**Improved Outcomes at Late Follow-up With Plazomicin Compared With Meropenem in Patients With Complicated Urinary Tract Infection, Including Acute Pyelonephritis, in the EPIC Study**

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**INTRODUCTION**

- The urinary tract is a common source for multidrug-resistant (MDR) gram-negative pathogens. This lists the key indications and treatments for urinary tract infections (UTI), including acute pyelonephritis (AP).
- UTI have surpassed to the treatment of other bacterial infections, reaching a prevalence of 3 million in the USA.

**METHODS**

- Study Design: In a randomized, double-blind, phase 3 clinical study (NCT02488625), 488 patients with complicated urinary tract infections (cUTIs) were enrolled worldwide.
- Hospitalized patients with cUTI were randomized 1:1 to intravenous (IV) plazomicin (15 mg/kg once daily) or IV meropenem (1 g every 8 hours [q8h]) for 15 to 19 days.

**RESULTS**

- In both plazomicin- and meropenem-treated patients, baseline risk factors for microbiological recurrence and clinical relapse included age ≥65 years, cUTI (vs AP), male sex, creatinine clearance ≤90 mL/min, the presence of extended-spectrum β-lactamases (ESBL) and those that are resistant to carbapenems and currently non-susceptible to third-generation cephalosporins.

**CONCLUSIONS**

- Plazomicin is a next-generation aminoglycoside with in vitro activity against MDR Enterobacteriaceae, including strains producing extended-spectrum β-lactamases (ESBL) and those that are resistant to carbapenems.
- Improved Outcomes at Late Follow-up With Plazomicin Compared With Meropenem in Patients With Complicated Urinary Tract Infection, Including Acute Pyelonephritis, in the EPIC Study.

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**Table 1. Outcome Definitions**

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
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</thead>
<tbody>
<tr>
<td>Clinical</td>
<td>Sustained clinical cure (no recurrent symptoms) and microbiological cure (reduction in all baseline pathogens to &lt;10^4 colony forming units [CFU]/mL) at the time of follow-up.</td>
</tr>
<tr>
<td>Microbiological</td>
<td>Sustained microbiological cure (reduction in all baseline pathogens to &lt;10^4 CFU/mL) at the time of follow-up.</td>
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</tbody>
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**Key Inclusion Criteria**

- Age ≥18 years; creatinine clearance (CrCl) >30 mL/min; pyuria and clinical symptoms consistent with urinary tract infection (UTI), including acute pyelonephritis (AP).

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**Figure 1. Study Design**

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**Figure 2. Clinical Response at LFU**

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**Figure 3. Microbiological Recurrence and Clinical Relapse at LFU**

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**Figure 4. Clinical Response From TOC to LFU by Microbiological Response at TOC**

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**REFERENCES**


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