UWTASP
tele-antimicrobial stewardship program

August 23, 2022

Agenda

- Chloe: Diabetic Foot Infections
- Case Discussions
- Open Discussion

Optimizing Antibiotic Treatment of Diabetic Foot Wounds

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Not Covered Here

- Importance of:
  - Assessing for
    - arterial ischemia
    - venous insufficiency
    - protective sensation
    - mechanical problems
  - Debridement, surgical management
  - Offloading

Bacterial Colonization of Wounds

- All chronic wounds become colonized with (pathogenic) bacteria

Diabetic Foot Infections

Infection? 2+ of the following:

-Local swelling or induration

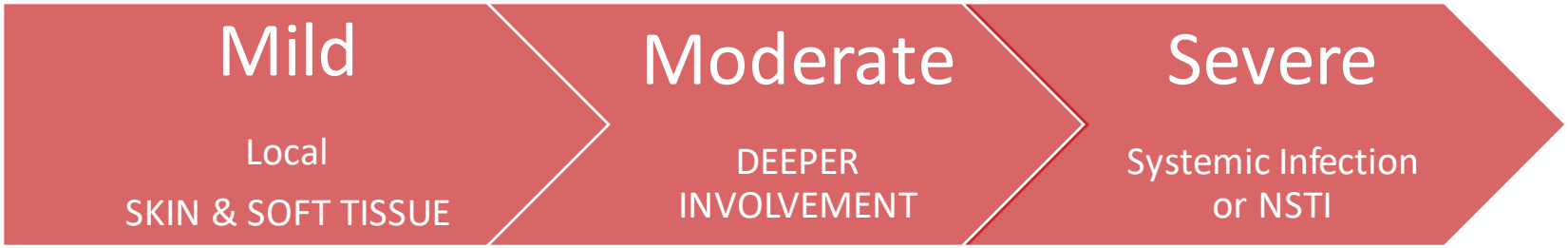
-Erythema

-Local tenderness or pain

-Local warmth

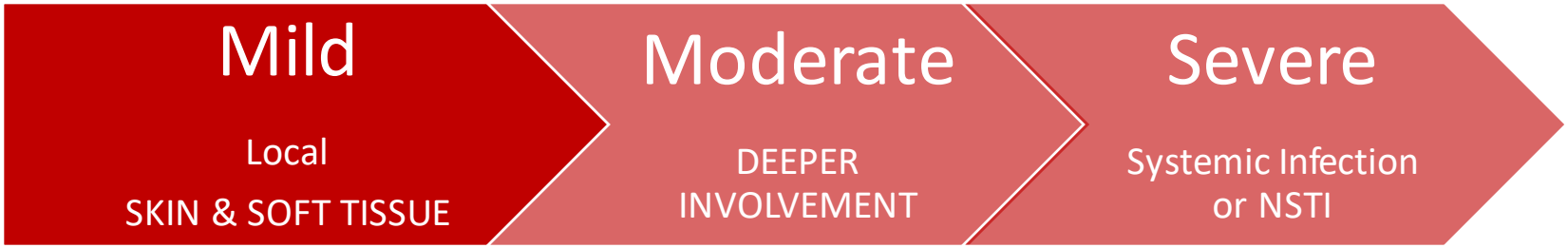
-Purulent discharge (or increase in sanguinous drainage)

Lipsky BA, IDSA Guidelines: Diagnosis and Treatment of DM Foot Infections, CID, 2012



- UNINFECTED: none or <2 s/sx of infection

- MICRO: Polymicrobial colonization
- Urgency of Treatment: NONE
- Culture: PLEASE DON'T
- Antibiotics: NONE
- Duration:



- Small amount of erythema (<2cm)
- Exclude other causes of inflammation

- **MICRO:**

Staph and Strep

- **Culture:**

Low yield, esp if no recent abx

- **Antibiotics:**

cephalexin +/- doxy or TMP/SMX

- **Duration:**

1 week

Lipsky BA, IDSA Guidelines: Diagnosis and Treatment of DM Foot Infections, CID, 2012

- Larger area of erythema (>2cm) or deeper tissue involvement (abscess, osteo, septic arthritis)
- No systemic symptoms

- **MICRO:**

Staph, Strep, Gram Negs, +/- anaerobes

- **Urgency of Treatment:**

Hold to optimize cultures

- **Culture:**

- **Antibiotics:**

Lipsky BA, IDSA Guidelines: Diagnosis and Treatment of DM Foot Infections, CID, 2012

Pseudomonas Interlude

- Water bug
- Pseudomonas is more common in diabetic foot infections in the tropics
- Rare isolate (5%) in an urban underserved patient population in Denver[1]
- RCT comparing ertapenem to pip/tazo for mod/severe infections was equivalent[2]
- Consider it with foot soaking or other water exposure

Young H, Journal of the American Podiatric Medical Association, 2015 Mar;105(2):125-9.
Lipsky BA, SIDESTEP trial, Lancet. 2005 Nov 12;366(9498):1695-703.

- Larger area of erythema (>2cm) or deeper tissue involvement (abscess, osteo, septic arthritis)
- No systemic involvement

- **MICRO:**

Staph, Strep, Gram Negs, +/- anaerobes

- **Culture:**

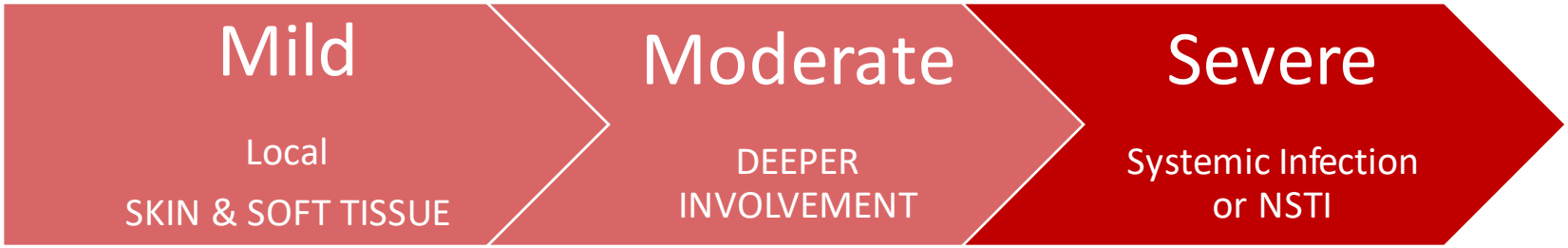
Deep tissue after debridement, avoid swab

- **Antibiotics:**

Empiric amox/clav or CTX + metro

  - Add MRSA coverage if h/o MRSA
  - Tailor to culture data

Lipsky BA, IDSA Guidelines: Diagnosis and Treatment of DM Foot Infections, CID, 2012



- Concern for sepsis, life or limb threatening infection

- **MICRO:**

Same (Staph, Strep, GNR), anaerobes. Polymicrobial likely!

- **Urgency of Treatment:**

Immediate

- **Culture:**

Deep specimen when able

- **Antibiotics:**

Empiric CTX + metro + vanco

  - Tailor to culture data if able

Lipsky BA, IDSA Guidelines: Diagnosis and Treatment of DM Foot Infections, CID, 2012

Additional Questions in Antibiotic Treatment

- For Mild/Moderate
  - add MRSA coverage if h/o MRSA
  - Swab just to look for MRSA in mild Infection?
- Anti-Pseudomonal coverage if significant water exposure
- Penicillin allergies?
  - 10% of the population has then
    - 10% of the time they are real

Osteomyelitis

- Increased likelihood of OM:
  - Visible bone, probe to bone
  - Ulcer > $2cm^2$
  - Ulcer duration longer than 2 weeks
  - ESR > 70 mm/h
  - Ulcers overlaying bony prominence
- Xray is a great initial test: cortical erosion, periosteal reaction, mixed lucency, sclerosis
- MRI if early infection
- Not a treatment emergency; get that culture

Helpful Tools

Nebraska Medicine

SERIOUS MEDICINE. EXTRAORDINARY CARE.®

Microbial Epidemiology of DFI N=49 cases*		
	n	Percent
MSSA	23	47%
***B*-Hemolytic Streptococci**	19	39%
Proteus sp.	7	14%
Coag-Neg Staph	6	12%
MRSA	4	8%
Enterococcus sp.	4	8%
Enterobacter sp.	3	6%
E. coli	3	6%
Klebsiella sp.	3	6%
Pseudomonas aeruginosa	2	4%

* Of 111 cases, only 49 had culture

clinicalpath-dfi_institutional_guideline_final.pdf(unmc.edu)

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Antibiotic GUIDE

AnitBiotic-Guide-2021.pdf (uwtasp.org)

ORGAN SYSTEM:	SYNDROME:
Skin and Soft Tissue	Adult Diabetic Foot Infection

RECOMMENDED TREATMENT AND DURATION

FIRST LINE

Cephalexin 500mg PO QID OR Amoxicillin-clavulanate 875/125 mg PO BID

If MRSA concern add: Doxycycline 100 mg PO BID or TMP/SMX DS 1 tab PO BID

SECOND LINE

(Severe PCN Allergy): Clindamycin 300 mg PO TID

Duration for mild infections of soft tissue only is 1-2 weeks.

MODERATE: Local infection with or involvement of deeper structures (abscess, osteomyelitis, septic arthritis) or more extensive erythema (>2 cm spread or associated lymphangitis) without systemic signs of inflammation

Continued ›

Take-Aways

1) If you culture it, it will grow
   OPTIMIZE CULTURES
2) Not all foot wounds are infected
3) Micro is influenced by extent of the infection
4) If you treat them, they will resist
   GIVE THE NARROWEST REGIMEN POSSIBLE