JHH Department of Antimicrobial Stewardship

Quarterly Newsletter
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Update on Ceftolozane/tazobactam

Ceftolozane/tazobactam is an antipseudomonal agent with activity against drug resistant *Pseudomonas* isolates.

Current FDA approvals for ceftolozane/tazobactam:

- Complicated UTI at a dose of **1.5 g IV q8h**
- Complicated IAI at a dose of **1.5 g IV q8h**
- Hospital-acquired/ventilator-associated pneumonia at a dose of **3g IV q8h**

Recent review of ceftolozane/tazobactam usage at JHH revealed the following:

- 76% of MDR Pseudomonas tested were susceptible
- 6 of 8 treated patients who had follow up cultures developed emergence of resistance, while another 2 had an MIC creep.
- 67% of patients had an unfavorable clinical outcome (death, recurrence, lack of response)

Cost: $650 per day for 3 g IV q8h

ASP recommends using **3 g IV q8h** for all infections caused by MDR Pseudomonas (e.g., bacteremia, osteomyelitis, complicated-intra-abdominal infection) with the exception of UTIs. Consider extending infusion to 3 hours if normal renal function when possible.

Update on Diabetic Foot Infection Management

We recently evaluated antibiotic use in patients with diabetic foot infections (DFI) admitted to JHH.

- Most patients were initially treated with vancomycin and piperacillin/tazobactam. However, *Pseudomonas* was cultured in only 9% of patients.
- Common pathogens: MSSA, (25%), *E. faecalis* (25%), MRSA (20%).
- If patient had a prior culture or nasal swab positive for MRSA within the last 12 months, there was a 50% chance that MRSA would be found on a subsequent infection.
- If patient had a prior culture positive for *Pseudomonas* within the last 12 months, there was a 30% chance that *Pseudomonas* would be found on a subsequent infection.
- Since most patients have received antibiotics prior to going to the OR and growth of anaerobes is likely to be inhibited with antibiotics, anaerobic coverage is recommended.
  - *In a recent study when antibiotics were given for at least 3 days before surgery, tissue cultures were still positive for S. aureus, Enterococci and Enterobacteriaceae[1] but not Streptococci and anaerobes*

Based on these data, ASP recommends the following empiric antibiotic regimens for DFI:

1.) **If Sepsis or ICU admission:** Vancomycin + Cefepime + Metronidazole
   a. Preferred due to increased nephrotoxicity associated with vancomycin plus pip/tazo combination[2]
2.) **No sepsis or ICU admission:** Ceftriaxone + Metronidazole
   a. ***No sepsis/ICU admission but prior MRSA:*** Vancomycin + Ceftriaxone + Metronidazole
   b. ***No sepsis/ICU admission but prior Pseudomonas:*** Cefepime + Metronidazole

Early ID consultation is recommended in these patients to assist with antibiotic selection.

Sara, Valeria, Edina & Kate.

References:
[1]Young et al. Open Forum Infect Dis. 2017 Feb 11:4(1)
[2]Rutter et al. Antimicrob Agents & Chemother., 2017 Jan 24:61(2)2016.

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