LINEZOLID

Read in conjunction with Disclaimer

Formulary: Highly Restricted Requires microbiologist approval **before** commencing	
Presentation	**IV Infusion:** 600 mg/ 300 mL = **2 mg/mL** **Granules for Oral Suspension:** 100 mg/5 mL = **20 mg/mL**
Classification	Oxazolidinone antibacterial that inhibits bacterial protein synthesis.
Indication	For multidrug-resitant infections due to Gram positive t organisms including methicillin resistant *Staphylococcus aureus* (MRSA), vancomycin resistant enterococci (VRE) and coagulase negative staphylococci (CoNS) which are: • Resistant to conventional antibiotics such as vancomycin **and**; • Recommended by a Clinical Microbiologist or Infectious Diseases Physician.
Monitoring	• Full blood count, renal function, urea and electrolytes, liver function and acid/base balance **must be** monitored at baseline (prior to first dose) then repeated at least weekly. Refer for Specialist consultation if there are signs of myelosuppression. • Linezolid levels must be monitored after three days, see Therapeutic Drug Monitoring below. • Blood pressure should be monitored routinely during treatment. • If therapy is prolonged (greater than 28 days), ophthalmology assessment is required.
Therapeutic Drug Monitoring	• Therapeutic drug monitoring is required when treatment is longer than three days. • Take trough level 72 hours after commencement of treatment. • Trough level to be repeated weekly during extended therapy. • **Target range:** 2 to 6.5 mg/L; discuss with ID/microbiologist if level is not within target range. • More info: PathWest WA Test Directory.
Compatibility	**Fluids:** Glucose 5%, sodium chloride 0.9% **Y-site:** Aciclovir, amikacin, calcium gluconate, caspofungin, cefazolin, ceftazidime, ciprofloxacin, clindamycin, dexamethasone, digoxin, fentanyl, fluconazole, furosemide, ganciclovir, gentamicin, heparin sodium, hydrocortisone, labetalol, lidocaine, magnesium sulfate, meropenem, metronidazole, midazolam, morphine sulfate, naloxone, piperacillin-tazobactam, sodium bicarbonate, tobramycin, vancomycin, zidovudine. **This list is not exhaustive, contact pharmacy for further advice.**
Incompatibility	**Fluids:** No data **Y-site:** Amphotericin, ceftriaxone, diazepam, pantoprazole, phenytoin. **This list is not exhaustive, contact pharmacy for further advice.**

Interactions	• **Inotropes:** as a non-selective monoamine oxidase (MAO) inhibitor, linezolid can raise concentrations of certain inotropes (e.g. dopamine, adrenaline, noradrenaline) and amplify adrenergic effects. • Linezolid has multiple serious drug interactions, particularly with adrenergic and serotonergic agents; please consult approved references/contact pharmacy for advice if neonate or breastfeeding mother is on other medications.
Side Effects	**Common:** Diarrhoea, thrombocytopaenia, anaemia, leucopaenia, nausea/vomiting.
	Infrequent: Elevated transaminases, hypertension, eosinophilia, pruritis, rash, tongue discolouration, peripheral neuropathy or optic neurophathy (treatment greater than 28 days), arrhythmia.
	Rare:, Seizures, allergy, lactic acidosis, bullous skin disorder, *Clostridioides* difficile-associated diarrhoea.
Storage & Stability	**IV Infusion:** Store at room temperature. • Protect from freezing. • Keep in external wrapping until prior to its use. • Discard IV bottle immediately after use. **Granules for Oral Suspension:** Store at room temperature before and after reconstitution. • Store in original container in order to protect from light. • Discard 3 weeks after reconstitution.
Comment	• Linezolid has near 100% oral bioavailability. • Oral linezolid suspension is considerably more expensive than intravenous alternative.

ORAL

Presentation (for oral use)

Oral Suspension: 100 mg/5 mL = **20 mg/mL**

Dosage

Corrected Gestational Age	Postnatal Age	Dose	Frequency
Less than 35 weeks	7 days or less	10 mg/kg/dose	Every 12 hours
	Greater than 7 days	10 mg/kg/dose	Every 8 hours
35 weeks or greater	All ages	10 mg/kg/dose	Every 8 hours

Dose adjustment:

- **Renal impairment:** No adjustment is necessary; however, the 2 primary metabolites of linezolid may accumulate in patients with renal insufficiency. Incidence of adverse events may be increased in the setting of reduced renal function.
- **Hepatic impairment:** No adjustment is necessary. Pharmacokinetics in patients with severe hepatic failure have not been evaluated.

Preparation

Reconstitution:

- Tap bottle until all granules flow freely; add approximately half the total volume of water as per the manufacturer's instructions for reconstitution and shake well to obtain a uniform suspension.
- Add remainder of the water and again shake well.
- Keep the bottle in the outer carton after reconstitution.

Administration

- Before each use gently mix by inverting the bottle several times. **Do not shake** (after the initial reconstitution).
- Draw prescribed dose into oral/enteral syringe.
- May be given anytime in relation to feeds.
- When administered via an enteral tube, linezolid suspension should be diluted with equal volume of water prior to administration.

INTRAVENOUS INFUSION

Presentation (for IV use)

IV Infusion: 600 mg/ 300 mL = **2 mg/mL**

Dosage

Corrected Gestational Age	Postnatal Age	Dose	Frequency
Less than 35 weeks	7 days or less	10 mg/kg/dose	Every 12 hours
	Greater than 7 days	10 mg/kg/dose	Every 8 hours
35 weeks or greater	All ages	10 mg/kg/dose	Every 8 hours

Dose adjustment:

- **Renal impairment:** No adjustment is necessary; however, the 2 primary metabolites of linezolid may accumulate in patients with renal insufficiency
- **Hepatic impairment:** No adjustment is necessary. Pharmacokinetics in patients with severe hepatic failure have not been evaluated.

Preparation

Use undiluted

Note: IV Infusion may exhibit a yellow colour – this does not affect efficacy

Administration

IV infusion:
Infuse via syringe driver pump over 30 minutes to 2 hours.

Related Policies, Procedures, and Guidelines

Clinical Practice Guidelines:

CAHS - Sepsis: Neonatal Guideline

References

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