Community-Acquired *Acinetobacter baumannii* Infections in Northern California

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Abstract

*Acinetobacter baumannii* is an emerging pathogen which causes serious healthcare-associated infections, and less commonly, community-acquired infections, especially in tropical and subtropical climates. A description of the epidemiological and clinical characteristics of patients with *A. baumannii* community-acquired infections, cared for at a medical center located in Northern California, is presented. A total of 52 cases were identified, 11 (21%) of which were community-acquired. Community-acquired *A. baumannii* infections are characterized by high mortality rates and multi-drug resistance. Seasonal variation of *A. baumannii* infection rates has been noted with higher rates in the summer season [4]. Community-acquired *A. baumannii* infections have been recognized mainly in tropical and sub-tropical Asia-Pacific regions, such as Taiwan, Hong Kong and Australia, and rarely in the United States [5]. Most reports describe patients with comorbidities, such as chronic obstructive pulmonary disease (COPD), renal failure and diabetes mellitus, although a few studies describe fulminant *A. baumannii* infections, such as pneumonia and septic shock, in otherwise healthy individuals. The mortality rate of community-acquired *A. baumannii* infections may be as high as 56%. Most cases have been caused by strains susceptible to third generation cephalosporins and carbapenems. In order to expand on the epidemiology of community-acquired *A. baumannii* infections in the United States, a detailed report is presented describing clinical characteristics and outcomes of cases seen at a medical center in Northern California.

Methods

A retrospective study was conducted of patients diagnosed with *A. baumannii* infection in Regional Medical Center of San Jose, CA, a 247-bed trauma medical center serving Santa Clara County, from January, 2009, until July 2011. Patients with *A. baumannii* infection seen in the emergency department wound care clinic or within 48 hours of admission to the hospital, without a history of hospitalization or residence in a long-term care facility in the preceding 30 days, were compared to hospitalized patients with healthcare-associated *A. baumannii* infections during the same period. Patients were deemed to have *A. baumannii* infections if they fulfilled infection criteria according to the Centers for Disease Control and Prevention/National Healthcare Safety Network of the United States [6].

Results

A total of 52 cases of *A. baumannii* infections were identified (Table 1). Of these, 11 (21%) were community-acquired, and consisted of...

| Variable                      | Community-acquired | Hospital-acquired |
|-------------------------------|--------------------|-------------------|
| Number (%)                    | 10 (20)            | 41 (80)           |
| Median age, years (range)     | 50 (27-91)         | 73 (40-96)        |
| Male sex                      | 8 (73)             | 30 (73)           |
| Clinical syndromes            |                    |                   |
| Pneumonia (%)                 | 2 (20)             | 25 (61)           |
| Wound (%)                     | 4 (40)             | 11 (27)           |
| UTI (%)                       | 3 (30)             | 5 (12)            |
| Primary bacteremia (%)        | 1 (10)             |                   |
| Associated conditions         |                    |                   |
| COPD                          | 3 (10)             |                   |
| Diabetes mellitus             | 1 (7)              |                   |
| Renal failure                 | 1 (8)              |                   |
| Homelessness                  | 2 (0)              |                   |
| Alcoholism                    | 3 (0)              |                   |
| Neurological                  | 1 (15)             |                   |
| Polytrauma                    | 0 (2)              |                   |
| Urethral stricture            | 1 (0)              |                   |
| Cirrhosis                     | 1 (0)              |                   |
| Mean length of stay, days (range) | 7 (3-8)                 | 32 (4-81)         |
| Deaths (%)                    | 2 (18)             | 4 (10)            |

Table 1: Clinical characteristics of *A. baumannii* infections, Regional Medical Center of San Jose, January 2009 to July 2011.

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Received July 06, 2013; Accepted August 14, 2013; Published August 16, 2013

Citation: Studemeister A (2013) Community-Acquired *Acinetobacter baumannii* Infections in Northern California. Clin Microbial 2: 126. doi: 10.4172/2327-5073.1000126

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Community-acquired Acinetobacter baumannii infections caused a variety of serious clinical syndromes, most commonly wound infections, but also UTI, pneumonia and septic shock (Table 1). In contrast, most healthcare-associated cases were associated with pneumonia. Community-associated infections occurred in younger patients, and were lethal in both cases associated with bacteremia. Most patients in both groups had associated comorbidities such as COPD, diabetes mellitus and alcoholism. Unlike previously reported predominance in warmer months, most cases of both hospital and community-acquired A. baumannii infections were seen in late fall or winter months. Although multi-drug resistance was seen in 20% of healthcare-associated A. baumannii infections, all community-acquired infections were caused by fully susceptible strains. Local epidemiologic data, such as that found in this report, may be useful for the development of empiric treatment recommendations for A. baumannii infections by hospital-based antibiotic stewardship programs.

References

1. Fournier PE, Richet H (2006) The epidemiology and control of Acinetobacter baumannii in health care facilities. Clin Infect Dis 42: 692-699.
2. Centers for Disease Control and Prevention (CDC) (2004) Acinetobacter baumannii infections among patients at military medical facilities treating injured U.S. service members, 2002-2004. MMWR Morb Mortal Wkly Rep 53: 1063-1066.
3. Villegas MV, Hartstein AI (2003) Acinetobacter outbreaks, 1977-2000. Infect Control Hosp Epidemiol 24: 284-295.
4. McDonald LC, Barerjee SN, Jarvis WR (1999) Seasonal variation of Acinetobacter infections: 1987-1996. Nosocomial Infections Surveillance System. Clin Infect Dis 29: 1133-1137.
5. Falagas ME, Karveli EA, Kelesidis I, Kelesidis T (2007) Community-acquired Acinetobacter infections. Eur J Clin Microbiol Infect Dis 26: 857-868.
6. Horan TC, Andrus M, Dudeck MA (2008) CDC/NHSN surveillance definition of health care-associated infection and criteria for specific types of infections in the acute care setting. Am J Infect Control 36: 309-332.