary spread of the avian strains in humans has been known to occur but is not considered a major problem.

The diagnosis of AC or chlamydial infection is a problem because of the occurrence of persistent infections (4, 14). Isolation or demonstration of the organism by staining of smears or by polymerase chain reaction (PCR) is considered conclusive. Antibody titres are proof of a current or past infection, but do not prove an active infection unless a four-fold increase in humoral antibody titre is shown with paired sera, together with clinical signs. A tentative diagnosis of AC can be made in a flock which includes birds with clinical signs in addition to a high number of birds with high antibody titres.

Description of the disease

In birds, *C. psittaci* produces a systemic infection which varies according to the strain and the host. Typical clinical signs with a strain of high virulence include pneumoenteritis with respiratory signs, mucopurulent nasal discharge, diarrhoea, polyuria and dullness. Yellow-green droppings are common. Strains of low virulence will produce clinical signs that are similar but less severe and less extensive. Asymptomatic infections can occur with strains of both low and high virulence (5, 41).

Turkeys

Serovars A, B, D and E have produced outbreaks of disease in turkeys (3, 5). Serovar D is considered to be the most virulent, and produces morbidity of 50%-80% and mortality of 5%-30% or higher. The incubation period for serovar D in experimentally exposed turkeys is five to ten days. In birds exposed to low doses, or in older birds, the incubation period can be longer. The strains of low virulence (serovars A, B and E) usually have morbidity rates of 5%-20% and mortality of 1%-4% when infecting turkeys. Incubation periods can be highly variable and clinical signs are often not noticed until two to eight weeks after exposure.

Clinical signs

Clinical signs in turkeys infected with virulent strains are cachexia, anorexia and elevated body temperature. Yellow-green gelatinous droppings are often seen. Egg production in infected hens will decline rapidly and may cease temporarily or remain at a low level until the hen is completely recovered. The disease signs in turkeys that are infected with strains of low virulence are similar but less severe. The birds may be anorexic and have loose green droppings. The effect on egg production is less noticeable (5, 41).

Gross lesions

A number of pathogenesis studies of turkeys have investigated different serotypes and strains of *C. psittaci* in various lines of turkeys. For all strains, gross lesions are similar, with the more virulent strains producing more extensive and severe lesions. All avian strains produce lesions characteristic of a severe systemic disease that is not pathognomic. Some differences are apparent among strains, even within a given serovar, with some strains producing a more severe airsacculitis/lung involvement and others producing minimal airsacculitis/lung lesions and more cardiac involvement. Studies have shown that infection in the lateral nasal glands remained for weeks (5, 41).

The gross lesions commonly reported are enlargements of the spleen and liver, inflammation of serous membranes in the lungs and air sacs, and inflammation of the pericardium. The spleen is usually dark in colour and soft in consistency, and may be covered with grey-white necrotic foci or petechial haemorrhages. The liver is often enlarged, friable, and yellowish or green in colour with small necrotic foci on capsular or cut surfaces. Serous membranes and air sacs are often thickened and covered with fibrinous exudate. The lungs may or may not be congested. The pericardium may be thickened, congested and covered with a purulent serous or fibropurulent exudate (5, 41).

Domestic ducks

Avian chlamydiosis in domestic ducks has been important in Europe both economically and as a public health hazard. Avian chlamydiosis is usually a severe, debilitating and often fatal disease in young ducks (5). Ducks characteristically show trembling, an unsteady gait, anorexia and a serous or purulent discharge from the eyes and nares. Morbidity ranges from 10%-80% and mortality from 0%-30%, depending on the age of the ducks and presence of other diseases. During the 1990s, a number of outbreaks in ducks occurred in which clinical signs were minimal or absent. Despite the lower pathogenicity, these outbreaks were a public health problem and a large number of workers became clinically ill.

Aetiological agent

Avian chlamydiosis is caused by the bacterium *C. psittaci*. *Chlamydophila* is the new genus name adopted when the *Chlamydiaceae* family was divided into two genera (*Chlamydia* and *Chlamydophila*) (15). *Chlamydophila psittaci* is comprised of eight known serovars (5, 15). The serovars can be identified readily by the indirect fluorescent antibody (FA) test using serovar-specific monoclonal antibodies (1, 3), by PCR-restriction fragment length polymorphism (33, 35, 42), or by PCR-sequence analysis (15, 30). Determination of the serovar is important because the serovars are relatively host-specific, and hence identification can indicate the source of the isolate. Six of the eight known serovars of *C. psittaci* are considered endemic in birds. Five of the avian serovars (serovars A-E) are common and occur world-wide. Serovar F represents a single isolate from a psittacine bird (3). The other two serovars are M56, isolated from an outbreak in muskrats (*Ondatra zibethicus*), and WD, isolated from a cow.

The five serovars A-E are relatively host-specific (1, 3, 14, 39). Serovar A is routinely isolated from psittacine birds, in which it is associated with both acute and persistent infections. Persistently infected birds with a normal appearance are commonly identified. These birds will periodically shed chlamydiae both in faeces and in respiratory secretions. Serovar B appears to be primarily a pathogen of pigeons, in which it can produce an acute infection or a chronic infection with intermittent shedding. The low number of available serovar C isolates render determination of the host difficult; however, most of these isolates have been obtained from ducks or geese. Serovar D has been isolated from a number of birds, including egrets, gulls and turkeys. In turkeys, the serovar is highly virulent, with mortality of 30% or more being common. Due to the sporadic nature of the outbreaks of serovar D in turkeys and other birds, the natural host has not been determined. Serovar E has been isolated from a number of avian species. This serovar accounts for approximately 20% of pigeon isolates and for a number of turkey outbreaks of low virulence. Serovar E was the strain isolated from fatal cases of chlamydiosis in ratites (6). The natural host of this strain is not known, but is thought to be among wild birds because of the sporadic nature of the outbreaks.

Site of replication

Chlamydiae are known to produce systemic disease in birds. The route of infection is inhalation of airborne chlamydiae or ingestion of contaminated material. An experimental study using aerosol infection of turkeys resulted in infection of the lungs, air sacs and pericardial sac within 4 h. Within 48 h, chlamydiae were present in the blood, spleen, liver and kidney, and at 72 h in the bone marrow, testes or ovaries and muscle. Large numbers of chlamydiae were found in the nasal turbinates and cloaca (31). A recent study demonstrated that the lateral nasal glands may be a major site of replication and an important source of airborne chlamydiae, as these glands are the main source of moisture for the nasal mucosa. Long-term infections of these glands, as demonstrated by immunohistochemical findings, implicate these glands as a potential reservoir for chlamydiae (37).

Epidemiology

Avian chlamydiosis occurs world-wide. Chlamydiae are known to infect most species of domestic poultry, pet birds and wild birds (5, 12, 17, 41). Transmission is primarily from one infected bird to another. Infected birds shed chlamydiae in both the respiratory excretions and in faeces. A susceptible bird can become infected through inhalation of airborne contaminated material or through ingestion of contaminated feeds. Vertical transmission has also been demonstrated (5, 41).

Introduction of chlamydia into a new flock or area can be due to the introduction of persistently infected birds. Psittacine birds and pigeons are often subclinically infected and will periodically shed the organism. Persistent infections are also assumed to be common in other species of bird (5, 12, 41). Treatment with chlortetracycline (CTC) will temporarily halt shedding, but cannot be relied upon to cure persistent infections. Failure of treatment is common, and results in shedding of the organism at a later date.

The importance of vertical transmission in introducing chlamydia into a flock is not known. Vertical transmission has been described in chickens, ducks, parakeets, sea gulls and snow geese (41). The occurrence appears to be fairly low; however, an outbreak in a flock of ducks or turkeys can be started by a single infected chick. Vertical transmission also has the potential to introduce chlamydia into biologicals produced in eggs. This could be a problem in the production of attenuated live vaccine.

Chlamydia can also be introduced into a chlamydiae-free flock through the wild bird population. Chlamydia is known to be widespread in wild birds, having been demonstrated in over 150 species of birds representing fifteen orders (12, 13). The psittacine birds and the pigeon have the highest infection rates. A number of studies have found isolation rates over 10% and serological rates over 30%. The strains isolated from these wild birds are not thought to be normally pathogenic for these hosts, but the same strains can be highly pathogenic for domestic fowl and humans. In wild birds, these strains tend to produce persistent infections with periods of shedding.

Serotyping of isolates from wild birds and domestic poultry has been limited, but the available evidence does indicate a pattern of transmission from wild birds. In North America, wild birds are often infected with either serotype B or E, and these same serotypes have been found in domestic turkeys (1, 3). In a recent study in the USA, twelve cases of chlamydiosis in ratites located from Texas to California were all found to be due to serovar E (6). Many of the ratites were from small flocks with little or no contact with other ratites. Serovar E is known to have been present in North America long before the ratites were introduced, indicating high susceptibility in the ratites to a strain from a wild bird population. The highly virulent serovar D found in turkeys has also been reported from egrets and gulls, and the sporadic nature of the outbreaks in turkeys indicates that other birds may be carriers.

Contaminated feed and equipment can also be a source of infection, and feed should therefore be protected from wild birds. Careful cleaning of equipment is important as the organism can survive in faeces and bedding for up to thirty days. Cleaning and disinfection with most disinfectants and detergents will inactivate *C. psittaci*, as the bacterium has a high lipid content. Effective disinfectants include 1:1,000 dilution of quaternary ammonium compound, 70% isopropyl alcohol, 1:100 dilution of household bleach, and chlorophenols. *Chlamydophila psittaci* is susceptible to heat, but is resistant to acid and alkali (24).

Infected commercial birds pose a public health risk to both producers and slaughterhouse workers. Outbreaks have occurred in humans following exposure to ducks and turkeys during slaughter of infected birds. After slaughter, transmission to an employee in a rendering plant and to workers cutting up dressed turkeys has been documented (7, 21). However, transmission to consumers has never been reported.

Diagnostic methods

A number of diagnostic assays have been used to test for chlamydial infections in birds (4, 29). These assays show either the presence of chlamydia or the presence of antibody to chlamydia. The problem with antigen detection tests is that birds go through an active disease phase after which they either recover or remain chronically infected with intermittent periods of shedding of the pathogen. Shedding is known to occur in psittacine birds and pigeons (5, 24, 41) and is assumed to occur in other birds. Testing for antibody has similar problems, as antibody titres can be slow to respond, and differentiation between recovered and carrier birds is difficult. Antibody titres often decline rapidly, with the rate of decline depending on the test used.

Antigen detection

The detection of antigen can be performed by isolation, by enzyme-linked immunosorbent assay (ELISA), by PCR, or by direct staining of cytological smears. Isolation is considered to be the standard to which other antigen detection methods are compared. With correctly collected and handled samples, isolation will compare favourably in sensitivity with the other methods. Due to the lack of standardisation for some of the other methods, isolation should be considered when legal implications may exist. Histochemical and immunohistochemical staining of cytological smears are effective when high numbers of organisms are present, but a negative outcome is difficult to prove because small numbers of organisms may be present but undetected. The ELISA is rapid and requires little expertise, but lacks sensitivity. Polymerase chain reaction tests are now being used by some laboratories. However, most PCR tests are still experimental and need to be evaluated more extensively before being recommended.

Isolation

Isolation is the standard method for detection of antigen and is used by many laboratories to determine whether a bird is free of chlamydia. The procedure can be performed safely by most laboratories and is relatively sensitive. Isolation can be performed in either embryonated eggs or tissue culture. However, special handling of the samples and equipment is required for the protection of laboratory personnel. Care must be taken to collect fresh faecal samples and to store these correctly. Fresh samples are important, as drying greatly reduces the viability of chlamydia. A special buffer consisting of sucrose, phosphate and glutamase (SPG) is the preferred diluent for transporting, storing and freezing the samples (36).

Limited samples are available from live birds. Faecal samples have been the standard because these are relatively easy to obtain and because of the belief that the primary route of transmission was by contaminated faecal material. Recent studies have shown that pharyngeal swabs will detect a higher number of positive birds. However, since a given sampling site will not detect all positive birds, collection of pharyngeal swabs, cloacal swabs and faecal samples is recommended (2). As birds can shed chlamydia intermittently, sample collection should be repeated over a number of days.

Cell lines are the most common and convenient method for the isolation of the avian strains. The most frequently used cell lines are buffalo green monkey (BGM), McCoy, HeLa, Vero and L-929, although other cell lines can be used. The BGM cells are the most sensitive, with Vero and L-929 considered satisfactory (4, 38). Standard cell culture medium containing 5%-10% foetal calf serum is used with antibiotics that do not inhibit the growth of chlamydiae.

The available laboratory equipment and supplies will determine the type of vessel used to grow the cell culture monolayers for inoculation. The equipment and vessel must be suitable for several functions, the most important of which is to protect laboratory personnel from exposure. The equipment must also permit the centrifugation of the inoculum onto the monolayer, permit identification of inclusions in the monolayer by direct FA or other appropriate techniques, and permit examination on multiple occasions and repassage of the sample if necessary. Satisfactory vessels are multiple small flat-bottomed vials with coverslips or multiple multiwell cell culture dishes (4).

Polymerase chain reaction test

Polymerase chain reaction techniques have been used to detect chlamydia in birds (4, 22, 26, 30). The technique has promise as a rapid and sensitive diagnostic tool, but to date, adequate comparisons with isolation are not available. The PCR test which is used to detect *Chlamydia trachomatis* in humans is highly specific and sensitive. This test detects a plasmid that is present only in *C. trachomatis* strains. The tests being developed for *C. psittaci* detect the major outer membrane protein genome and are very specific. To improve sensitivity, tests are being designed to target a relatively short deoxyribonucleic acid (DNA) fragment or to use a nested procedure. Tests are also being developed to target the intergenic spaces, regions between the 16S and 23S ribosomal ribonucleic acid (RNA) genes (16).

Enzyme-linked immunosorbent assay

The ELISA, a relatively new technique for demonstrating antigen, has been promoted in kit form for use with samples from humans. The assay detects the lipopolysaccharide (LPS) and will detect all species of chlamydia. However, these assays lack sensitivity, as a few hundred organisms are needed to give a positive reaction. Enzyme-linked immunosorbent assays are best used in birds which are showing clinical signs (9, 40).

Staining of smears

Histochemical and immunohistochemical staining of impression smears have been used extensively. This technique is rapid and inexpensive; however, a trained technician is required to interpret the results. Staining of smears is best used in birds showing clinical signs and is not recommended for use in screening individual birds (4, 9, 29).

Antibody detection

Serological detection in the host

A diagnosis of chlamydiosis can be made by serology if the aetiological agent cannot be isolated (4, 29). Diagnosis is made from a four-fold rise in antibody titre on serial bleedings or bleeding during the acute and convalescent stages of the disease. A presumptive diagnosis can be made on a flock if clinical signs typical of the disease are present and if the majority of the birds have titres of 1:64 or higher by the complement fixation (CF) test. Some of the newer serological tests that detect primarily immunoglobulin M (IgM), allow a presumptive diagnosis to be made, based on a positive reaction (18).

Complement fixation test

When testing avian sera, the most widely used serological test is the CF. The CF test detects antibody to the LPS, a chlamydial group antigen. The presence of antibody to LPS is a good indicator of a recent infection. To detect active infections, paired sera (acute and convalescent) with a four-fold rise in titre are required. Methods for performing the CF test vary greatly. The direct or modified direct CF tests are the most common. The modified direct CF test differs from the direct CF test in that normal unheated chicken serum is added to the complement dilution. The normal serum increases the sensitivity of the CF test procedure so that it can be used to test avian sera for antibodies that do not normally fix guinea-pig complement.

Other serological tests

Alternative serological tests have been developed recently and are in limited use. The most promising of these is the elementary body agglutination (EBA) test (20) and the latex agglutination (LA) test (8, 19), as these give a better indication of a current or recent infection. The EBA test detects IgM only and is indicative of a current infection. The LA test detects both IgM and IgG (18). In addition, an ELISA for the detection of antibodies has been reported; however, specificity can be a problem with this test (4).

Public health implications

The avian strains of chlamydia can infect humans, and hence infected birds or contaminated material should be handled carefully. The disease in humans varies from a flu-like syndrome to a severe systemic disease with pneumonia and encephalitis. The disease is rarely fatal in patients treated correctly; therefore, awareness of the danger and early diagnosis are important. Infected humans typically develop headache, chills, malaise and myalgia, with or without signs of respiratory involvement. Pulmonary involvement is common, but auscultatory findings may appear to be normal or to underestimate severity (24).

Care should be taken in handling infected birds, as most infections occur through inhalation of contaminated airborne particulates. Infected birds secrete chlamydia in both respiratory secretions and in faeces. Psittacine birds are the major source of human infection, but outbreaks due to exposure to non-psittacine birds also occur. The more common of these are due to exposure to pigeons, both wild and domestic, and to commercially raised ducks and turkeys. Avian chlamydiosis in humans must be considered an occupational disease, with pet bird handlers, veterinarians and poultry workers exposed to the greatest risk. Infections in slaughterhouses are a problem and usually involve workers in the eviscerating area. However, a case has been documented in which the worker was performing further processing of the infected birds in another plant (21). Transmission from human to human is usually not a problem but can occur. Transmission from humans to birds has not been documented.

Prevention and control methods

Prevention and control are dependent on careful production management and on the appropriate use of antibiotics during an outbreak. Currently, the source of infection in most outbreaks in commercial poultry flocks is unknown. The practice of all-in-all-out confinement, with cleaning and disinfection between flocks, addresses the environmental contamination problem and should break the cycle of transmission by carrier birds. Vertical transmission has been documented, but has never been proven as the source of an outbreak. Wild birds and rodents are other potential sources. Rodents can be infected but have never been demonstrated to be carriers. In well-managed confinement operations, wild birds should be excluded by screening. Research is required on the possibilities of vertical transmission within domestic species and of carrier states in domestic birds, wild birds and rodents. Additional research is needed to determine the role of each of these in perpetuating the disease in the field.

Antibiotic treatment

Chlortetracycline is the antibiotic of choice in both commercial poultry and pet birds (5, 24). The drug is relatively inexpensive and can be administered by adding to the feed. Currently, this treatment is highly effective in preventing further losses and shedding of the organism. Chlortetracycline is often used in quarantine stations to control chlamydiosis and prevent shedding. Chlortetracycline is also used in the poultry industry prior to slaughter if chlamydiosis is suspected in a flock. The problem with CTC is that the drug is primarily bacteriostatic, and a thirty-day treatment often results in some carrier birds that can later serve as a source of infection. In addition, some birds refuse to eat the amount of feed necessary to attain therapeutic levels of CTC in the blood. Resistance to CTC in the avian strains has been reported, but does not appear to be a problem (23).

Vaccine development

No commercial vaccine is available for AC. In turkeys, Page was successful in producing a cell-mediated response that protected 90% of the turkeys against challenge (32). For best results, two doses of the vaccine were administered eight weeks apart. Development of the vaccine was not pursued because of the need for two doses to produce reasonable protection. Recently, a plasmid DNA vaccine against the major outer membrane protein was shown to give protection in turkeys (43, 44, 45). The antibody response following vaccination was low; however, following challenge, evidence was found of priming of the immune cell memory by the vaccine and a significant level of protection resulted. Both the level of protection afforded by a vaccine and the cost will determine whether immunisation of large numbers of birds is practised for the prevention of the occasional epidemic of chlamydial infection.

Import recommendations

The serovars of *C. psittaci* that cause avian chlamydiosis in domestic poultry occur world-wide. These serovars have also been isolated widely from wild birds. Persistent infections in fowl are common. As shedding in persistently infected birds is usually intermittent, detection can be difficult with current techniques. Vertical transmission has been documented but is not considered to be a major factor in transmission. Meat products have been implicated in human infections when further processing has been performed immediately following slaughter of infected birds, but consumers have not been affected. Due to the widespread distribution of the agent and because infection is primarily a public health threat to poultry workers and slaughter house employees, testing and health requirements for importation of poultry and poultry products should be the same as required by the importing country for movement or slaughter of poultry within that country.

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Chlamydiose aviaire

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Résumé

La chlamydiose aviaire peut avoir des conséquences économiques dévastatrices pour les élevages et être à l'origine de graves problèmes de santé publique. La plupart des infections chez l'homme sont dues à l'exposition à des psittacidés et des pigeons ; cependant, des formes graves, voire mortelles de chlamydiose ont été observées chez des ouvriers travaillant dans des abattoirs ayant reçu des animaux infectés. La maladie se déclare essentiellement chez les dindes et les canards, mais aucun type de volaille n'est épargné. Chez les volailles, l'infection peut se présenter sous plusieurs formes, allant d'une morbidité et une mortalité élevées à des cas totalement asymptomatiques. Il y a un risque de contamination pour le personnel travaillant dans les élevages ou les abattoirs, qu'il soit exposé à l'un ou l'autre de ces cas extrêmes. Les épizooties de chlamydiose aviaire ont diminué depuis les années 1970, mais l'incidence de la maladie est, aujourd'hui, en augmentation dans certaines régions du monde. On ignore encore si le déclin initial s'explique par une modification des méthodes de production ou par un recours plus large aux antibiotiques. Le mécanisme d'introduction de la maladie dans un élevage ou une région n'est pas encore bien élucidé. On attribue aux oiseaux sauvages un rôle majeur car ils sont souvent infectés par les mêmes souches que les espèces domestiques. D'après certaines données, il pourrait y avoir également une transmission verticale. On sait que les oiseaux porteurs d'une infection persistante sont une source de chlamydiose chez les oiseaux de volière, mais leur rôle en tant que source d'infection dans les élevages de volailles n'a pas été confirmé.

Mots-clés
Canards – Chlamydia – Chlamydophila – Dindons – Maladies aviaires – Oiseaux de basse-cour – Poulets – Volailles.

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Clamidiosis aviar

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Resumen
La clamidiosis aviar no sólo puede tener consecuencias económicas desastrosas para los productores sino también convertirse en un grave problema de salud pública. Aunque en el hombre la mayoría de las infecciones se deben a la exposición a aves y palomas afectadas de psitacosis, el procesamiento de bandadas infectadas en los mataderos da lugar también a brotes entre trabajadores y provocan casos graves de enfermedad, e incluso a veces la muerte. Aunque puede afectar a todo tipo de aves de corral, la enfermedad se ceba sobre todo en pavos y patos. Sus manifestaciones en las aves de corral son variables, desde una forma asintomática hasta otra causante de elevadas tasas de morbilidad y mortalidad. En ambos extremos hay sendos grupos de personas en peligro de exposición: los trabajadores de las explotaciones y los de los mataderos. Aunque los brotes de clamidiosis aviar han ido decreciendo desde los años setenta, algunas partes del mundo asisten ahora a un recrudecimiento de su incidencia. Se ignora si el descenso inicial obedece a la evolución de los sistemas productivos o al mayor uso de antibióticos. Tampoco se entiende exactamente el mecanismo por el cual la enfermedad se introduce en una zona o una bandada. Se sospecha que las aves silvestres desempeñan un papel importante en ese mecanismo, dado que a menudo se encuentran infectadas por las mismas cepas que afectan a las bandadas domésticas. Los datos existentes indican que la transmisión vertical es posible. Aunque se sabe que las aves portadoras de infección persistente son fuente de clamidiosis en el sector de la cría de aves enjauladas, no se ha confirmado que ocurra lo mismo en el sector de la industria avícola.

Palabras clave
Aves de corral – Chlamydia – Chlamydophila – Enfermedades aviares – Gallináceas – Patos – Pavos – Pollos.

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