

## CORRESPONDENCE

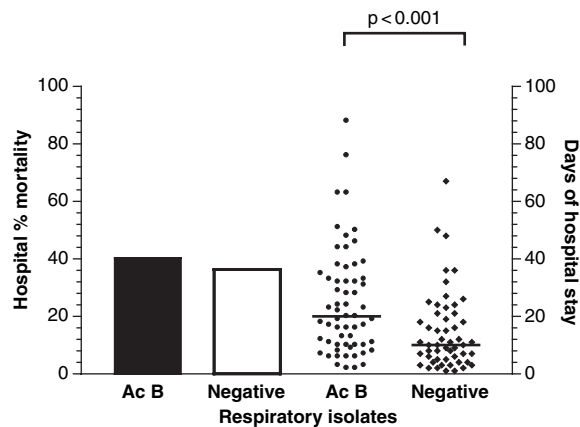
***Acinetobacter baumannii* respiratory isolates in ventilated patients are associated with prolonged hospital stay**

10.1111/j.1469-0691.2006.01411.x

We read with interest the excellent review in *CMI* [1] concerning the clinical impact and pathogenicity of *Acinetobacter*, and wish to contribute our own observations from Malaysia. In a retrospective review of 404 cases of mechanically-ventilated patients in our urban-based, 800-bed, university teaching hospital in Malaysia between 2003 and 2004, 102 (25.2%) patients yielded negative cultures, and *Acinetobacter baumannii* ranked highest among all positive respiratory isolates, accounting for 141 (46.7%) of all patients yielding positive cultures. Only 16.7% of *A. baumannii* isolates showed susceptibility to all major potent antibiotic classes (extended-spectrum  $\beta$ -lactams, fourth-generation cephalosporins, carbapenems and aminoglycosides), while 68.1% of isolates showed multiresistance.

To investigate the clinical relevance of respiratory cultures positive for *A. baumannii* in ventilated patients, the hospital mortality and length of hospital stay of patients with *A. baumannii* were compared with those of patients with negative cultures. In order to allow meaningful comparison, only patients with single cultures of *A. baumannii* ( $n = 72$ ; 46.9% male; age (SD) 46 (19.7) years) and those for whom cultures were consistently negative ( $n = 91$ ; male 53.1%; age (SD) 49 (19.2) years) were studied, and only isolates from unprotected tracheal aspirates (98.8%) and bronchoscopic specimens (1.2%) were studied. The results showed that the crude hospital mortality rates for the *A. baumannii*-positive and the *A. baumannii*-negative groups did not differ significantly (40.3% and 36.3%, respectively;  $p = 0.6$ ,  $\chi^2$  test), but that the median (interquartile range 25–75) length of hospital stay was significantly different (20 (10–35) days and 10 (5–21) days, respectively;  $p < 0.001$ , Mann–Whitney test) (Fig. 1). Analysis based on in-vitro antibiotic resistance (extended-spectrum  $\beta$ -lactams, 59.7%; fourth-generation cephalosporin, 54.2%; carbapenems, 47.2%; aminoglycosides, 48.6%) gave similar findings with respect to mortality ( $p = 0.33$ – $0.50$ ) and length of hospital stay ( $p = 0.001$ – $0.011$ ).

While the absence of statistical differences in crude hospital mortality rates may be a result of



**Fig. 1.** Crude hospital mortality rate and length of hospital stay for mechanically-ventilated patients with *Acinetobacter baumannii* (Ac B) respiratory isolates, compared with patients with negative cultures. Horizontal bars represent median values.

the study being underpowered, the significant difference in the length of hospital stay between those patients with *A. baumannii* and those who yielded negative cultures is striking, and is likely to represent a genuine association. We intentionally compared patients who yielded *A. baumannii* isolates and those with negative cultures because this comparison clearly delineates the common clinical scenario that requires judgement on whether to initiate an antibiotic regimen or change an existing one [2]. Previously, it had been our general departmental policy to refrain from treating patients with positive cultures of *A. baumannii* alone, although such data were not collected for the purpose of this study. The above findings constitute further evidence for increasing respiratory infection/colonisation with *A. baumannii* of ventilated patients [1], and the decision on whether to treat positive respiratory isolates of *A. baumannii* should be taken with care [3]. This concern is appropriate in the light of escalating antibiotic resistance worldwide and the strong advocacy for judicious use of potent, extended-spectrum, reserved antibiotics.

L. C. Loh\*, C. T. J. Yii, K. K. Lai, S. P. Seevaunnamtum, G. Pushparasah and J. M. G. Tong  
 IMU Lung Research,  
 International Medical University,  
 Kuala Lumpur,  
 Malaysia  
 \*E-mail: richard\_loh@imu.edu.my

## REFERENCES

1. Joly-Guillou ML. Clinical impact and pathogenicity of *Acinetobacter*. *Clin Microbiol Infect* 2005; **11**: 868–873.
2. American Thoracic Society, Infectious Diseases Society of America. Guidelines for the management of adults with hospital-acquired, ventilator-associated, and healthcare-associated pneumonia. *Am J Respir Crit Care Med* 2005; **15**: 388–416.
3. Murray CK, Hospenthal DR. Treatment of multidrug resistant *Acinetobacter*. *Curr Opin Infect Dis* 2005; **18**: 502–506.

### Anaerobic bacteraemia in cancer patients

10.1111/j.1469-0691.2006.01412.x

The recent article in *CMI* by Zahar *et al.* [1] reported 45 cases of anaerobic bacteraemia in cancer patients during a 6-year period. The authors made the important point that, although these infections occur infrequently, they can be serious, and even fatal. The use of some antimicrobial agents, such as ceftazidime, as initial monotherapy for fever does not provide coverage for anaerobic bacteria. Delayed administration of appropriate therapy, or inappropriate therapy, results in substantially higher mortality rates.

A review of 451 episodes of anaerobic bacteraemia was conducted at the University of Texas M. D. Anderson Cancer Center, covering the period from 1972 to 1983 [2,3]. Apparently, many physicians are not aware of this large review. The large number of cases made it possible to analyse clostridial infections separately from infections caused by non-sporulating anaerobes, which is important because some *Clostridium* spp., most notably *Clostridium perfringens* and *Clostridium septicum*, produce potent toxins that can cause characteristic presentations.

The majority (70%) of the 451 infections were caused by non-sporulating anaerobes, predominantly *Bacteroides* spp., and especially *Bacteroides fragilis*; *C. perfringens* and *C. septicum* were the most common causes of clostridial infection. In both groups, the most frequent underlying malignancies were acute leukaemia, and genitourinary and gastrointestinal malignancies. Polymicrobial infection occurred in 27% of the cases. Among patients with infections caused by non-sporulating organisms, 48% had abdominal abscesses,

28% had soft tissue infection and necrosis, and 28% presented with septic shock. Among patients with clostridial infections, 38% had abdominal or rectal abscesses, necrotic tumours or peritonitis, 44% had soft tissue infections (11% with necrosis), and 38% presented with septic shock. Occasional patients with clostridial infections had gas gangrene, disseminated crepitant skin lesions, or acute haemolysis. *C. septicum* infections were associated with typhlitis in neutropenic patients with acute leukaemia.

The overall cure rates were 70% for patients with non-sporulating anaerobic infections, and 58% for patients with clostridial infections. Cure rates were lower in patients with septic shock, pneumonia, polymicrobial infection, and persistent severe neutropenia.

It is apparent from both the older and current studies that, while they are not frequent, anaerobic infections are often serious and can be fatal if not treated early with appropriate antimicrobial agents. Hence, those patients with abdominal symptoms, peri-rectal abscesses or necrotic skin lesions, and especially those patients with underlying acute leukaemia, or genitourinary or gastrointestinal malignancies, should receive anaerobic coverage as part of their initial empirical therapy.

G. P. Bodey

Department of Infectious Diseases,  
Infection Control and Employee Health,  
The University of Texas,  
M. D. Anderson Cancer Center,  
Houston,  
Texas,  
USA

E-mail: gbodey@mdanderson.org

## REFERENCES

1. Zahar J-R, Farhat H, Chachaty E, Meshaka P, Antoun S, Nitenberg G. Incidence and clinical significance of anaerobic bacteraemia in cancer patients: a 6-year retrospective study. *Clin Microbiol Infect* 2005; **11**: 724–729.
2. Fainstein V, Elting LS, Bodey GP. Bacteremia caused by non-sporulating anaerobes in cancer patients. A 12 year experience. *Medicine* 1989; **68**: 151–162.
3. Bodey GP, Rodriguez S, Fainstein V, Elting LS. Clostridial bacteremia in cancer patients: a 12 year experience. *Cancer* 1991; **67**: 1928–1942.