Multi-drug Resistance in the Most Prevalent Invasive Streptococcus pneumoniae (SPN) Serotypes (STs) Post PCV-13 Introduction in Canada

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ABSTRACT

Background: The 2010 Canadian Antimicrobial Resistance Surveillance System (CARS) study demonstrated that 13.1% of S. pneumoniae isolates in Canada were MDR and that the most prevalent serotypes among these MDR isolates were 7F, 23F, 14F, 6A, and 19F. This study assessed the prevalence and E/S profiles of the 15 most common S. pneumoniae serotypes post-PCV-13.

Materials & Methods: Serotyping was performed on 194 S. pneumoniae isolates utilizing the Quellung reaction with group, type, and factor specific conjugate sera. MIC testing for each isolate was also performed.

RESULTS

Table 4. Demographics of the common (≥5) multi-drug resistant (MDR) S. pneumoniae Serotype by Isolate

<table>
<thead>
<tr>
<th>Age Group</th>
<th>MDR Serotypes</th>
<th>MDR Isolates</th>
<th>MDR Isolate %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4 years</td>
<td>7F, 14F, 6A, 19F</td>
<td>17</td>
<td>8.8</td>
</tr>
<tr>
<td>5-19 years</td>
<td>7F, 14F, 23F, 6A</td>
<td>29</td>
<td>15.0</td>
</tr>
<tr>
<td>20-49 years</td>
<td>7F, 14F, 23F, 6A</td>
<td>35</td>
<td>18.3</td>
</tr>
<tr>
<td>≥50 years</td>
<td>7F, 14F, 23F, 6A</td>
<td>38</td>
<td>19.8</td>
</tr>
</tbody>
</table>

CONCLUSIONS

1. PCV-13 provided coverage of 49.2% of invasive Canadian isolates tested by CARA from 2011. Comparative, PCV-7 and PnDV-CV provided coverage of 5.8% and 5.2%, respectively.

2. This study demonstrated that the most prevalent serotypes among invasive S. pneumoniae in Canada post-PCV-13 were 23F, 14F, 6A, and 19F.

3. The study had the following limitations: 1) A total of 194 isolates were analyzed and 2) The isolates were collected from various Canadian laboratories.

REFERENCES


