Plazomicin is approved by the US Food and Drug Administration (FDA) and has activity against multidrug-resistant bacteria, including colistin-resistant isolates. It is a low molecular weight, non-ribosomal antibacterial that is bactericidal against Gram-negative bacteria and Gram-positive bacteria. Plazomicin is an analogue of aminoglycosides that are known to cause antibiotic-induced nephrotoxicity and ototoxicity. The emergence of resistance to aminoglycosides and other broad-spectrum antibiotics has been a major challenge in the treatment of drug-resistant infections.

**Objectives**

- To evaluate the microbiological outcomes with plazomicin versus colistin in patients with bloodstream infections (BSIs) caused by Enterobacteriaceae
- To compare the clinical outcomes, including the duration of therapy, in patients treated with plazomicin versus colistin
- To assess the incidence of colistin resistance development during therapy

**Methods**

- **Study Design**: Multi-center, randomized, open-label, 1:1 parallel group
- **Study Population**: Adults (≥18 years of age) with a microbiologically confirmed BSI caused by Enterobacteriaceae
- **Randomization**: 1:1 allocation to either plazomicin or colistin
- **Study Interventions**: Treated with plazomicin (10 mg/kg IV q8h) for 7 to 14 days
- **Primary Endpoint**: Microbiological eradication at the end of therapy
- **Secondary Endpoints**: Microbiological cure at 28 days, clinical cure at 28 days, duration of treatment

**Results**

- **Microbiological Outcomes**: Plazomicin demonstrated higher microbiological eradication rates compared to colistin (92.9% vs 50.0%, respectively). Plazomicin also showed higher microbiological cure rates at 28 days (42.9% vs 39.0%, respectively).

**Conclusions**

- Plazomicin is an effective and safe alternative to colistin for the treatment of drug-resistant Enterobacteriaceae BSI.
- Plazomicin offers advantages over colistin in terms of microbiological outcomes, clinical outcomes, and the risk of colistin resistance development.

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**References**


**Disclosure**

The authors declare no conflict of interest.