Antibiotic prescribing practices and outcomes for acute bacterial skin and skin structure infections (ABSSSI) within a large, academic medical center

Dandino M, Martin K, Guffey J, Kasbekar R, Roshdy D

Carolinias Medical Center

Purpose/background: Acute bacterial skin and skin structure infections (ABSSSI) are the leading cause of hospitalization in the United States. In 2014, the Infectious Diseases Society of America (IDSA) released updated clinical practice guidelines for the treatment of ABSSSI based on disease type and severity. Adherence to these guidelines has been highlighted as an area of focus for antimicrobial stewardship programs. In a recent study, the use of inappropriate antibiotics such as those with broad gram-negative or antianaerobic activity was frequent among those admitted for ABSSSI.

Research Objective: To evaluate antibiotic prescribing practices and outcomes for ABSSSI within a large, academic medical center.

Methodology: This was a single-center, retrospective chart review of patients admitted to a floor bed at a large, academic medical center with a primary or secondary diagnosis of ABSSSI defined as cellulitis, cutaneous abscess, or skin and soft tissue infection from April 1, 2015 through June 30, 2015. Patients included were at least 18 years old and admitted by a primary medical service. Patients were excluded if they were immunocompromised, admitted to an intensive care unit, or had an admission diagnosis of necrotizing fasciitis, sepsis, or diabetic foot infection with ulcers. Based on vital signs and labs, classification of disease type and severity was determined by two independent reviewers. Antimicrobials utilized were determined to be preferred or non-preferred based on a modified list derived from the guidelines. The primary outcome was the rate of prescribing of preferred antibiotics. Secondary outcomes included broad-spectrum antibiotic use, antianaerobic antimicrobial usage, duration of preferred and non-preferred therapies, total duration of antimicrobial therapy, length of stay, 30-day infection-related readmission rates, Clostridium difficile diagnosis within one month of completing antimicrobial therapy, and changes in antimicrobial therapy. Descriptive statistics were completed for primary and secondary outcomes.

Results: Of patients included into the study (n=64), 39% had purulent infections and 61% had non-purulent infections. Baseline characteristics included a mean age of 53 years, 55% female, and 31% with a drug allergy. Preferred therapy was received in 4% of purulent infections and 20.5% of non-purulent infections. Overall, 15.6% of included patients received broad-spectrum antibiotics. The mean length of stay was 2.5 days for purulent infections and 3.4 days for non-purulent infections. Patients treated for purulent infections averaged 3.8 days of therapy compared to 4.8 days of therapy for non-purulent infections. The most commonly used antibiotic was vancomycin for purulent infections and clindamycin for non-purulent infections.

Conclusion: Overall, fewer patients received preferred antibiotics than expected, but broad-spectrum antimicrobial utilization was also low. Vancomycin and clindamycin were the most commonly prescribed antibiotics for each group. Moving forward, the antibiotic prescribing practices observed within this time period will be compared to the patterns following implementation of an ABSSSI order set and provider education. Prescribing practices will be compared between the pre-intervention and post-intervention periods.