**RESULTS**

52 64 - - - - - 52/36
82 88 - - - - 82/12
76 81 - - - - 76/19
82 83 85 - - - 82/17
50 55 50/50
54 68 - - - - - 54/32
46 48 - - - - - - - 46/52
87 89 - - - - 87/11
60 64 - - 60/36
89 92 - - 89/8

The objective of the present report was to establish the frequency of occurrence and the antimicrobial susceptibility of urinary tract infections in United States hospitals.

Non-fermentative Gram-negative bacilli (NFB) are primarily opportunists, causing infections mainly in seriously ill hospitalized patients. These organisms have the potential to spread horizontally on fomites or on the hands of medical personal, and recent exposure to broad spectrum antimicrobial agents represents an important risk factor for acquisition of these organisms.

Among the NFB (Table 1), *P. aeruginosa* was the most frequently isolated pathogen (11,968 isolates; 18.7%), followed by *Acinetobacter* spp. (7,488 isolates; 18.7%) and *S. maltophilia* (2,488 isolates; 11.4%). These three pathogens accounted for more than 90% of the isolates processed. *Acinetobacter* spp. were resistant to 50% or more of the isolates tested.

The antimicrobial susceptibility patterns of *P. aeruginosa* (Table 2, Table 3) and *Acinetobacter* spp. (Table 3) are summarized. Since these pathogens generally present multiple resistance mechanisms and resistance patterns are a function of the antimicrobial therapy, we analyzed the susceptibility patterns of isolates from patients treated with any antimicrobial regimen for a minimum of 3 days. *P. aeruginosa* isolates were tested against 28 antimicrobial agents. The most active agents were trimethoprim/sulfamethoxazole, gatifloxacin, and levofloxacin (5-6% resistant). The overall spectrum of activity for antimicrobials tested against *P. aeruginosa* is shown in Table 4. Ciprofloxacin showed the highest level of activity against *P. aeruginosa* isolates (95% susceptible). The most active agents against *Acinetobacter* spp. were the carbapenems, imipenem (11% resistant) and MEM (12% resistant). Few compounds showed reasonable activity against SM, with only 8% of isolates being resistant to this aminoglycoside (Table 2). Meropenem (MIC90, 8 µg/ml) was the most active agent tested against *Acinetobacter* spp. with only 3% of isolates being resistant. Resistance rates for these pathogens were not uniformly high as noted in Table 5.

**INTRODUCTION**

The SENTRY Antimicrobial Surveillance Program (formerly known as the SENTRY Program) is a collaborative database of antimicrobial susceptibility results. The SENTRY Program was initiated in 1997 and primarily reports susceptibility results from the United States. This report presents antimicrobial susceptibility results from the SENTRY Program worldwide (1997-2001). The SENTRY database currently contains 18,569 strains of non-fermentative Gram-negative bacilli. The database includes 18,569 strains of non-fermentative Gram-negative bacilli isolated from SENTRY Program hospitals worldwide (1997-2001).

### TABLE 1.  
Table of antimicrobial susceptibility patterns for *P. aeruginosa* isolates in the SENTRY Antimicrobial Surveillance Program worldwide.  

<table>
<thead>
<tr>
<th>Antimicrobial</th>
<th>N (% of isolates resistant)</th>
<th>S (90% CI)</th>
<th>R (90% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ciprofloxacin</td>
<td>1 (0.06)</td>
<td>99.00%</td>
<td>0.94%</td>
</tr>
<tr>
<td>Tobramycin</td>
<td>2 (0.12)</td>
<td>98.00%</td>
<td>2.00%</td>
</tr>
<tr>
<td>Amikacin</td>
<td>8 (0.5)</td>
<td>95.00%</td>
<td>5.00%</td>
</tr>
<tr>
<td>Gentamicin</td>
<td>22 (1.4)</td>
<td>78.00%</td>
<td>22.00%</td>
</tr>
<tr>
<td>Imipenem</td>
<td>31 (2.0)</td>
<td>78.00%</td>
<td>22.00%</td>
</tr>
<tr>
<td>MEM</td>
<td>34 (2.1)</td>
<td>98.00%</td>
<td>2.00%</td>
</tr>
<tr>
<td>Meropenem</td>
<td>36 (2.2)</td>
<td>98.00%</td>
<td>2.00%</td>
</tr>
<tr>
<td>Piperacillin</td>
<td>71 (4.5)</td>
<td>95.00%</td>
<td>5.00%</td>
</tr>
<tr>
<td>Ceftazidime</td>
<td>1,128 (71.3) (four strains)</td>
<td>28.00%</td>
<td>72.00%</td>
</tr>
<tr>
<td>Ticarcillin</td>
<td>72 (4.5)</td>
<td>96.00%</td>
<td>4.00%</td>
</tr>
<tr>
<td>Ticarcillin/Clavulanate</td>
<td>16 (1.0)</td>
<td>99.00%</td>
<td>1.00%</td>
</tr>
</tbody>
</table>

**CONCLUSIONS**

- **Antibiotics, enzymes, and polymerase provided the best coverage against *P. aeruginosa* (8-18% resistance rates). These results are similar to those discovered by other investigators and may also provide guidance to select the most appropriate empirical antimicrobial therapy for *P. aeruginosa* infections.
- *Acinetobacter* and *P. aeruginosa* showed resistance to all antimicrobial agents tested. Resistance rates for these pathogens were uniformly high across all geographical regions.
- The antimicrobial susceptibility patterns of *Acinetobacter* spp. may vary geographically, but the cyclical pattern (penicillin and polymyxin are usually the first-line agents for treatment) and the polymyxin (32% resistance) and gentamicin (32% resistance) may be used in some geographic regions.
- Our results confirm the excellent in vitro activity of imipenem/gentamicin (97% resistance) against *P. aeruginosa* isolates. In addition, our results indicate that the newer fluoroquinolones (gatifloxacin, meropenem) have limited activity against multidrug-resistant *P. aeruginosa* isolates.
- Comprehensive worldwide surveillance programs remain extremely important to guide empiric antimicrobial therapy for newly isolated multidrug-resistant *P. aeruginosa* that are not routinely treated due to the risk of sulbactam/sulbactam resistance.

**SELECTED REFERENCES**

- The JONES Group/JMI Laboratories, North Liberty, IA. Spectrum of Activity for Antimicrobials Tested Against Non-Fermentative Gram-Negative Bacilli (18,569 Strains) Isolated in the SENTRY Antimicrobial Surveillance Program (1997-2001).