Community-acquired Klebsiella pneumoniae bacteremia with meningitis and endophthalmitis in Italy

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Surveillance studies support the perception that community-acquired pneumonia is no longer an important entity in Western countries. Likewise, a distinctive community-acquired Klebsiella pneumonia syndrome characterized by the presence of bacteremia in conjunction with liver abscess, endophthalmitis or meningitis has been, to date, almost exclusively described in Asia.

We present here a further case of K. pneumoniae bacteremia in conjunction with meningitis and endophthalmitis that is, to our knowledge, the first report from Italy. After 4 days of remittent fever, headache, and nausea, a 50-year-old man with a history of insulin-dependent diabetes mellitus was admitted to our department. Moderate nuchal rigidity and continuous fever (38°C) were present. Chest X-ray was negative. Shortly after admission, the patient entered a deep coma state. Cranial computed tomography (CT) did not show evidence of focal lesions. A lumbar puncture yielded cloudy cerebrospinal fluid (CSF) with high levels of proteins (369 mg/dL) and white blood cells (WBCs) (3025/mL, with a predominance of polymorphonuclear leukocytes). Serum and CSF glucose concentrations were 417 and 100 mg/dL, respectively. CSF did not show evidence of focal lesions. A lumbar puncture yielded cloudy cerebrospinal fluid (CSF) with high levels of proteins (369 mg/dL) and white blood cells (WBCs) (3025/mL, with a predominance of polymorphonuclear leukocytes). Serum and CSF glucose concentrations were 417 and 100 mg/dL, respectively. CSF Gram staining revealed a large number of Gram-negative bacilli. Because of the development of severe respiratory failure, the patient was referred to the intensive care unit, where he was intubated and mechanically ventilated. A petechial rash on the chest followed. Laboratory investigations revealed: platelets 22 000/mm³, WBC 9670/mm³, and hepatic aminotransferase levels elevated to four times the upper limit of normal.

Empirical parenteral treatment with cefotaxime, ampicillin and levofloxacin was initiated. Intravenous dexamethasone. 4 mg every 6 h, was also added. On hospital day 3, K. pneumoniae grew in cultures of CSF and in three blood cultures. Ampicillin was therefore discontinued, and antibiotic treatment changed to intravenous cefotaxime, pefloxacin, and meropenem. On day 4, we observed a sudden worsening of the patient’s neurologic condition, with tonic-clonic seizures, anisocoria, deviation of the eyes, and left hemiparesis. A repeated cranial CT revealed marked edema in the right temporal region; diphenylhydantoin was added. Subsequently, the patient was noted to be showing a gradual improvement in his general condition and mental status, and on hospital day 15 he was readmitted to our department. Upon examination, he was completely conscious and complaining of loss of sight in the right eye. Ophthalmologic findings (conjunctival hyperemia, panuveitis, vitreal opacity, posterior vitreous detachment) were diagnostic of endophthalmitis. Topical treatment was started, and parenteral antibiotics were continued. The patient was discharged after 6 weeks of systemic antibiotic treatment. He recovered completely, with the exception of the total loss of vision in the affected eye. Cerebral magnetic resonance imaging (MRI) and CSF examination performed before discharge were normal. After 1 year of follow-up, the patient is in good health.

Cases of spontaneous K. pneumoniae meningitis are rare and more commonly observed in hospitalized patients. No other cases of K. pneumoniae meningitis were observed in our series of 87 patients with meningitis admitted to our department during the last 6 years. Our patient was diabetic, and lost vision in one eye before the diagnosis of endophthalmitis was clinically suspected. With few exceptions, such poor ophthalmologic outcomes of K. pneumoniae endophthalmitis clearly emerge from the published reports.1 In their worldwide survey, Ko et al reported only one case of K. pneumoniae bacteremia with liver abscess outside Taiwan, recorded in a Belgian patient. Likewise, community-acquired bacteremic K. pneumoniae endophthalmitis and meningitis have been infrequently reported from North America, Australia, and Europe, in contrast to Asia.1-9 Sporadic cases of K. pneumoniae endophthalmitis and meningitis, with or without liver abscess, have been reported from Belgium,2 Puerto Rico,3 France,4,7 Spain,5 and, more recently, the USA.8,9 Using pulsed-field gel electrophoresis, Lau et al10 have identified a major cluster of genetically related K. pneumoniae strains from patients with liver abscesses and other metastatic infections in Taiwan. Our report, together with other recent reports from the Western
world, raises concern about the possibility that such virulent strains may spread to other countries. It also reinforces the need for further and continued surveillance including a representative number of hospitals from different countries, before a firm conclusion on the negligible relevance of community-acquired *K. pneumoniae* infections outside Asia can be drawn.

**REFERENCES**


