Antistaphylococcal Activity of MK-2764 / PTK 0796 Compared to Other Agents

**ABSTRACT**

The past few years have witnessed an extremely worrisome increase of life-threatening infections caused by community- and hospital-acquired Staphylococci. Resistance to multiple agents, including vancomycin, is almost always resistant to quinolones such as ciprofloxacin, levofloxacin, moxifloxacin and gatifloxacin. ß-Lactamase production in Staphylococcus aureus strains, especially those acquired in the hospital, is the rule. Almost all of these infections are caused by methicillin-resistant strains (MRSA). In this context, the development of new agents is of major interest.

Daptomycin (DAP), clindamycin (CLN), azithromycin (AZI), ceftriaxone (CEF) and levofloxacin (LEVO) against 112 S. aureus strains were tested via agar dilution. Of a total of 112 strains, 24 were methicillin susceptible and 88 (including three VRSA and five VISA strains) were methicillin resistant.

**RESULTS**

The MIC distribution of MK-2764 was similar for MRSA and MSSA. The modes of each distribution were 0.5 µg/ml. MK-2764 was active against all staphylococci tested regardless of their susceptibility to other agents at MICs <0.06. MK-2764 was consistently exhibited potent activity against S. aureus isolates regardless of susceptibility to other agents. Resistance to azithromycin, clindamycin, amoxicillin / clavulanate, levofloxacin and ceftriaxone was commonly seen. Daptomycin exhibited reasonable activity against these isolates, although less potent than MK-2764.

**CONCLUSIONS**

The past few years have witnessed an extremely worrisome increase of life-threatening infections caused by community- and hospital-acquired Staphylococci. Resistance to multiple agents, including vancomycin, is almost always resistant to quinolones such as ciprofloxacin, levofloxacin, moxifloxacin and gatifloxacin. ß-Lactamase production in Staphylococcus aureus strains, especially those acquired in the hospital, is the rule. Almost all of these infections are caused by methicillin-resistant strains (MRSA). In this context, the development of new agents is of major interest.

**Table 1: Cumulative MICs (µg/ml) of drugs tested**

<table>
<thead>
<tr>
<th>Organism</th>
<th>Ceftriaxone</th>
<th>Vancomycin</th>
<th>Daptomycin</th>
<th>Azithromycin</th>
<th>Clindamycin</th>
<th>Amoxicillin/Clavulanate</th>
<th>Levofloxacin</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSSA</td>
<td>1-&gt;128</td>
<td>1</td>
<td>0.12-1</td>
<td>1</td>
<td>0.12-32</td>
<td>0.25-16</td>
<td>0.12-32</td>
</tr>
<tr>
<td>MRSA</td>
<td>&gt;128</td>
<td>2</td>
<td>0.12-4</td>
<td>&gt;64</td>
<td>&gt;64</td>
<td>&gt;16</td>
<td>&gt;64</td>
</tr>
</tbody>
</table>

**Figure 2: Cumulative % of Susceptible MRSA**

The figure shows the cumulative percentage of susceptible MSSA and MRSA. The data is represented in a graph format.