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IMMUNOLOGICAL AND MOLECULAR IDENTIFICATION OF *CHLAMYDIA PSITTACI* IN SOME PET BIRDCAGE OFZOOLOGICAL SHOP IN AL-QADISIYAH GOVERNORATE

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ABSTRACT : The study was carried out by using a sample made up of 90 pet birds, to investigatethe *Clamydiapsittaci* in blood and Cloacae samples, in order to Inter-rater homogeneity of the ImmunoComb (IC) assay compared with detection of fecal *Chlamydia psittaci* DNA via the Polymerase chain reaction in some pet bird cages of zoological shop in Al-Qadisiyah governorate, the blood samples were tested by ImmunoComb immunoassay, while the Cloacae swabs were used by polymerase chain reaction. The results show that 32 (35.5%) isolates belonging to the species C. *psittaci* were isolated from a total of 90 bacterial isolates, in the same time this ratio was also used to find out that most cases of C. *psittaci*were in asymptomatic birds (P<0.05), on the other hand, there were strength of agreement and excellent agreement between ImmunoComb (IC) and PCR assays (kappa coefficient values were 0.815 with confidence interval 0.0693 to 0.937.

Key words : *Chlamydia psittaci*, pet bird, ImmunoComb (IC), PCR.

INTRODUCTION

The Chlamydiae are obligate intracellular gram-negative bacteria incapable of obtaining energy by metabolic activities. Their life cycle alternates between noninfectious proliferative stages and infectious non-proliferative stages. There are four species of Chlamydia: *C. trachomatis* causes human venereal, ocular, and respiratory infections; C. *psittaci* affects many mammals including humans and birds; C. *pneumoniae* causes human respiratory infections; *C. pecorum* causes encephalitis, polyarthritis, and enteritis in cattle, sheep, and pigs.

Chlamydia psittaci is recognized worldwide in most animal species that have been adequately studied. Birds may become infected in the nest via feeding activity of parents to the young or by fecal contamination of the nest site (Harkinezhad *et al*, 2009); Clinical signs of *C. psittaci* infection in birds are variable (Lierz 2005) and ranges from none to mild respiratory disease to a severe multisystemic (MST), often fatal disease (Phalen 2006). However, commensal intestinal carriage and latent infections are common in infected birds. Infected Pet birds, regardless of clinical history, can excrete the organism in high concentration for indefinite periods and constitute significant reservoirs of infection. There are a number of different testing modalities available.

The ImmunoComb test kit for Chlamydia psittaci antibody determination in psittacine birds was developed in 1993, otherwise, Polymerase chain reaction (PCR) testing is an excellent method of detecting *C. psittaci* infection (Phalen 2006) and this test is commercially available in the UK. The test is highly specific and very sensitive. (Vanrompay 2000). PCR compares favourably with (antigen) ELISA and cell culture or by ELISA alone (Hewinson *et al*, 1997). The aim of this study presents further data demonstrating the inter-rater homogeneity of the ImmunoComb (IC) assay, compared with detection of fecal Chlamydia psittaci DNA via the Polymerase chain reaction in some pet bird cage of zoological shop in Al-Qadisiyah Governorate.

MATERIALS AND METHODS

Ethics statement

This experiment was approved by Veterinary medicine Animal Care and Animal Ethics Committees, College of veterinary Medicine, University of Al-Qadissyia, Iraq.