The Importance of an Infectious Disease Consult in Management of Staphylococcus aureus Bacteremia

Yung, Lok W, MD, Tadele, Mahlet, MD, Ruocco, Vincent, BS, PharmD, BCPS

Background

Staphylococcus aureus (SA) bacteremia carries a high mortality rate. Timely and appropriate management of SA bacteremia is critical for better outcome of patients, as well as reducing complication, and length of hospital stay. As part of our Antimicrobial Stewardship Program (ASP) at North Central Bronx Hospital and Jacobi Medical Center and quality improvement project we implemented a mandatory infectious disease consultation for all cases of SA bacteremia starting January of 2014. This study looked and compared data of SA bacteremia’s in 2013 pre-mandatory infectious disease (ID) consultation, and in 2014 post-implementation of mandatory ID consult in regard to practicing standard of care for SA bacteremia that including appropriate antibiotic choice and duration, echocardiogram, follow up blood culture, removal of any focal source, and mortality.

Method

All adult patients admitted to inpatient service at North Central Bronx Hospital and Jacobi Medical Center between Jan 2013 and Dec 2014 with positive SA bacteremia were screened. Patients were excluded if they expired within 48hrs from first positive blood culture. Retrospective comprehensive chart review was conducted on those patients who meet the criteria. Statistical analysis was performed using Chi-squared test for nominal data.

Results

A total of 83 bacteremia’s met the above criteria: 28 cases in 2013 and 55 cases in 2014. ID was consulted in 71% of the cases in 2013 versus 88% in 2014 after implementation of mandatory ID consult. Overall mortality from SA bacteremia was 15% (2013) versus 12% (2014). The majority of morality occurred in patients who did not have ID consultation: 38% (P=.02 in 2013) and 50% (P=0.018) in 2014. Follow up blood cultures, Echocardiography, and focal source removal occurred more often in patients who had ID consultation (P=0.05, 0.0002 and 0.008 respectively). There was also significant decrease in overall mortality post implementation of mandatory ID consult with p=0.018. Duration of therapy was longer than 14 days for patients who had ID consults versus non-ID consults who got fewer than two weeks of appropriate antibiotic therapy.

Conclusions

SA bacteremia carries a high rate of mortality and morbidity. ID consultation significantly improved and promoted implementation of standard evidence based guidelines for SA bacteremia management namely follow up blood cultures, echocardiography, removal of any focal source and appropriate duration of antimicrobial therapy. Overall ID consultation and ASP improved overall management of patients with SA bacteremia.

References