In Vitro Activity of Lefamulin Against Bacterial Pathogens Collected From Patients With Community- or Hospital-Acquired Respiratory Tract Infections: 2016 SENTRA Data From Europe

Susanne Paukner,1 Hielo S. Sader,2 Rodrigo E. Mendes,2 Robert K. Flamm,3 Steven P. Gelone3
1Nabriva Therapeutics GmbH, Vienna, Austria; 2JMI Laboratories, North Liberty, IA, USA; 3Nabriva Therapeutics Inc., King of Prussia, PA, USA

Nabriva.com

INTRODUCTION & PURPOSE

• Pneumococci pose a public health threat and are associated with significant morbidity and mortality, particularly in the very young and elderly.1–4

• Although the causes of pneumococcal pneumonia vary by geographic region and patient population, the pneumococcus is commonly the most frequent cause of community-acquired bacterial pneumonia (CAP).1,5,6 Streptococcus pneumoniae. Other common pathogens include Haemophilus influenzae, Moraxella catarrhalis, Staphylococcus aureus, and the atypical respiratory pathogen Mycoplasma pneumoniae.7,8 Chlorpyramine pneumoniae, and Legionella pneumophila.9

• Despite available antibiotics to treat bacterial pneumonia, new therapies are needed because antibiotic resistance rates are rising. Some pathogens are naturally refractory to certain therapies, and traditionally used antibiotics have undesirable side effects as well.10

• Lefamulin is a novel semisynthetic pleuromutilin antibiotic that inhibits protein synthesis in bacterial ribosomes, specifically in the peptidyl transferase center.11

RESULTS

TABLE 1. Activity of Lefamulin and Comparators Against S. pneumoniae

<table>
<thead>
<tr>
<th>Pathogen</th>
<th>Lefamulin (MIC)</th>
<th>Comparator (MIC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. pneumoniae</td>
<td>0.06/0.12</td>
<td>0.03–1</td>
</tr>
</tbody>
</table>

Lefamulin was the most active compound against S. pneumoniae (minimum concentration at which 50% of the isolates were inhibited; MIC50). All isolates were inhibited (0.06 or 0.12 mg/L, respectively).

METHODS

• A recent phase 3 trial for the treatment of CAP showed that lefamulin (150 mg intravenously or 600 mg q12h) had high clinical cure rates in patients with respiratory or lower respiratory tract infections.12

• Ewing's bacilli were collected from patients with community-acquired respiratory infections (94%) and hospitalized patients with pneumonia (16%) in Europe (19 countries). 26% were not susceptible to the sentry (Antimicrobial Surveillance Program).13

• Lefamulin and comparators were tested by Clinical and Laboratory Standards Institute broth microdilution methods, and susceptibility was determined using the EUCAST breakpoints.14

• The objective of this analysis was to evaluate the in vitro activity of lefamulin and comparators against a collection of bacterial respiratory pathogens from Europe (2016-2017).

REFERENCES


Acknowledgments and Disclosures

Funding for this analysis was provided by Nabriva Therapeutics, Inc. (Nabriva). Helio S. Sader and Rodrigo E. Mendes are employees of Nabriva Therapeutics, Inc. Rodrigo S. Mendes, and Robert K. Flamm, Jr., are employees of Nabriva, and they were compensated by Nabriva for their services in developing the susceptibility testing.