

aeruginosa [5], this is the first study that suggests the presence of 1,3- β -D-glucan in this bacterial species.

Our findings suggest that the Fungitell assay cross-reacts with bacterial 1,3- β -D-glucans of *P. aeruginosa* and that this might result in positive test results in patients with bacteremia due to this bacteria. Because the Fungitell assay is increasingly used to diagnose invasive fungal infection in immunocompromised patients, it is important for physicians to be aware of the potential cross-reactivity with *P. aeruginosa*, which are bacteria that can cause rapidly lethal infection in this patient group.

Acknowledgments

Potential conflicts of interest. All authors: no conflicts.

**Monique A. S. H. Mennink-Kersten,
Dorien Ruegebrink, and Paul E. Verweij**

Department of Medical Microbiology,
Radboud University Nijmegen Medical Center,
Nijmegen, The Netherlands

References

1. Digby J, Kalbfleisch J, Glenn A, Larsen A, Browder W, Williams D. Serum glucan levels are not specific for presence of fungal infections in intensive care unit patients. *Clin Diagn Lab Immunol* **2003**; 10:882–5.
2. Mennink-Kersten MA, Verweij PE. Non-culture-based diagnostics for opportunistic fungi. *Infect Dis Clin North Am* **2006**; 20:711–27.
3. Mennink-Kersten MA, Warris A, Verweij PE. 1,3- β -D-glucan in patients receiving intravenous amoxicillin-clavulanic acid. *N Engl J Med* **2006**; 354:2834–5.
4. Pickering JW, Sant HW, Bowles CA, Roberts WL, Woods GL. Evaluation of a (1 \rightarrow 3)- β -D-glucan assay for diagnosis of invasive fungal infections. *J Clin Microbiol* **2005**; 43:5957–62.
5. Lequette Y, Rollet E, Delangle A, Greenberg EP, Bohin JP. Linear osmoregulated periplasmic glucans are encoded by the *opgGH* locus of *Pseudomonas aeruginosa*. *Microbiology* **2007**; 153:3255–63.

Reprints or correspondence: Dr. Monique A. S. H. Mennink-Kersten, Dept. of Medical Microbiology, Radboud University Nijmegen Medical Center, PO Box 9101, 6500 HB Nijmegen, The Netherlands (monique.mennink@gmail.com).

Clinical Infectious Diseases 2008;46:1930–1

© 2008 by the Infectious Diseases Society of America. All rights reserved. 1058-4838/2008/4612-0022\$15.00
DOI: 10.1086/588563

Local Newspaper as a Diagnostic Aid for Psittacosis: A Case Report

TO THE EDITOR—On 15 June 2007, the local newspaper reported an outbreak of psittacosis in an aviary located in a public park in Lausanne, Switzerland. On 18 June, a 62-year-old man visited his family doctor because of a 24-h history of isolated high-grade fever. The findings of a clinical examination were normal, and the patient received treatment for his symptoms. Four days later, the fever persisted, and diarrhea appeared. Gastroenteritis was suspected, and ciprofloxacin was prescribed, which was followed by clinical improvement.

One week later, the patient told his neighbor, a medical doctor, about his febrile illness. Because the neighbor had read the local newspaper and knew that the patient was an employee of a veterinarian institute, he suspected *Chlamydophila psittaci* infection. Indeed, in early June 2007, the patient had dissected a dead Amazon parrot from the public park without wearing a mask. The patient was referred in July to our infectious disease outpatient clinic. A diagnosis of *C. psittaci* infection was supported by a significant reactivity to *C. psittaci* IgG antibody (titer, 1:256; a positive titer is \geq 1:64). Results of IgM antibody tests were negative. To confirm this diagnosis, we tested a serum sample drawn on 13 June for the purpose of a blood donation, 4 days before the febrile episode and 1 week after the professional exposure; test results for this sample were negative for *C. psittaci* IgG and slightly positive for IgM (titer, 1:20; a positive titer is \geq 1:20). These results documented *C. psittaci* seroconversion and confirmed the diagnosis of a professional acquisition of psittacosis. Of interest, the spleen of the dead Amazon parrot was confirmed to be positive for *C. psittaci* by both PCR and sequencing (100% homology of 16S rRNA sequence with *C. psittaci*) and by immunohistochemistry.

Professional transmission of *C. psittaci*

has been described in veterinarians [1, 2], duck processors [3], and turkey-industry workers [4]. However, a local newspaper has not previously been reported to be a major diagnostic aid in the diagnosis of psittacosis. This case highlights the importance of being aware of local epidemiology, particularly with regard to transmissible infectious disease. It also highlights the importance of taking an accurate history of professional and/or occupational exposures. If the family doctor had read the local newspaper and had inquired about his patient's habits, he might have suspected this diagnosis at the first visit. This is especially important, because psittacosis is unlikely to be diagnosed in a patient with febrile illness without pneumonitis. In a series of 46 cases of psittacosis, headache, chills, and fever were the most common symptoms (occurring in 96%, 93%, and 89% of patients, respectively); a nonproductive cough occurred in 65% of patients [5]. In another series of 136 cases of psittacosis, respiratory symptoms were absent in 18% of patients, and diarrhea and sore throat were occasional complaints [6]. A history of bird exposure thus remains the best indicator to suspect the diagnosis of psittacosis.

This case also highlights the importance of using routine biosecurity measures (i.e., a mask or laminar flow hood) to process dead birds. Such biosecurity measures are mandatory to prevent avian influenza. They are also important for avoidance of exposure to psittacosis, an infection that can be severe.

Acknowledgments

We thank Dr. Jean-Daniel Tissot for providing the anterior serum, the Institut für Klinische Mikrobiologie und Immunologie for performing the serological analysis, Sébastien Aeby for technical help to confirm the presence of *C. psittaci* in the parrot by PCR, Andreas Pospischil for performing immunohistochemical analysis of the spleen of the parrot, and Dr. Philip E. Tarr for critical reading of the manuscript.

Potential conflicts of interest. All authors: no conflicts.

References

- Heddema ER, van Hannen EJ, Duim B, et al. An outbreak of psittacosis due to *Chlamydo-phila psittaci* genotype A in a veterinary teaching hospital. *J Med Microbiol* 2006;55:1571–5.
- Harkinezhad T, Verminnen K, Van Droogenbroeck C, Vanrompay D. *Chlamydo-phila psittaci* genotype E/B transmission from African grey parrots to humans. *J Med Microbiol* 2007;56:1097–100.
- Newman CP, Palmer SR, Kirby FD, Caul EO. A prolonged outbreak of ornithosis in duck processors. *Epidemiol Infect* 1992;108:203–10.
- Hedberg K, White KE, Forfang JC, et al. An outbreak of psittacosis in Minnesota turkey industry workers: implications for modes of transmission and control. *Am J Epidemiol* 1989;130:569–77.
- Kuritsky JN, Schmid GP, Potter ME, Anderson DC, Kaufmann AF. Psittacosis: a diagnostic challenge. *J Occup Med* 1984;26:731–3.
- Yung AP, Grayson ML. Psittacosis—a review of 135 cases. *Med J Aust* 1988;148:228–33.

Reprints or correspondence: Dr. Gilbert Greub, Center for Research on Intracellular Bacteria, Institute of Microbiology, University of Lausanne, Lausanne, Switzerland (gilbert.greub@chuv.ch).

Clinical Infectious Diseases 2008;46:1931–2

© 2008 by the Infectious Diseases Society of America. All rights reserved. 1058-4838/2008/4612-0023\$15.00
DOI: 10.1086/588562

Multidrug-Resistant *Klebsiella pneumoniae* Mediastinitis Safely and Effectively Treated with Prolonged Administration of Tigecycline

TO THE EDITOR—A recent article in *Clinical Infectious Diseases* reported the clinical and microbiological outcomes of 18 multidrug-resistant (MDR) gram-negative infections treated with tigecycline [1]. We report our experience with a case of mediastinitis caused by an MDR metallo- β -lactamase-producing *Klebsiella pneumoniae* that was treated with prolonged administration of tigecycline.

A 55-year-old morbidly obese and diabetic man was transferred to our intensive care unit after receiving a diagnosis

of postsurgical mediastinitis after 3-vessel coronary artery bypass grafting. Cultures of adipose tissue samples and 4 different sternum samples (manubrium, body, xiphoid, and sternum bone marrow) yielded a *K. pneumoniae* isolate in pure and heavy growth. The organism exhibited an MDR phenotype; it was resistant to all aminoglycosides, fluoroquinolones, and β -lactams (including carbapenems) and to trimethoprim-sulfamethoxazole, but it remained susceptible to colistin, tetracycline, and tigecycline. The MIC of tigecycline was 0.5 $\mu\text{g}/\text{mL}$ by both Etesting (AB BIODISK) and the standard agar dilution method. Molecular testing revealed that the isolate produced the *bla*_{VIM-1} metallo- β -lactamase gene in a class 1 integron. Colistin was not used because of mild renal function impairment, and tigecycline therapy became mandatory. A loading dose of 100 mg was given intravenously, followed by 50 mg given intravenously 2 times per day. After 1 week of tigecycline therapy in addition to intensive daily wound care and vacuum-assisted drainage [2], sternum culture results were still positive, and the patient had generalized edema (anasarka) and a marked decrease of myocardial function (ejection fraction, <30%).

Over the next few days, the wound began to improve, and 4 weeks after the initiation of tigecycline therapy, both the surgical site infection and the patient's clinical condition were considerably improved. At that time, sequential sternum samples (manubrium, body, xiphoid, and sternum bone marrow) were sterile, but MDR *K. pneumoniae* was still recovered in samples obtained from the adipose and subcutaneous tissues. In all samples, the resistance phenotype and tigecycline MIC were identical with those of the index strain. Genotyping by PFGE revealed the identity of all of the isolates. We decided to perform a delayed secondary closure of the sternum after performing a major surgical debridement using an autologous thigh skin graft. The patient recovered well after

the operation, and 1 week later, he was transferred to the medical ward. Results of sequential cultures of surgical site and grafting tissue samples were negative. Tigecycline was administered postoperatively for another 4 weeks, and a treatment course of 65 days was completed.

No significant adverse effects were observed during tigecycline therapy except for nausea and diarrhea, which began on the fourth day and resolved 1 week later. When the patient was discharged from the hospital, he was afebrile, his surgical site and grafting tissue appeared healthy, and he had improved myocardial function (ejection fraction, >40%; B-type natriuretic peptide, 1220 pg/mL). At a 12-month follow-up examination, the patient had New York Heart Association functional class II congestive heart failure, had an ejection fraction of 40%, and had mild renal impairment.

Tigecycline was the first of the glycol-cyclines indicated for the treatment of complicated skin and skin-structure infections and complicated intra-abdominal infections [3]. Therefore, the drug has the potential to be an option for monotherapy for patients with such serious infections caused by MDR bacteria. However, tigecycline had been used for treatment courses lasting only up to 3 weeks, and there is no information regarding its use for longer courses [1, 4]. We report, to our knowledge, the first successful use of tigecycline for treatment of a severe infection that required a prolonged course of therapy in addition to appropriate surgical wound care. Osteomyelitis complicated by a disseminated infection in the mediastinum is a potentially fatal manifestation, even when cases are caused by fully susceptible organisms. In our patient, although the strain exhibited an MDR phenotype, the infection was effectively managed using tigecycline therapy. A question was raised regarding toxicity in the myocardium as a result of prolonged administration, resulting in a decreased ejection fraction; however, myocardial contractility