To the Editor—The fungal component 1,3-β-d-glucan is increasingly used to diagnose invasive fungal infection in immunocompromised patients [1]. Some studies showed false-positive results (i.e., positive findings not related to invasive fungal infection) in bacteremic patients, which were not related to known causes of reactivity, such as 1,3-β-d-glucan in fungal-derived antibiotics [1–4].

We also observed 1,3-β-d-glucan reactivity in tests (Fungitell; Associates of Cape Cod) of plasma samples obtained from bacteremic patients. For 2 (22%) of 9 hematology patients with Pseudomonas bacteremia and 1 (20%) of 5 patients with Streptococcus pneumoniae bacteremia, 1,3-β-d-glucan reactivity (i.e., the 1,3-β-d-glucan level of the plasma samples is higher than the cutoff value of 80 pg/mL) was found in plasma that was obtained on the same day that the blood culture specimen was taken. All known causes of 1,3-β-d-glucan reactivity were ruled out in these patients, including the presence of invasive fungal disease or treatment with glucan-containing antibiotics.

We then determined 1,3-β-d-glucan reactivity of different bacteria, including those that are commonly isolated from the blood of immunocompromised patients (figure 1). No reactivity was observed for most of the clinical isolates tested. However, in addition to Alcaligenes faecalis and S. pneumoniae, which are known to produce 1,3-β-d-glucan [2], we found that Pseudomonas aeruginosa also showed 1,3-β-d-glucan reactivity. The reactivity in the supernatant of all 7 P. aeruginosa cultures increased during growth and decreased after treatment with 1,3-β-d-glucanase, demonstrating the specificity of the reaction. Although a recent study showed the presence of osmoregulated periplasmic 1,2-β-glucan and 1,6-β-glucan in P. aeruginosa, these molecules are not found in the supernatant of bacterial cultures.

**Figure 1.** The 1,3-β-d-glucan reactivity of different bacteria and other strains. The reactivity of several bacterial culture supernatants was tested with the Fungitell assay (Associates of Cape Cod) in accordance with the manufacturer’s instructions. Bacteria, including those isolated from cultures of blood from immunocompromised patients and those isolated from human gut, were cultured in human serum from healthy donors supplemented with glucose (100 mmol/L) for 72 h at 120 rpm and 37°C. All isolates were tested at least twice in duplicate. Bacterial strains are clinical isolates from the Radboud University Nijmegen Medical Center collection. In addition, Pseudomonas aeruginosa American Type Culture Collection 10145 was tested. Alcaligenes faecalis was used as a positive control, and culture medium was used as a negative control.
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.

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**References**


**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 *Chlamydia 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 ≥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 ≥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.

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