Antimicrobial Susceptibility Testing of Urine Isolates from Veterans to Guide Empiric Therapy of Suspected Urinary Tract Infection

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Methods

• Urinary tract infection (UTI) is common among patients at Veterans Affairs Medical Centers (VAMCs), many of whom are elderly men with underlying medical or urological problems.
• Most UTI treatment guidelines address uncomplicated UTI in women and presume knowledge of local uropathogen susceptibility patterns.
• However, such data often are unknown or are inferred from E. coli.
• To inform selection of empiric therapy for UTI at our VAMC, we compiled susceptibility data for one year's urine isolates, overall and stratified by organism category.

Results

• Among the 2,109 total urine isolates, E. coli predominated (32%), followed by Enterococcus, Klebsiella, Staphylococcus, and Pseudomonas (Figure).
• The most active oral agents (by percent susceptible) were trimethoprim/sulfamethoxazole, fluoroquinolones, and nitrofurantoin (Table).
• The most active intravenous agents were imipenem (93%), piperacillin/tazobactam (91%), aminoglycosides (77–81%), cefepime (74%), ertapenem (69%), and 3rd-gen. cephalosporins (65–69%).
• Antibiotic rank order (by percent susceptible) differed greatly for Gram-positives vs. Gram-negatives, and for E. coli vs. other Gram-negatives (Table).

TABLE. Most active oral agents and percent susceptible.

<table>
<thead>
<tr>
<th>Antimicrobial Agent</th>
<th>Gram-positive (n = 561)</th>
<th>E. coli (n = 679)</th>
<th>Gram-negative (n = 1548)</th>
<th>All (n = 2109)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trimethoprim/sulfamethoxazole</td>
<td>96% if Enterococcus susceptible</td>
<td>77% 72%</td>
<td>79% if Enterococcus susceptible</td>
<td>60% if Enterococcus resistant</td>
</tr>
<tr>
<td>Fluoroquinolones</td>
<td>45 to 50%</td>
<td>72%</td>
<td>75%</td>
<td>68%</td>
</tr>
<tr>
<td>Nitrofurantoin</td>
<td>95%</td>
<td>91%</td>
<td>53%</td>
<td>64%</td>
</tr>
</tbody>
</table>

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FIGURE. Species distribution of urine isolates (% of 2,109).