**Staphylococcus aureus** Bacteremia Management

Disclaimer: This algorithm has been developed for MD Anderson using a multidisciplinary approach considering circumstances particular to MD Anderson’s specific patient population, services and structure, and clinical information. This is not intended to replace the independent medical or professional judgment of physicians or other health care providers in the context of individual clinical circumstances to determine a patient’s care. Local microbiology and susceptibility/resistance patterns should be taken into consideration when selecting antibiotics. This algorithm should not be used to treat pregnant women.

### INITIAL EVALUATION

- Blood culture positive for *S. aureus*

  - Perform clinical assessment to identify source and extent of infection
  - Obtain Infectious Diseases (ID) consult regardless of colony count or presumed source
  - Eliminate and/or debride other sites of infection
  - Order daily blood cultures on at least days 2–4 after initial positive blood culture
  - Obtain transesophageal echocardiogram (TEE). A transesophageal echocardiogram (TEE) should be pursued when a patient meets criteria for complicated bacteremia\(^1\) and/or when recommended by ID.
  - Remove all indwelling central lines unless absolutely contraindicated or discussed with ID

### ANTIBIOTIC SELECTION

**First Line:**
- Daptomycin\(^2,3\) 8 mg/kg IV daily or
- Vancomycin\(^2\) 15 mg/kg IV every 12 hours (adjust dose based on levels)

**Second Line:**
- Cefaroline\(^2\) 600 mg IV every 8 hours
- Telavancin\(^2\) 7.5 mg/kg (maximum 750 mg) IV daily

**First Line:**
- Cefazolin\(^4\) 2 g IV every 8 hours or
- Oxacillin\(^4\) 2 g IV every 4 hours

**Second Line:**
- Daptomycin\(^2,3\) 8 mg/kg IV daily

### DURATION OF THERAPY

- Therapy duration: 4-6 weeks IV therapy from first negative blood culture

MRSA = methicillin-resistant *Staphylococcus aureus*
MSSA = methicillin-sensitive *Staphylococcus aureus*

\(^1\) Any of the following findings constitute a complicated bacteremia:
- Endocarditis verified upon echocardiography
- Evidence of metastatic sites of infection
- Fever beyond 3 days after appropriate therapy started
- Persistent bacteremia after 2-4 days on appropriate therapy

\(^2\) Renal adjustment required as appropriate—refer to Antimicrobial Stewardship inside page for dosing recommendations: [https://mdandersonorg.sharepoint.com/sites/antimicrobial-stewardship](https://mdandersonorg.sharepoint.com/sites/antimicrobial-stewardship)

\(^3\) Daptomycin should not be used as monotherapy if evidence of pulmonary involvement

\(^4\) Combination therapy with two or more active anti-MRSA agents may be considered on a case-by-case basis

\(^5\) Beta-lactam choice: Other beta lactam agents should not be considered to be interchangeable with cefazolin, nafcillin or oxacillin. In cases where an alternative beta-lactam is needed (e.g., concomitant infection), addition of cefazolin, nafcillin or oxacillin should be considered on a case-by-case basis.

\(^6\) All MSSA are sensitive to cefazolin; susceptibility testing is not independently performed

\(^7\) Oxacillin is better tolerated than nafcillin based on the available data
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**SUGGESTED READINGS**


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SUGGESTED READINGS - continued


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DEVELOPMENT CREDITS

This practice consensus statement is based on majority opinion of the Staphylococcus aureus Bacteremia Management workgroup at the University of Texas MD Anderson Cancer Center for the patient population. Theses experts included:

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