Empirical Cephalosporin Treatment of Melioidosis

Melioidosis, or infection by Burkholderia pseudomallei, remains a serious cause of mortality and morbidity in northeastern Thailand [1]. During the months of the rainy season, B. pseudomallei is the commonest cause of community-acquired sepsicaemia [1]. Empirical antibiotic regimens for the treatment of presumed community-acquired sepsis, such as penicillin/aminoglycoside combinations, have no activity against this organism. In areas of endemcity such as this, more expensive empirical antibiotic regimens that possess activity against B. pseudomallei are therefore needed. Amoxicillin/clavulanic acid is widely used and has been shown to be an effective treatment of melioidosis [2], although ceftazidime remains the treatment of choice for severe disease [3]. Other third-generation cephalosporins, particularly cefotaxime and ceftriaxone, are being used increasingly. These antibiotics are active in vitro against B. pseudomallei [4, 5] but have not been formally assessed in controlled treatment trials.

We therefore retrospectively reviewed the treatment records of all adult patients with melioidosis (primary presentations only) who were admitted to Sappasitprasong Hospital, Ubon Ratchathani, Thailand, between May 1987 and September 1998.

Of the 1,440 cases, 1,353 could be evaluated (i.e., the acute outcome was known). Overall, 733 patients (54.2%) died. Ceftazidime (adult dosage, 40 mg/kg q8h) was used as first-line therapy for B. pseudomallei infection in 528 patients (39.0%); 138 patients (10.2%) received primary treatment with either cefotaxime (20 mg/kg q6h) or ceftriaxone (20 mg/kg q12h), and 167 patients (12.3%) received first-line therapy with amoxicillin/clavulanic acid (24 mg/kg q4h). The mortality rate among all ceftazidime-treated patients was 41.7%, which is comparable with findings of previously reported series [2, 3]. This rate compares with 53.9% associated with amoxicillin/clavulanic acid (P = .006) and 71.0% associated with cefotaxime or ceftriaxone (P < .001; χ² test with Yates’ correction). Amoxicillin/clavulanic acid was also significantly more effective than cefotaxime or ceftriaxone (P = .002). Blood cultures were positive for 62.3% of ceftazidime-treated patients, 68.3% of amoxicillin/clavulanic acid–treated patients, and 78.3% of cefotaxime- or ceftriaxone-treated patients. Among these septicemic patients, the mortality rates were 59.6%, 67.5% (P = .13), and 81.5% (P < .001), respectively, and among a subgroup of septicemic patients surviving at least 48 hours, the rates were 47.0%, 47.1%, and 74.4% (P < .001), respectively.

Forty-eight (61%) of 79 cefotaxime- or ceftriaxone-treated patients whose therapy was switched to ceftazidime when culture results became available died subsequently. Therapy for a further 13 patients was switched to amoxicillin/clavulanic acid. Cefotaxime and ceftriaxone are both marginally less active than ceftazidime against B. pseudomallei in vitro [4, 5], and at the doses currently used, these drugs are associated with a significantly higher mortality rate among patients with melioidosis. These results suggest that, in areas in which melioidosis is endemic, empirical regimens for treatment of presumed community-acquired sepsicaemia that contain cefotaxime or ceftriaxone are not appropriate.

Wipada Chaowagul, Andrew J. H. Simpson, Yupin Suputtamongkol, and Nicholas J. White

Department of Medicine, Sappasitprasong Hospital, Ubon Ratchathani, Thailand; and Centre for Tropical Medicine, Nuffield Department of Clinical Medicine, John Radcliffe Hospital, University of Oxford, Oxford, United Kingdom

References

Cytomegalovirus Pneumonia in Two Infants Recently Adopted from China

Cytomegalovirus (CMV) infections are common throughout the world. Most infections in immunocompetent persons are asymptomatic. Although uncommon, pneumonitis secondary to CMV infection has been described in otherwise healthy infants [1–3]. We describe two apparently immunocompetent infants who presented in respiratory distress shortly after arriving in the United States from the same orphanage in China. CMV infection was demonstrated as the cause of illness in both patients.

A 5-month-old girl was admitted to the hospital with a 5-day history of fever, cough, and dyspnea. She had been brought to the United States from the same orphanage in China. CMV infection was demonstrated as the cause of illness in both patients.