Severe Human Psittacosis Requiring Artificial Ventilation: Case Report and Review

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Severe respiratory failure is an uncommon manifestation of psittacosis. We describe a patient with psittacosis who developed severe respiratory failure and required artificial ventilation. We also review 11 cases reported in the English-language literature over the past 30 years. A history of exposure to birds was reported in 10 of 12 cases and remains the most significant risk factor. Severe hypoxemia or renal impairment was associated with a poor prognosis. Eight patients died of psittacosis or related complications of the infection. Diagnostic aspects, clinical manifestations, and management options are discussed.

Case Report

A 46-year-old man was admitted to our hospital with fever and chills, a productive cough, and myalgias, all of 10 days' duration. At first the family doctor suspected a flu-like illness, but because the fever persisted, empirical antimicrobial therapy was changed to doxycycline (200 mg iv once daily) and gentamicin (120 mg iv every 12 hours) was added because the patient began to appear septicemic. During the next 5 days a remittent fever persisted; the patient's respiratory function did not improve, and a repeated chest roentgenogram showed no improvement in his condition.

At that time Chlamydia psittaci was isolated from the cloaca of one of the patient's birds, and polymerase chain reaction (PCR) demonstrated the presence of Chlamydia in the BAL fluid. Eventually the patient's clinical condition improved, and he was discharged from the hospital in good health after 28 days.

Methods

The complement fixation (CF) test was performed according to the microtiter technique [8] with a commercial antigen containing C. psittaci (Behringwerke, Marburg, Germany). For detection of IgM, the serum samples were pretreated with Guilsorb (Biolab, Amersfoort, the Netherlands) to remove IgG and rheumatoid factors [9]. An IF test was performed by means of standard procedures with commercial C.
Severe Human Psittacosis

Psittacosis presenting as severe respiratory insufficiency is uncommon; to our knowledge, only 12 cases have been reported to date [3-7]. Psittacosis is a disease of adults—mainly those 30-60 years of age [11]—and the ages of all patients were within this range. Ten (83%) of the 12 patients had a history of exposure to birds. Since psittacosis is a systemic infection, extrapulmonary symptoms are often present. Seven of the patients presented with neurological manifestations [3, 4, 6, 7] and six presented with gastrointestinal features [3, 4, 6, 7]. Four patients presented with acute renal failure for which hemodialysis was required [3, 6, 7]. Risk factors for developing severe respiratory failure were not apparent in any of these cases.

Tetracycline and tetracycline analogues are considered to be the treatment of choice for infection with C. psittaci [2]. Erythromycin has been reported to be effective [2, 15], However, in three cases in which erythromycin was administered alone, the patients died [3, 5], whereas in four cases (including the present report) in which tetracycline was administered, the patients survived [5, 7].

Death resulting from infection with C. psittaci is uncommon, and the overall mortality is estimated at 0.7% [12]. However, factors including increasing age, leukopenia, severe hypoxemia, renal impairment, confusion, and multilobar involvement have been associated with a poor prognosis [3]. Five of eight patients with documented hypoxemia [4, 5] and three of four patients who presented with renal impairment [3, 6] died. In these cases, leukocyte count, age, and confusion did not appear to be factors in the poor outcome. Chest roentgenograms from the time of admission were not available and therefore were not evaluated with respect to outcome. Eight patients (67%) who presented with severe respiratory failure died of psittacosis or related complications [3-6]. Three of these patients died within 48 hours of admission [3, 5]. For the remaining five patients, the mean interval between the onset of symptoms and diagnosis was 8.3 days, indicating that diagnostic delay could be an important factor with respect to outcome. Thus, rapid and sensitive diagnostic assays are of great importance. Several techniques, including the use of monoclonal antibodies [16] or DNA-based assays [17] of respiratory tract secretions or BAL fluid, have been used successfully, but further evaluation is needed.

References


