Antibiotic Stewardship at MetroWest Medical Center

Colleen Grocer, RPh, BCOP
Co-Chair, Antibiotic Stewardship Committee
Antibiotic Stewardship Committee

• Subcommittee of Pharmacy and Therapeutics. Also reports to Infection Control Committee.
• Started July 2010
• Membership includes:
  – Infectious disease physicians
  – Pharmacists
  – Microbiologists
  – Infection Control Practitioners
  – Quality Management
Antibiotic Stewardship Committee

- Components of MWMC AS program
  - Development of guidelines, clinical pathways, standard order forms
  - Formulary restriction recommendations
  - Parenteral to oral therapy conversions
  - Clinical interventions (i.e., de-escalation)
  - Staff education
  - Monitor outcomes (i.e., C. difficile rate)
Antibiotic Stewardship Focus on C.Diff Infections

• Fluoroquinolone Restriction
  – Recommendations for alternative treatment
  – Education for physicians
  – Tracking fluoroquinolone use
    • 2010 vs 2009
      – Levofloxacin tablet usage decreased by 17%
      – Levofloxacin IV usage decreased by 30%
    • 2010 vs 2011
# MWMC Pharmacy and Therapeutics Committee
## Fluoroquinolone Alternative Recommendations

<table>
<thead>
<tr>
<th>Infection</th>
<th>Severity</th>
<th>First Choice</th>
<th>Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumonia (non-HAP/VAP)</td>
<td>Mild (PSI 1,2)</td>
<td>Azithromycin*</td>
<td>Fluoroquinolone (FQ)</td>
</tr>
<tr>
<td>Pneumonia (non-HAP/VAP)</td>
<td>Moderate (PSI 3,4)</td>
<td>Ceftriaxone/Azithromycin</td>
<td>Fluoroquinolone for allergic patients</td>
</tr>
<tr>
<td>Legionella</td>
<td></td>
<td>Fluoroquinolone/Azithromycin</td>
<td></td>
</tr>
<tr>
<td>Skin and Soft Tissue Infection</td>
<td></td>
<td>Beta lactams</td>
<td></td>
</tr>
<tr>
<td>Pyelonephritis**</td>
<td>Initial Therapy</td>
<td>Ceftriaxone</td>
<td></td>
</tr>
<tr>
<td>Intraabdominal Infection, biliary</td>
<td></td>
<td>Ampicillin/Sulbactam or</td>
<td>Fluoroquinolone and Metronidazole undesirable except in allergic patients</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cefoxitin</td>
<td></td>
</tr>
<tr>
<td>Intraabdominal infection, peritonitis</td>
<td>Mild/Moderate</td>
<td>Cefoxitin (preferred) or</td>
<td>Fluoroquinolone and Metronidazole undesirable except in allergic patients</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ceftriaxone/Metronidazole (2\textsuperscript{nd} line) or Ertapenem (3\textsuperscript{rd} line)</td>
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</tr>
<tr>
<td>Intraabdominal infection, peritonitis</td>
<td>Severe</td>
<td>Piperacillin/Tazobactam or</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Imipenem or Cefozide/Metronidazole</td>
<td>Gentamicin plus metronidazole if beta lactam allergy</td>
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<td></td>
<td></td>
<td></td>
<td>Tigecycline is an option for allergic patients or resistant bugs</td>
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</tbody>
</table>

* Azithromycin monotherapy only for patients less than 65 years without comorbidities

** For uncomplicated UTIs – Sulfamethoxazole/trimethoprim (Bactrim), nitrofurantoin, FQ preferable over beta lactams (FQ preferred only in allergic patients or if bug only sensitive to FQ)

**ID approval required for:** Piperacillin/Tazobactam (Zosyn), Imipenem/Cilastatin (Primaxin), Tigecycline (Tygacil)
Antibiotic Stewardship Focus on C.Diff Infections

• Clostridium difficile surveillance letter to physicians
  – Developed as a means to educate about appropriate antibiotic use

• Reinforce use of bleach disinfectant in environmental cleaning and bedside curtain change at discharge of C. diff patients

• Reinforce hand hygiene with soap and water in addition to the hand sanitizer
Memo

To: 
From: Chinhak Chun MD., Karin Hjalmarson MD.
Co-Chairs, Infection Control Committee

Date: 
Re: Clostridium difficile Surveillance

We are alerting you that your patient, MRN: __________ was diagnosed with C. difficile associated disease on ____________.

The Infection Control Department has determined that it was most likely associated with the antibiotic(s) treatment / prophylaxis administered on ____________.

This information is being shared in hopes of providing a learning experience in prescribing antibiotics as well as an opportunity to improve our practices. Using antibiotics only when indicated and choosing narrow spectrum agents in as short a course as possible can minimize the risk of C. difficile associated disease.

Please do not hesitate to contact us for any question or suggestions.
Education

• Reducing antibiotic use and duration of therapy
  – Urine culture (rather than symptoms)-directed “therapy” for UTI
  – Chest X-ray (rather than symptoms)-based “therapy” for pneumonia
  – Downgrading to monotherapy from the two-drug regimen for community acquired pneumonia
  – First generation cephalosporin + probenecid \textit{vs.} Third generation cephalosporin
  – Three-day automatic stop for all antibiotic with notification to clinicians
Feedback

• Immediate feedback to the prescriber
  – By peers (chief resident, senior resident, etc.)
  – By ID specialists
  – By pharmacy
  – Dear Dr. letter
    • Antibiogram
    • Memo
    • Replacement table
    • Other references