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 consult regardless of colony count or presumed source
- Eliminate and/or debride other sites of infection
- Order follow up blood cultures 2-4 days after initial blood culture
- Strongly consider transesophageal echocardiogram (TEE) unless contraindicated; otherwise consider transthoracic echocardiogram (TTE)
- Remove all indwelling central lines unless absolutely contraindicated

Methicillin resistant S. aureus?

ANTIBIOTIC SELECTION

Yes → **MRSA bacteremia**

First Line:
- Vancomycin[1] 15 mg/kg IV every 12 hours (adjust dose based on levels) **or**
- Daptomycin[1, 2] 8 mg/kg IV daily

Second Line[3]:
- Ceftaroline[1] 600 mg IV every 8 hours
- Telavancin[1] 7.5 mg/kg (maximum 750 mg) IV daily

No → **MSSA bacteremia**

First Line[4]:
- Cefazolin[1, 5] 2 g IV every 8 hours **or**
- Nafcillin 2 g IV every 4 hours **or**
- Oxacillin 2 g IV every 4 hours

Second Line:
- Daptomycin[1, 2] 8 mg/kg IV daily

Complicated bacteremia[6]?

DURATION OF THERAPY

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

No → Therapy duration: 2 weeks IV therapy from first negative blood culture

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

[1] Renal adjustment required as appropriate-refer to Antimicrobial Stewardship inside page for dosing recommendations: https://inside.mdanderson.org/departments/antimicrobial-stewardship-program/resources.html

[2] Daptomycin should not be used as monotherapy if evidence of pulmonary involvement

[3] Combination therapy with two or more active anti-MRSA agents may be considered on a case-by-case basis

[4] 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.

[5] All MSSA are sensitive to cefazolin; susceptibility testing is not independently performed

[6] Criteria for complicated bacteremia:
- Endocarditis verified upon echocardiography
- Evidence of metastatic sites of infection
- Febrile beyond 3 days after effective therapy started
- Patient has an implanted device
- Persistent bacteremia after 2-4 days

Department of Clinical Effectiveness V2
Approved by Executive Committee of the Medical Staff on 11/19/2019

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Continued on next page

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DEVELOPMENT CREDITS

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