## URC HEALTH. Carolina Antimicrobial Stewardship Program | UNC Hospitals Staphylococcus aureus Bacteremia Management



1

Approved by UNC Medical Center P&T Committee October 2022; Updated July 2023

This document is intended for educational purposes and does not replace the medical decision and diagnosis of a treating provider. Although we have made a good faith effort to provide accurate information as of the date of creation, we make no representation or warranty regarding its accuracy and have no obligation to update the guidelines as new medical information becomes available.



## **Background:**

- Staphylococcus aureus bacteremia (SAB) is associated with high morbidity and mortality and suboptimal management of SAB is associated with poor patient outcomes<sup>4,6</sup>
- Staphylococcus aureus isolated in the blood is rarely considered a contaminant<sup>20</sup>
- Studies have demonstrated that ID consultation in the management of SAB is associated with decreased relapse rates and mortality<sup>3,7,9,10,13</sup>
- Persistent bacteremia (positive culture ≥3 days after starting effective antimicrobial therapy) is a strong predictor for metastatic infection or endocarditis and should prompt an in-depth investigation<sup>6,20</sup>
- Retention of infected central venous catheters, fluid collections, and prosthetic devices (including pacemakers) in the setting
  of SAB has been associated with prolonged bacteremia, treatment failure, and death<sup>20</sup>

## Care Management Checklist

- □ Effective empiric therapy commenced same day as positive microscopy
- □ ID consult strongly recommended
- □ Drain/debride/remove the foci of infection as early as possible
- □ Removal of CVCs if feasible
- □ Echocardiography
- □ Draw repeat blood cultures every 48 hours until clearance of bacteremia is documented
- □ Adequate duration of therapy defined

## **References:**

- 1. Baddour LM, et al. Infective Endocarditis in Adults: Diagnosis, Antimicrobial Therapy, and Management of Complications: A Scientific Statement for Healthcare Professionals From the American Heart Association. Circulation. 2015;132(15):1435-86.
- 2. Bai AD, et al. Comparative effectiveness of cefazolin versus cloxacillin as definitive antibiotic therapy for MSSA bacteremia: results from a large multicentre cohort study. J Antimicro Chemother. 2015;70:1539-46.
- 3. Bai AD, et al. Impact of infectious disease consultation on quality of care, mortality, and length of stay in Staphylococcus bacteremia: results from a large multicenter cohort study. Clin Infect Dis. 2015;60:1451-61.
- 4. Chang FY, et al. Staphylococcus aureus bacteremia recurrence and the impact of antibiotic treatment in a prospective multicenter study. Medicine (Baltimore). 2003; 82:333-9.

2

Approved by UNC Medical Center P&T Committee October 2022; Updated July 2023

This document is intended for educational purposes and does not replace the medical decision and diagnosis of a treating provider. Although we have made a good faith effort to provide accurate information as of the date of creation, we make no representation or warranty regarding its accuracy and have no obligation to update the guidelines as new medical information becomes available.



- 5. Chong YP, et al. Treatment duration for uncomplicated Staphylococcus aureus bacteremia to prevent relapse: analysis of a prospective observational cohort study. Antimicrob Agents Chemother. 2013;57:1150-6.
- 6. Fowler VG, et al. Clinical identifiers of complicated Staphylococcus aureus bacteremia. Arch Intern Med. 2003; 163:2006-2072.
- 7. Fowler VG, et al. Outcome of Staphylococcus aureus bacteremia according to compliance with recommendations of infectious diseases specialists: experience with 244 patients. Clin Infect Dis. 1998;27:478-86.
- 8. Fowler VG, et al. Risk factors for hematogenous complications of intravascular catheter-associated Staphylococcus aureus bacteremia. Clin Infect Dis. 2005;40:695-703.
- 9. Fries BL, et al. Infectious diseases consultation and the management of Staphylococcus aureus bacteremia. Clin Infect Dis. 2014;58:598-9.
- 10. Jenkins TC, et al. Impact of routine infectious disease service consultation on the evaluation, management, and outcomes of *Staphylococcus aureus* bacteremia. CID 2008;46:1000-8.
- 11. Jernigan JA, Farr BM. Short-course therapy of catheter-related Staphylococcus aureus bacteremia: a meta-analysis. Ann Intern Med. 1993;119:304– 11.
- 12. Kim SH, et al. Outcome of vancomycin treatment in patients with methicillin-susceptible Staphylococcus aureus bacteremia. Antimicrob Agents Chemother. 2008;52:192-7.
- 13. Lahey T, et al. Infectious diseases consultation lowers mortality from Staphylococcus aureus bacteremia. Medicine (Baltimore). 2009;88:263-7.
- 14. Lee S, et al. Is cefazolin inferior to nafcillin for the treatment of methicillin-susceptible Staphylococcus aureus bacteremia? Antimicrob Agents Chemother. 2011;55:5122-26.
- 15. Li J, et al. Comparison of cefazolin versus oxacillin for treatment of complicated bacteremia caused by methicillin-susceptible Staphylococcus aureus. Antimicrob Agents Chemother. 2014;58:5117-24.
- 16. Liu C, et al. Clinical practice guidelines by the infectious diseases society of America for the treatment of methicillin-resistant Staphylococcus aureus infections in adults and children. Clin Infect Dis. 2011;52:1-38.
- 17. Lopez-Cortes LE, et al. Impact of an evidence-based bundle intervention in the quality-of-care management and outcome of Staphylococcus aureus bacteremia. Clin Infect Dis. 2013;57:1225-33.
- 18. Schweizer ML, et al. Comparative effectiveness of nafcillin or cefazolin versus vancomycin in methicillin-susceptible Staphylococcus aureus bacteremia. BMC Infectious Diseases. 2011;11:279-85.
- 19. Stryjewski ME, et al. Use of vancomycin or first-generation cephalosporins for the treatment of hemodialysis- dependent patients with methicillinsusceptible Staphylococcus aureus bacteremia. Clin Infect Dis. 2007;44:190-6.
- 20. Thwaites GE, et al. Clinical management of Staphylococcus aureus bacteraemia. Lancet Infect Dis 2011;11:208-22.

Approved by UNC Medical Center P&T Committee October 2022; Updated July 2023

This document is intended for educational purposes and does not replace the medical decision and diagnosis of a treating provider. Although we have made a good faith effort to provide accurate information as of the date of creation, we make no representation or warranty regarding its accuracy and have no obligation to update the guidelines as new medical information becomes available.

3