

Trajectory and Long-Term Outcomes in Patients with MRSA Bacteremia

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1 Background

Methicillin-resistant *Staphylococcus aureus* (MRSA) remains the most common pathogen in health care associated bacteremia and carries significant morbidity and mortality. The aim of our study was to describe the trajectory and long-term (3 months to 1 year) outcomes of patients with MRSA bacteremia while gauging the interplay between bacterial, treatment, and host factors in determining the outcomes.

2 Methods

Patients admitted to the University of New Mexico Hospital between 2002 and 2013 diagnosed with MRSA bacteremia during their hospital stay were included. The first episode of bacteremia was considered the index case. Predictor variables included: host data (age, co-morbidities, McCabe-Jackson score, MRSA carriage status), severity of presentation (Pitt bacteremia score, ICU stay, need for mechanical ventilation), bacterial characteristics (USA strain type, Panton Valentine Leukocidin production, accessory gene regulator type and phenotype, and treatment data (drug and duration). The main outcomes were mortality at 90 days and 1 year. The secondary outcomes were hospital readmission, nursing home residence and continued need for hemodialysis. Predictors were evaluated using multivariable logistic regression and survival analysis.

3 Results

We identified 263 distinct patients with MRSA bacteremia. Mean age was 51.8 ± 15.6 years, 71.1% were male, 38.4% Caucasian and 37.6% Hispanic. The most common sources of bacteremia were injection drug use, endocarditis and skin and soft tissue infections. USA 300 accounted for more than half of the strains. The vast majority of patients received vancomycin initially (97.9%) with 17% and 18% being transitioned to daptomycin and linezolid, respectively, with a median duration of treatment of 31 days. Forty-five (17.1%) patients died during the index hospitalization. Mortality at 3 months and 1 year had slightly higher rates at 19% and 21%. Readmission rate between 3 months and 1 year was 17.5% with infectious diseases being the main cause in 50% of the cases. Independent predictors of mortality at 3 months and 1 year were age, Pitt bacteremia score and duration of antibiotic treatment.

4 Conclusions

Age, markers of severity of acute illness and duration of treatment impact mortality at 90 days and 1 year following MRSA bacteremia. Most readmissions were due to infectious diagnoses.