This will be an Interactive Session!
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Respone at PollEv.com/masec

Yes

Responses to surveys and polls will be recorded and used to generate and improve future webinar content
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Associate Hospital Epidemiologist, Barnes-Jewish Hospital
Associate Medical Director for Infection Prevention, Washington University School of Medicine
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Disclosures

• KH a collaborator on an investigator initiated study of candidal infections funded by Astellas Pharmaceuticals
Today’s Discussants

• Kevin Hsueh MD
• Michael Durkin MD MPH
• Erin Rachmiel, PharmD BCPS
Case 1

Case Details: A 57 year old woman, no hx of medical problems was admitted from her doctor’s office for lower extremity pain and swelling of 2 days duration

• On admission she was febrile to 100.7 and tachycardic to 118 BPM, but normotensive.

• WBC of 12, normal Cr.

• Her HPI describes a large area of redness of the L thigh consistent with cellulitis

• She was started on the following
  • IV vancomycin 1g q12h
  • IV ceftriaxone 1g q24h

• At 48 hours she is now afebrile and normotensive, normal rate, and normal WBC count. But the attending physician wants to keep her on IV's because “she got better on them.”
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Expert Discussion
- Choice of Agents
- Agent Pharmacology
- Approach to the Physician
- Duration of Therapy
- Systemic Issues/Solutions
Expert Discussion: Key Points

• Choice of Agents
  • Vancomycin (MRSA) probably not needed for nonpurulent cellulitis, regardless of severity
  • Ceftriaxone may be overly broad for pt with no hx of medical risk factors

• Agent Pharmacology
  • Depending on weight, vancomycin 1g q12h may or may not be the right dose

• Approach to the Physician
  • Propose de-escalation plans that cater to provider concerns

• Duration of Therapy/De-escalation
  • Continuation of broad IV therapy is not needed once pt stabilizes
  • Conversion to oral agents (cephalexin, amoxicillin, dicloxacillin, clindamycin) at 24-48 hours if pt stable is very reasonable
  • Sometimes a short monitoring period on oral therapy may be necessary
  • 5 days of total therapy generally equivalent to longer courses if patient improving

• Systemic Issues/Solutions
  • Standardized treatment guidelines or ordersets
Common Pitfall: “All Cellulitis Is the Same”

**NONPURULENT**
- Necrotizing Infection / Cellulitis / Erysipelas

**MANAGEMENT OF SSTIs**

- **Severe**
  - EMERGENT SURGICAL INSPECTION / DEBRIDEMENT
    - Rule out necrotizing process
  - EMPIRIC Rx
    - Vancomycin **PLUS** Piperacillin/Tazobactam
  - DEFINED Rx (Necrotizing Infections)
    - Monomicrobial Streptococcus pyogenes
      - Penicillin **PLUS** Clindamycin
    - Clostridial sp.
      - Penicillin **PLUS** Clindamycin
    - Vibrio vulnificus
      - Doxycycline **PLUS** Cefazidime
    - Aeromonas hydrophila
      - Doxycycline **PLUS** Ciprofloxacin
    - Polymicrobial
      - Vancomycin **PLUS** Piperacillin/Tazobactam

- **Moderate**
  - INTRAVENOUS Rx
    - Penicillin or Ceftriaxone or Cefazolin or Clindamycin
  - ORAL Rx
    - Penicillin VK or Cephalosporin or Dicloxacillin or Clindamycin
  - DEFINED Rx
    - MRSA
      - SEE EMPIRIC
    - MSSA
      - Nafcillin or Cefazolin or Clindamycin

- **Mild**
  - ORAL Rx
    - Penicillin VK or Cephalosporin or Dicloxacillin or Clindamycin
  - DEFINED Rx
    - MRSA
      - TMP/SMX or Doxycycline

**PURULENT**
- Furuncle / Carbuncle / Abscess

- **Severe**
  - I & D
  - C & S
  - DEFINED Rx
    - MRSA
      - TMP/SMX or Doxycycline

- **Moderate**
  - I & D
  - C & S
  - DEFINED Rx
    - MRSA
      - TMP/SMX or Doxycycline

- **Mild**
  - I & D

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1 Since daptomycin and televancin are not approved for use in children, vancomycin is recommended; clindamycin may be used if clindamycin resistance is <10-15% at the institution.
<table>
<thead>
<tr>
<th>Non-purulent Cellulitis</th>
<th>Purulent Cellulitis</th>
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</thead>
<tbody>
<tr>
<td><strong>Organisms</strong></td>
<td></td>
</tr>
<tr>
<td>Streptococci (usually group A strep)</td>
<td>Staphylococcus aureus</td>
</tr>
<tr>
<td><strong>Primary Therapy</strong></td>
<td></td>
</tr>
<tr>
<td>Antibiotics</td>
<td>Incision &amp; Drainage/Debridement</td>
</tr>
<tr>
<td><strong>Culture Useful?</strong></td>
<td></td>
</tr>
<tr>
<td>Generally No</td>
<td>Generally Yes</td>
</tr>
<tr>
<td><strong>IV Antibiotic Agents</strong></td>
<td></td>
</tr>
<tr>
<td>Cefazolin</td>
<td>Vancomycin</td>
</tr>
<tr>
<td>Clindamycin</td>
<td>Linezolid</td>
</tr>
<tr>
<td>Penicillin</td>
<td>Daptomycin</td>
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<tr>
<td>Ceftriaxone</td>
<td>Ceftaroline</td>
</tr>
<tr>
<td><strong>Oral Step Down Agents</strong></td>
<td></td>
</tr>
<tr>
<td>Cephalexin</td>
<td>MRSA (TMP/SMX, doxycycline)</td>
</tr>
<tr>
<td>Penicillin VK</td>
<td>MSSA (Cephalexin, dicloxacillin)</td>
</tr>
<tr>
<td>Dicloxacillin</td>
<td></td>
</tr>
<tr>
<td>Clindamycin</td>
<td></td>
</tr>
</tbody>
</table>
Common Pitfall: “It’s Got Worse”

• Early Cellulitis

• Healing Cellulitis
Questions on the Case?

💡 When poll is active, respond at PollEv.com/masec

📞 Text MASEC to 37607 once to join

🔍 No responses received yet. They will appear here...
Any Cases to Discuss? Write Down Your Webinar Screen-Name if Yes.

Respond at PollEv.com/masec

“Yes- KH”
Case 2

Case Details: A 63 year old male with a history of hypertension, congestive heart failure, and obesity presents to your emergency department with left sided leg swelling and discomfort

• Vitals in the ED 37.4 114 146/92 18 94% RA
• WBC of 10.2, normal Cr.
• Leg shows chronic venous stasis changes with left>right sided edema with some warmth.

• He was started on the following
  • vancomycin IV 1g q12h
  • IV zosyn 4.5g IV q6h
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Expert Discussion

- Choice of Agents
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Case 2: Are Certain Antibiotic Combinations Worse Than Others

- Yes
- No
- Maybe
Which combinations should you avoid?
We try to avoid the following combination...

- Vancomycin and piperacillin-tazobactam (Zosyn®)
- This combination is associated with 3x higher odds of acute kidney injury than vancomycin alone...

[Diagram showing results of a study with data points and a forest plot]

Hammond et al. CID 2017
Case 2: Are physicians/pharmacists aware of this? And how would we get them to change practice?
Take home message

• The combination of vancomycin and piperacillin-tazobactam is strongly associated with nephrotoxicity.
  • There are some limitations to the data (e.g. sicker patients)

• You can use results like these to help persuade physicians to narrow antibiotic therapy
  • Increased adverse event rates
  • Increased hospital length of stay
  • Hard to discharge on a q6 hour antibiotic
  • No better place than a hospital to observe a patient on a narrower spectrum agent
Case 2: Questions on the Case?

🌟 No responses received yet. They will appear here...
Thanks Everybody For Attending!
See You All Next Time!

Conference Feedback