BRIEF COMMUNICATIONS AAEM
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DETECTION OF *CHLAMYDOPHILA PSITTACI* ANTIBODIES FROM CAPTIVE BIRDS AT THE NINOY AQUINO PARKS AND WILDLIFE NATURE CENTER, QUEZON CITY, PHILIPPINES

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Abstract: The present study was undertaken to detect the presence of *Chlamydophila psittaci* antibodies in captive birds at the Wildlife Rescue Center, Ninoy Aquino Parks and Wildlife Nature Center, Quezon City, Philippines. Blood was collected from 36 birds of different species and the presence of antibodies against *C. psittaci* was detected using an ELISA-based test kit. 25% of the samples demonstrated antibodies against *C. psittaci*. The results of this study confirmed the presence of *C. psittaci* antibodies among the captive birds examined.

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INTRODUCTION

Psittacosis or ornithosis is a zoonotic respiratory disease caused by a parasitic bacterium *Chlamydophila* (*Chlamydia*) *psittaci* [7]. The disease is characterized by fever, watery-green diarrhea, anorexia, emaciation, respiratory distress and conjunctivitis in birds [1]. It is classified as an occupational disease with man often as an accidental host through exposure to carrier animals. Veterinarians, aviary and pet shop workers are potentially at risk as well as wildlife park visitors and those who rear birds as pets. The disease in humans may vary, from asymptomatic infections to mild influenza-like illness to severe pneumonia with involvement of several extra-pulmonary organs [5, 8].

In the Philippines, the presence of *C. psittaci* has been demonstrated through detection of antibodies from test animals although this study was undertaken a long time ago. Arambulo (1971) detected the presence of antibodies against *C. psittaci* among several species of birds in Manila and Bulacan using the direct complement fixation test (CFT) [2]. In addition, Asai *et al.* (1991) demonstrated antibodies against *C. psittaci* in 13 out of 147 (9%) crab-eating monkeys (*Macaca fascularis*) imported from the Philippines, also by using direct CFT [3].

Although, to the best of our knowledge, the presence of the disease in humans has not been reported in the Philippines, previous studies suggesting the presence of *C. psittaci* among domestic and wildlife species may suggest the possibility of transmission to humans.

The fact that birds play an important role in the transmission of the disease to humans means that studies such as this would be very valuable in determining the status of the disease in animals. This study was conducted to detect antibodies against *C. psittaci* from captive birds at the Wildlife Rescue Center (WRC), NAPWNC, Philippines using an ELISA test kit.

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Table 1. Prevalence of *Chlamydophila psittaci* antibodies from captive birds at the Ninoy Aquino Parks and Wildlife Nature Center, Philippines.

Species	Total population	Number of animals		Combscale Scores[a]
		Tested	Positive	
Psittacines				
Psittacula krameri	22	2	1	2
Cacatua galerita	8	1	1	2
Eclectus roratus	3	2	1	1
Cacatua sp.	44	5	2	1,1
Lorius sp.	20	2	1	4
Raptors				
Spilornis cheela	8	2	0	0
Tyto capensis	9	2	0	0
Bubo philippensis	4	2	0	0
Haliastur indus	40	6	1	1
Spizaetus philippensis	5	5	2	1,1
Others				
Corvus enca	1	1	0	0
Gracula religiosa	2	2	0	0
Anthracoceros marchei	1	1	0	0
Byceros hydrocorax	3	3	0	0
Total	170	36	9	–

[a]combscale score based on the immunocomb® ELISA kit (1-2 (low positive); 3-4 (positive); 5-6 (high positive)

MATERIALS AND METHODS

A total of 36 captive birds, 2 per cage, from WRC, NAPWNC, Diliman, Quezon City, Philippines, were used as a sample population (Tab. 1). The birds that were randomly selected appeared to be healthy upon physical examination and were approximately more than 5 months of age. With the bird properly restrained, the wings were carefully unfolded to expose the wing vein. In some cases, when the wing veins were small, the medial metatarsal vein was used in blood collection. About 0.1ml of blood was drawn using sterile 1 ml syringes with 25 gauge needle. Collected blood was used to saturate the pre-punched filter paper discs included in the ELISA kit. The discs were then air-dried prior to testing.

The ELISA test kit for avian *C. psittaci* (Immunocomb®, Biogal, Kibbutz Galed, Israel) is based on a rapid competitive enzyme-linked immunosorbent assay technique that detects immunoglobulin G-antibodies (IgG) against *C. psittaci* in avian species. The manufacturer's directions were followed in running the ELISA test. Results were read by comparing the shade of grey of the test result with that on the combscale card. Samples having a color similar to the combscale pattern of the kit from a combscale reading of 1-6 were considered positive, with a reading of 1 as low positive, and 6 as high positive.

RESULTS AND DISCUSSION

C. psittaci bacteria, which are avian strains, can be transmitted to humans usually by inhalation of infected dust [6]. The infection may pass asymptomatically or may be manifested in the form of an influenza-like illness to severe pneumonia with other multisystemic disease [1, 5, 8]. Because of this, it is very important to determine the occurrence of this organism in the avian population, as this may be an important source of human infections particularly in the Philippines where recent investigation on this organism is lacking.

The complete results of the detection of antibodies against *C. psittaci* using the ELISA test kit are presented in Table 1. From a sample population of 36, a total of nine (25%) demonstrated antibodies against *C. psittaci*; six (16.7%) of which are psittacines and three (8.3%) are raptors. Six birds have a combscale score of 1(low positive), two showed a rating of 2 (low positive), and one bird recorded a combscale score of 4 (positive). These results indicated that these birds may have been exposed to *C. psittaci*. In the present study, it was observed that the cages of psittacines in the park were situated next to each other and many birds are housed together in one cage. This may contribute to the high carrier rate and occurrence of the organism in this species of birds. Raptors, on the other hand, are generally caged individually or in small groups.

As this is a public park, the people frequenting the area as well as visitors might be at some risk of contracting the organism. It should be noted that with even a brief exposure to infected birds the organism may be transmitted to humans and can cause disease [5, 8]. The fact that these birds are popular as pets and in animal shows, psittacosis has become an important public health concern [4]. Results of this study confirmed the presence of *C. psittaci* antibodies among the captive birds examined. These birds could be an important source of infection for other animals and more importantly for humans. It is recommended that the results gathered from this initial study should be verified through further serological testing and isolation of the organism among the birds tested.

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INTERNATIONAL MEETINGS

3-5 July 2007, Lille, France. *First European Forum on Effective Solutions for Managing Occupational Noise Risks.* **Contact:** France Institute of Noise Control Engineering of Europe; www.noiseatwork.eu

15-19 July 2007, Montréal, Canada. XI International Congress of Toxicology: *Toxicology: Discovery Serving Society*. **Contact:** www.ict2007.org

16-18 July 2007, Washington, USA. *The Public Health Congress.* **Contact:** www.worldcongress.com/events/NW701/?confCode=NW701

24-28 July 2007, Singapore. *XVIII Wonca World Conference: Human Genomics and its Impact on Family Physicians.* **Contact:** rccfps@pacific.net.sg

13-17 August 2007, Galway, Ireland. *17th International Conference on Nucleation and Atmospheric Aerosols.* **Contact:** www.icnaa.org

22-24 August 2007, Boston, USA. *6th International Scientific Conference on Prevention of Workrelated Musculoskeletal*. **Contact:** www.premus2007.org/contact.htm

23-26 August 2007 Budapest, Hungary. *International Congress on Stress*. **Contact:** www.stress07.com

26-29 August 2007, Kaohsiung, Taiwan. *5th Asian Aerosol Conference*. **Contact:** www.aac2007.org.

27-29 August 2007, Elsinore, Denmark. NIVA course: *Reading and Writing Review Articles in Occupational Epidemiology.* **Contact:** www.niva.org/courses/2007/ab_27_29_08_07.htm

28-31 August 2007, Yeppoon, Australia. 18th International Symposium on Shiftwork and Working Time: *Ageing and working hours: creating safe environments.* **Contact:** ICOH Scientific Committee on "Shiftwork and Working Time" and Working Time Society.

29 August-1 September 2007, Taipei, Taiwan. *3rd International Symposium on Nanotechnology, Occupational and Environmental Health.* **Contact:** nano-taiwan.sinica.edu.tw/EHS2007/index.htm

2-6 September 2007, Paris, France. *International Conference on Environmental Epidemiology & Exposure: Science, Population diversity, Caution and Precaution.* **Contact:** www.paris2006.afsset.fr

7-10 September 2007, Barcelona, Spain. *6th Interdisciplinary World Congress on Low Back & Pelvic Pain.* **Contact:** www.worldcongresslbp.com

9-11 September 2007, Tampere, Finland. *11th International Conference on Combined Actions and Combined Effects of Environmental Factors.* **Contact:** The International Society for Complex Environmental Studies; www.worklifeability.fi/iccef.shtml

9-14 September 2007, Salzburg, Austria. *European Aerosol Conference.* **Contact:** www.aerosol-soc.org.uk/

10-11 September 2007, Arlington, USA. *WorkLife 2007: Preserving and Promoting Worker Health.* **Contact:** National Institute for Occupational Safety and Health; www.cdc.gov/niosh/worklife/

10-12 September 2007, Beijing, China. *7th International Symposium on Biological Monitoring in Occupational and Environmental Health.* **Contact:** www.isbm2007.org

10-15 September 2007, Moscow, Russia. 2nd Immune Mediated Diseases Congress: *Immune Mediated Diseases: Better Life through Immunology.* **Contact:** www.gtcbio.com/newsletter/imd2-w.htm

17-18 September 2007, Vancouver, Canada. CCOHS Forum 2007: *Emerging Health and Safety Issues from Changing Workplaces*. **Contact:** Canadian Centre for Occupational Health & Safety; www.ccohs.ca

24-27 September 2007, Gentofte, Denmark. 5th International course: *Occupational Skin and Airway Allergies – Exposure, Risk Assessment and Prevention.* **Contact:** www.niva.org/courses/2007/24_27_09_07.htm

3-6 October 2007, Sønderborg, Denmark. NIVA course: *Occupational Indoor Air Problems Caused by Mould.* **Contact:** http://www.niva.org/courses/2007/03_06_10_07.htm

9-12 October 2007, Banff, Canada. 19th International Conference on Epidemiology in Occupational Health: *Frontiers of Occupational Epidemiology.* **Contact:** International Commission of Occupational Health; www.epicoh2007.ca

11-13 October 2007, Helsinki, Finland. Annual EUPHA Conference: *The Future of Public Health in the Unified Europe*. **Contact:** European Public Health Association; www.eupha.org/html/menu3_3.html

12-14 October 2007, Madrid, Spain. *Perspectives in Interpandemic Influenza.* **Contact:** www.perspectivesininfluenza.com

18-23 October 2007, Nanjing, China. *4th International Conference on Soils of Urban, Industrial, Traffic and Mining Areas.* **Contact:** Institute of Soil Science, Chinese Academy of Sciences; www.issas.ac.cn/suitma4.htm/

26-28 October 2007, Vancouver, Canada. American College of Occupational and Environmental Medicine: *State-of-the-Art Conference*. **Contact:** www.acoem.org/sotac.aspx

27-31 October 2007, El-Minia, Egypt. *8th African Crop Science Society Conference.* **Contact:** Faculty of Agriculture, www.acss2007.org

28-31 October 2007, Torino, Italy. *3rd Trends in Medical Mycology.* **Contact:** www.TIMM2007.org

2-6 December 2007, Bangkok, Thailand. *XX World Allergy Congress.* **Contact:** World Allergy Organization; www.wac2007.com/index.cfm

3-5 December 2007, Helsinki, Finland. European NanOSH Conference - Nanotechnologies: *A Critical Area in Occupational Safety and Health.* **Contact:** Finnish Institute of Occupational Health.

29-31 May 2008, Cracow, Poland. *5th International Conference on Work Environment and Cardiovascular Disease.* **Contact:** International Commission of Occupational Health (ICOH) & Nofer Institute of Occupational Medicine (NIOM); alab@sunlib.p.lodz.pl

29 June-2 July 2008, Seoul, Korea. *XVIII World Congress on Safety and Health at Work.* **Contact:** www.safety2008korea.org

17-22 August 2008, Copenhagen, Denmark. *Indoor Air 2008.* **Contact:** www.indoorair2008.org

22-27 March 2009, Cap Town, South Africa. *29th International Congress on Occupational Health.* **Contact:** www.icoh2009.co.za

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