VANDERBILT UNIVERSITY

MEDICAL CENTER

Vanderbilt Adult Antimicrobial Stewardship Program

VASP Diabetic Foot Infection & Diabetic Foot Osteomyelitis – Inpatient Management

This guidance document is meant to provide general recommendations and does not supersede clinical decision making. It does not include comprehensive recommendations for surgical management (including need for revascularization), wound care, offloading, smoking cessation, or glycemic control.

I. Foundational Principles

a. Do **NOT** use antibiotics to treat uninfected wounds as patient harm outweighs benefit.
b. **ALL** wounds are colonized with microorganisms and superficial wound cultures should not be collected nor used to make treatment decisions.
c. Do **NOT** administer antibiotics to clinically stable patients until deep tissue or operative cultures are obtained.
d. Failure of oral antibiotics used for < 48 hours is **NOT** a reason to use broad-spectrum antibiotics.

II. Diagnosis

a. Based on presence of clinical signs or symptoms of local or systemic infection in patients with diabetes
    i. Inflammation of any part of the foot
    ii. Presence of ≥ 2 SIRS criteria
b. Assess severity based on validated scoring metrics (see Table 1).
c. Use of appropriate imaging modalities (e.g. X-ray or MRI) to determine extent of infection and/or bone involvement at discretion of treating physician.
d. Use of inflammatory markers such as ESR or CRP at baseline may help determine level of inflammation with periodic trending (e.g. weekly) thereafter. Do **NOT** repeat these tests daily.
e. Surgical management and wound care at discretion of treating physician.
f. Appropriate types of cultures:
    i. Deep tissue/wound culture after debridement
    ii. Aseptically collected bone sample when osteomyelitis suspected
    iii. Blood cultures only in patients with systemic findings (e.g. ≥ 2 SIRS criteria)
    iv. Consider obtaining MRSA nasal PCR (ensure collected before nasal decolonization)*

III. MRSA and *P. aeruginosa* Risk Factors

a. MRSA (≥ 1)
    i. Previous MRSA infection or colonization
    ii. Hospitalization within previous 90 days **AND** IV antibiotic use
    iii. IV drug use
    iv. Chronic hemodialysis
b. *P. aeruginosa* (≥ 1)
    i. Previous *P. aeruginosa* infection or colonization
    ii. Water exposure or macerated wounds
    iii. Hospitalization within previous 90 days **AND** IV antibiotic use

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iv. Immunocompromise (solid organ transplant, bone marrow transplant, active chemotherapy, chronic steroids, neutropenia, HIV with CD4 < 200)

IV. Antimicrobial dosing

a. Reference available on the VASP website at the following link.

*MRSA nasal PCR has ~90% negative predictive value for diabetic foot infections.

Table 1: Diabetic Foot Infection Severity Classification

Clinical Criteria	IWGD/IDSA Classification
No systemic or local symptoms or signs of infection	1/Uninfected
Infected (must have ≥ 2 of the following): • Local swelling or induration • Erythema > 0.5 but < 2 cm around the wound • Local tenderness or pain • Local increased warmth • Purulent discharge Rule out other causes of inflammation (e.g. trauma, gout, acute charcot foot, fracture, thrombosis, venous stasis)	2/Mild
Infected (no systemic findings): • Erythema ≥ 2 cm from wound margin (including lymphangitis, deep tissue abscess, gangrene), and/or • Deep tissue involvement (e.g. tendon, muscle, joint) Bone Infection (osteomyelitis)	3/Moderate Add “O”

Infected (with systemic findings):
• Any of the local manifestations above, AND
• At least 2 SIRS criteria
  ○ Temperature > 38℃,
  ○ Heart rate > 90bpm,
  ○ Respiratory rate > 20bpm,
  ○ WBC > 12,000/mm^3
Bone Infection (osteomyelitis)
	4/Severe
	
	Add “O”

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V. Treatment Recommendations

Classification	Pathogens	Empiric Antibiotic Therapy*	Duration of Treatment
1/Uninfected	**Do NOT administer antibiotics. Do NOT culture the wound.**		
2/Mild	GPC (ß-hemolytic streptococci and *S. aureus*)	Preferred: • Cephalexin 500mg PO QID or 1g TID • Cefadroxil 1g PO BID (upon discharge only) Alternative: • Amoxicillin/clavulanate 875/125mg PO BID MRSA only with risk factors: • Doxycycline 100mg PO BID (add to ß-lactam) • Trimethoprim/sulfamethoxazole 5-8mg/kg/day (alone)—**Preferred if severe penicillin allergy**	7 – 14 days
3/Moderate	GPC ± GNR ± anaerobes • Do **NOT** administer antibiotics to clinically stable patients until deep tissue or operative cultures are obtained. • Cultures from the last 6 months may help empiric antibiotic selection. • Adjust empiric antibiotic regimen based on deep culture and susceptibility results	Preferred: • Ampicillin/sulbactam 3g IV Q6H • Ceftriaxone 2g IV daily ± PO metronidazole 500mg Q12H *P. aeruginosa* only with risk factors (change to): • Piperacillin/tazobactam 4.5g IV Q8H • Cefepime 2g IV Q8H ± metronidazole 500mg PO Q12H • Levofloxacin 750mg PO daily ± metronidazole 500mg PO Q12H MRSA only with risk factors (add): • Doxycycline 100mg PO BID • Trimethoprim/sulfamethoxazole 5-8mg/kg/day for SSTI and 8-12mg/kg/day for osteomyelitis • Linezolid 600mg PO BID • Vancomycin (pharmacy consult)	7 – 14 days for soft tissue infection only If osteomyelitis: • 24-48 hours if complete resection of infected tissue • 7-14 days if only residual soft tissue infection • 21 days if residual bone infection with resection or 28-42 days without resection Conversion to PO antibiotics (including osteomyelitis)[‡]: • Active agent available • Functioning GI tract • Clinically stable • Select active agent(s) against recovered pathogen(s)

‡There is no prespecified duration of IV antibiotics required.
*Adjust antibiotic doses according to renal function as needed.

Classification	Pathogens	Empiric Antibiotic Therapy*	Duration of Treatment
4/Severe	GPC (including MRSA) ± GNR ± anaerobes • Cultures from the last 12 months may help empiric antibiotic selection. • Adjust empiric antibiotic regimen based on deep culture and susceptibility results	Preferred: • Ceftriaxone 2g IV daily + metronidazole 500mg PO Q12H **PLUS** • Vancomycin (pharmacy consult), OR • Linezolid 600mg PO BID⁺ *P. aeruginosa* only with risk factors (change to): • Piperacillin/tazobactam 4.5g IV Q8H • Cefepime 2g IV Q8H + metronidazole 500mg PO Q12H ⁺Linezolid is preferred for use in necrotizing soft tissue infections	7 – 14 days for soft tissue infection only If osteomyelitis: • 24-48 hours if complete resection of infected tissue • 7 – 14 days if only residual soft tissue infection • 21 days if residual bone infection with resection or 28 – 42 days without resection Conversion to PO antibiotics (including osteomyelitis) ‡: • Active agent available • Functioning GI tract • Clinically stable • Select active agent(s) against recovered pathogen(s)

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VI. References

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Milner Staub, MD: Adult Antimicrobial Stewardship Director

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