Daptomycin for the treatment of infective endocarditis: results from European CUBICIN® Outcomes Registry and Experience

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INTRODUCTION AND PURPOSE

Infective endocarditis (IE), primarily caused by Gram-positive bacteria, is associated with a high rate of mortality and morbidity, and represents a large burden on the healthcare system. Successful treatment of IE remains challenging because of resistance of pathogens to commonly used antimicrobials is increasing. IE can be fatal if not treated aggressively with antibiotics or a combination of antibiotics and surgery.1

Daptomycin is a cyclic lipopeptide antibiotic active against Gram-positive bacteria and is indicated for the treatment of Staphylococcus aureus bloodstream infections, including right-sided endocarditis.2

Daptomycin is a bactericidal antibiotic that is active against Gram-positive bacteria and has a low risk of resistance in the bloodstream.3

The European CUBICIN® Outcomes Registry and Experience (EUC-ORE™) was a retrospective, multicentre registry designed to collect real-world data on the use of daptomycin for Gram-positive infections across 18 countries in Europe (12), Latin America (5) and Asia (1).4

This analysis evaluated the clinical outcomes in patients with IE who received at least one dose of daptomycin between January 2006 and April 2012. Follow-up data were collected for 2 years post-therapy.

METHODS

Data were collected using standardised case report forms for patients with IE who received at least one dose of daptomycin between January 2006 and April 2012. Follow-up data were collected for 2 years post-therapy. Patients who had received daptomycin as part of a controlled clinical trial were excluded from analysis.

The primary outcome was assessed as success (cured or improved), failure or non-response at both the end of daptomycin treatment and at follow-up (Table 1).

RESULTS

Patient demographics and baseline characteristics

Table 1. Primary characteristics

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value (N=610)</th>
<th>Value (N=414)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>Median (range)</td>
<td>60 (19–94)</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>Median (range)</td>
<td>80 (46–205)</td>
</tr>
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<td>NYHA functional class</td>
<td>Median (range)</td>
<td>2 (1–6)</td>
</tr>
<tr>
<td>Concomitant therapy</td>
<td>Median (range)</td>
<td>3 (0–8)</td>
</tr>
</tbody>
</table>

Primary pathogen culture

Details of the primary infecting pathogens are depicted in Table 2. The most common primary pathogen was S. aureus (53%, MRSA 46%, and LRIE 38%). Methicillin-resistant S. aureus (MRSA) was identified in 59 (9%) patients with LIE, 11 (10%) patients with RIE and 3 (6%) patients with LRIE.

In total, 274 (45%) patients had S. aureus infections, 129 (21%) had vancomycin-nonsusceptible S. aureus (VNSA), 79 (13%) had vancomycin-resistant S. aureus (VRA), 34 (6%) had vancomycin-resistant enterococci (VRE), and 63 (10%) had other infections (Table 2).

The median duration of outpatient therapy was 21 days (range, 5–85), 128 (21%) patients received at least 45 days of outpatient treatment, and 32 (5%) patients had an inpatient stay of ≥8 mg/kg/day (Table 2).

CONCLUSIONS

Daptomycin was well tolerated and effective for the treatment of LIE and LRIE in addition to RIE caused by Gram-positive bacteria, including MRSA.

The success rates were numerically higher with daptomycin doses ≥8 mg/kg/day (Table 2).

REFERENCES