Trimethoprim-Sulfamethoxazole May No Longer Be Acceptable for the Treatment of Acute Uncomplicated Cystitis in the United States

To the Editor—This letter is in response to the 2010 Clinical Practice Guidelines for the Treatment of Acute Uncomplicated Cystitis and Pyelonephritis in Women by the Infectious Diseases Society of America and the European Society of Clinical Microbiology and Infectious Diseases [1] that recommended trimethoprim-sulfamethoxazole (TMP-SMX) as an appropriate treatment choice for acute uncomplicated cystitis if local resistance rates of uropathogens do not exceed 20%.

We are concerned about the increasing resistance rates of urinary Escherichia coli isolates to TMP-SMX in the United States. As shown in data from The Surveillance Network Database—USA (Eurofins-Medinet) in Table 1, our analysis of urinary E. coli isolates (n = 3,170,187) from outpatient women aged 16–45 years in the United States from 2000 to 2010 suggests that resistance to TMP-SMX in 2010 exceeded the “threshold of 20% at which the agent is no longer recommended for empirical treatment of acute cystitis” [1]. E. coli resistance to nitrofurantoin during this same period remained stable, whereas resistance to ciprofloxacin increased from 1.2% in 2000 to 7.1% in 2010. Of interest, we also observed a plateau in E. coli resistance to ciprofloxacin during 2008–2010 that was not replicated in other age groups (data not shown).

The details of this surveillance system are described elsewhere [2, 3, 4]. The limitations of our data are the uncertain extent to which in vitro resistance translates into clinically relevant resistance [5]. Nevertheless, because of the large number of isolates involved, the wide geographic distribution of clinical laboratories in the United States submitting data, and the large number of institutions reporting real-time resistance data, we believe that these data merit consideration.

Our data analysis is consistent with the recommendations that nitrofurantoin should be the first line of empirical treatment and fluoroquinolones be reserved as an alternative choice for acute uncomplicated cystitis. However, we believe that TMP-SMX may not be an acceptable choice for empirical treatment of acute uncomplicated cystitis in the United States.

Acknowledgments

Potential conflicts of interest. All authors: No reported conflicts.

All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed in the Acknowledgments section.

Guillermo V. Sanchez,1 Ronald N. Master,2 and Jose Bordon2

1School of Public Health and Health Services, George Washington University, and 2Providence Hospital, Washington, DC

Table 1. Annual Rates of Resistance in Urinary Escherichia coli Isolates to Select Antimicrobials Among Outpatient Women of Childbearing Age (16–45 y), 2000–2010

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<tbody>
<tr>
<td>TMP-SMX</td>
<td>667,648</td>
<td>17.5</td>
<td>16.9</td>
<td>16.7</td>
<td>17</td>
<td>17.3</td>
<td>17.7</td>
<td>18.3</td>
<td>18.8</td>
<td>19.7</td>
<td>19.6</td>
<td>20.8</td>
<td>3.3</td>
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<tr>
<td>Ciprofloxacin</td>
<td>592,555</td>
<td>1.2</td>
<td>1.4</td>
<td>1.9</td>
<td>2.4</td>
<td>2.9</td>
<td>4.1</td>
<td>5.4</td>
<td>6.2</td>
<td>7.2</td>
<td>7</td>
<td>7.1</td>
<td>5.9</td>
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<tr>
<td>Nitrofurantoin</td>
<td>646,516</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.4</td>
<td>0.4</td>
<td>0.6</td>
<td>0.6</td>
<td>0.6</td>
<td>0.5</td>
<td>0.5</td>
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<tr>
<td>Amox-Clav</td>
<td>255,728</td>
<td>3.7</td>
<td>3.3</td>
<td>4.3</td>
<td>3.6</td>
<td>3</td>
<td>3.6</td>
<td>4.7</td>
<td>6.7</td>
<td>7.6</td>
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<td>4</td>
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<tr>
<td>Ampicillin</td>
<td>657,246</td>
<td>39.7</td>
<td>38.9</td>
<td>38.8</td>
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<td>37.4</td>
<td>38</td>
<td>38.8</td>
<td>39</td>
<td>39.6</td>
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<td>40.2</td>
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<tr>
<td>Cephalothin</td>
<td>170,561</td>
<td>12</td>
<td>14.1</td>
<td>12.5</td>
<td>12</td>
<td>11.5</td>
<td>14.9</td>
<td>15.3</td>
<td>13.4</td>
<td>12.8</td>
<td>11.7</td>
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<tr>
<td>Tetracycline</td>
<td>179,933</td>
<td>23.1</td>
<td>22.2</td>
<td>22.4</td>
<td>20.8</td>
<td>19.7</td>
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<td>21.1</td>
<td>20.4</td>
<td>20.2</td>
<td>20.3</td>
<td>20.1</td>
<td>−3</td>
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</tbody>
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NOTE. Isolates demonstrating intermediate susceptibility were not counted as resistant. Amox-Clav, amoxicillin-clavulanate; TMP-SMX, trimethoprim-sulfamethoxazole.

References


Corresponding author: Jose Bordon, MD, PhD, Providence Hospital, 1150 Varnum St NE, Washington, DC 20017, USA (jbordon@provosp.org).

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