Zemdri (plazomicin sulfate)

ZEMDRI™
(plazomicin) Injection

NEW PRODUCT SLIDESHOW

MPR

Introduction

- **Brand name:** Zemdri
- **Generic name:** Plazomicin sulfate
- **Pharmacological class:** Aminoglycoside
- **Strength and Formulation:** 500mg/10mL; per vial; soln for IV infusion after dilution; preservative-free
- **Manufacturer:** Achaogen, Inc.
- **How supplied:** Single-dose vials—10
- **Legal Classification:** Rx

Indication

- Susceptible **complicated urinary tract infections (cUTI)**, including pyelonephritis

Dosage & Administration

- Give by IV infusion over 30mins
- **≥18yrs (CrCl ≥90mL/min):** 15mg/kg every 24hrs for 4–7 days (an oral therapy may be considered after Zemdri to complete a total of 7–10 days [IV + oral])

Dosage & Administration

- Dose adjustments may be required based on renal function changes
- **Renal impairment**
  - CrCl ≥60–<90mL/min: 15mg/kg every 24hrs
  - CrCl ≥30–<60mL/min: 10mg/kg every 24hrs
  - CrCl ≥15–<30mL/min: 10mg/kg every 48hrs
  - CrCl <15mL/min or on renal replacement therapy, including hemodialysis): insufficient data

Considerations for Special Populations

- **Pregnancy:** May cause fetal harm
- **Nursing mothers:** Consider mother's need and potential adverse effects on infant
- **Pediatric:** <18yrs: not established
- **Elderly:** Monitor renal function
- **Renal impairment:** Monitor and adjust dose (see Adult)

Boxed Warning

- Nephrotoxicity
- Ototoxicity
- Neuromuscular blockade
- Fetal harm

Warnings/Precautions

- **Assess CrCl** in all patients prior to initiation, daily during therapy, and especially in those at increased risk of nephrotoxicity (eg, renal impairment, elderly, concomitant potentially nephrotoxic drugs)
- **CrCl ≥15–<90mL/min:** monitor and maintain plasma trough level <3mcg/mL

Warnings/Precautions

- Risk of **ototoxicity** (eg, family history of hearing loss, renal impairment, taking higher doses and/or prolonged use): consider benefit-risk of therapy
- Underlying **neuromuscular disorders** (eg, myasthenia gravis) or concomitant neuromuscular blockers: monitor for adverse reactions
- Discontinue if allergic reaction occurs

Interactions

- Increased risk of **nephrotoxicity** with concomitant nephrotoxic drugs
- May potentiate neuromuscular blockade

Adverse Reactions

- Decreased renal function
- Diarrhea
- Hypertension
- Headache
- Nausea
- Vomiting
- Hypotension
- Ototoxicity (hearing loss, tinnitus, vertigo)
- Neuromuscular blockade
- Hypersensitivity
- Possible *C. diff*-associated diarrhea

Mechanism of Action

- Plazomicin is an aminoglycoside that acts by binding to bacterial 30S ribosomal subunit, thereby inhibiting protein synthesis
- It exhibits concentration-dependent bactericidal activity measured by time kill studies

Clinical Studies

- **Trial 1** was a multinational, randomized, double-blind, noninferiority trial (N=609) that enrolled adults hospitalized with cUTI (including pyelonephritis)

Clinical Studies

- Patients were randomized to **Zemdri** 15mg/kg IV once daily or **meropenem** 1g IV every 8 hours
- Switch to an oral antibacterial drug (eg, levofloxacin) was allowed after 4–7 days of IV therapy for a total of 7–10 days of treatment
- Median treatment duration of IV drug: 6 days

Clinical Studies

- Zemdri showed efficacy for **composite cure** at Day 5 and the Test of Cure (TOC) visit
  - Defined as resolution or improvement of clinical cUTI symptoms and a microbiological outcome of eradication (all baseline uropathogens reduced to $<10^4$ CFU/mL)

Clinical Studies

- Composite cure at Day 5
  - **Zemdri**: 88.0%
  - **Meropenem:** 91.4%
  - Treatment difference -3.4% (95% CI, -10.0, 3.1)
- Composite cure at TOC
  - **Zemdri:** 81.7%
  - **Meropenem:** 70.1%
  - Treatment difference 11.6% (95% CI, 2.7, 20.3)

Clinical Studies

- Composite cure at the TOC visit in individuals with concomitant bacteremia at baseline was achieved in 72.0% (18/25) of patients in the Zemdri group and 56.5% (13/23) of patients in the meropenem group

- For more clinical trial data, see full labeling

New Product Monograph

- For more information view the product monograph available at:

  http://www.empr.com/zemdri/drug/34850/