Efficacy of Omadacycline in the Treatment of Acute Bacterial Skin and Skin Structure Infections in Patients With Cellulitis or Abscesses

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Disclosures

- PAG, GV: Advisors for Paratek Pharmaceuticals
- MR, SC, AM: Employees and shareholders of Paratek Pharmaceuticals

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Background

- Omadacyline (OMC): a novel aminomethylcycline antibiotic currently approved for:
  - Community-acquired bacterial pneumonia¹
  - Acute bacterial skin and skin structure infections (ABSSSI)²

- OMC is active against key causative pathogens, including methicillin-susceptible (MSSA) and resistant (MRSA) *Staphylococcus aureus*³

- This pooled analysis examined the efficacy of OMC in patients who were not people who inject drugs from the pivotal Phase 3 Omadacycline in Acute Skin and Skin Structure Infections (OASIS)-1 and -2 studies, who had:
  - Cellulitis / Erysipelas
  - Major abscesses

Methods and Endpoints

- Patients with ABSSSI were randomized 1:1 to OMC or linezolid (LZD):
  - IV-to-oral: OASIS-1 (NCT02378480)\(^1\)
  - Once-daily oral OMC or twice-daily oral LZD: OASIS-2 (NCT02877927)\(^2\)
  - Total therapy duration: 7 – 14 days

- Populations:
  - modified intent-to-treat (mITT, randomized patients without a sole Gram-negative pathogen)
  - micro-mITT (mITT patients with ≥1 identified Gram-positive causative pathogen)

- **Primary Endpoint**: early clinical response (ECR) in the mITT population
  - Survival and ≥20% reduction in lesion size, 48–72 h after first dose, without rescue therapy

- **Secondary Endpoint**: post-treatment evaluation (PTE) in the mITT population
  - Survival and infection resolution/improvement, 7–14 days after last dose

Baseline characteristics were generally similar between groups

- In the micro-mITT population, S. aureus was the primary baseline pathogen, detected in:
  - 111 (76%) of patients with cellulitis/erysipelas
  - 94 (76%) of patients with major abscess

- MRSA was detected in:
  - 46 (41%) patients with cellulitis/erysipelas
  - 56 (60%) patients with major abscess
Success at ECR and PTE were comparable between treatment groups and infection types

**Success at ECR**

- **Cellulitis/Erysipelas**
  - OMC: 117/148
  - LZD: 115/146
  - Difference (95% CI): 0.3% (-9.1, 9.7)

- **Major Abscess**
  - OMC: 70/77
  - LZD: 61/69
  - Difference (95% CI): 2.5% (-7.8, 13.4)

**Success at PTE**

- **Cellulitis/Erysipelas**
  - OMC: 135/148
  - LZD: 130/146
  - Difference (95% CI): 4.1% (-2.4, 10.9)

- **Major Abscess**
  - OMC: 68/77
  - LZD: 58/69
  - Difference (95% CI): 6.6% (-5.3, 18.9)
Success at ECR was comparable with regard to presenting clinical signs and symptoms of infection

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<thead>
<tr>
<th></th>
<th>Cellulitis/Erysipelas</th>
<th>Major Abscess</th>
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<tbody>
<tr>
<td></td>
<td>OMC</td>
<td>LZD</td>
</tr>
<tr>
<td>mITT, n</td>
<td>148</td>
<td>146</td>
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<tr>
<td>WBC count</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥10,000 or ≤4000 cells/mm³, n/N (%)</td>
<td>44/60 (73.3)</td>
<td>43/55 (78.2)</td>
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<tr>
<td>Fever</td>
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<td>&gt;38.0°C, n/N (%)</td>
<td>35/39 (89.7)</td>
<td>32/43 (74.4)</td>
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<tr>
<td>Lesion size</td>
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<tr>
<td>75–300 cm², n/N (%)</td>
<td>63/80 (78.8)</td>
<td>58/77 (75.3)</td>
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Success rates were high and numerically similar at PTE for patients presenting with signs and symptoms of infection and *S. aureus*

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<td>WBC count ≥10,000 or ≤4000 cells/mm³, n/N (%)</td>
<td>57/60 (95.0)</td>
<td>46/55 (83.6)</td>
<td>11.4% (0.1, 24.1)</td>
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<td>Fever &gt;38.0°C, n/N (%)</td>
<td>38/39 (97.4)</td>
<td>40/43 (93.0)</td>
<td>4.4% (−7.1, 16.5)</td>
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<td>Lesion size 75–300 cm², n/N (%)</td>
<td>75/80 (93.8)</td>
<td>69/77 (89.6)</td>
<td>4.1% (−4.9, 13.8)</td>
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<td><strong>Micro-mITT, n</strong></td>
<td>64</td>
<td>82</td>
<td></td>
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<td>Success at PTE by <em>S. aureus</em> baseline pathogen, n/N (%)</td>
<td>48/51 (94)</td>
<td>53/60 (88)</td>
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Success rates were high and numerically similar at PTE for patients presenting with signs and symptoms of infection and *S. aureus*.
Conclusions and Summary

- Omadacycline is a once-daily, IV or oral option for inpatient and outpatient treatment of ABSSSI in patients with cellulitis or major abscess, including those associated with MRSA.

- Success at ECR and PTE results were similar for patients who presented at baseline with low/high white blood cell counts, fever, and lesion sizes ≤300 cm$^2$.

- There were no new safety signals; nausea and vomiting were the most frequent treatment-emergent adverse events across groups.