Levetiracetam

500 mg/5 mL injection, 100 mg/mL oral liquid

Note

This guideline provides advice of a general nature. This statewide guideline has been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach. The guideline is based on a review of published evidence and expert opinion.

Information in this statewide guideline is current at the time of publication.

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Health practitioners in the South Australian public health sector are expected to review specific details of each patient and professionally assess the applicability of the relevant guideline to that clinical situation.

If for good clinical reasons, a decision is made to depart from the guideline, the responsible clinician must document in the patient's medical record, the decision made, by whom, and detailed reasons for the departure from the guideline.

This statewide guideline does not address all the elements of clinical practice and assumes that the individual clinicians are responsible for discussing care with consumers in an environment that is culturally appropriate and which enables respectful confidential discussion. This includes:

- The use of interpreter services where necessary,
- Advising consumers of their choice and ensuring informed consent is obtained,
- Providing care within scope of practice, meeting all legislative requirements and maintaining standards of professional conduct, and
- Documenting all care in accordance with mandatory and local requirements

Dose and Indications

Seizures

Consider consultation with Paediatric Neurologist

Intravenous/Oral

Loading dose:

Initially 40 mg/kg, followed by a dose of 20 mg/kg repeated 30 minutes later if required.

The requirement for a loading dose depends on the urgency with which seizure control is needed.

This dosing is based on data for term or near-term infants.

Maintenance dose

10 mg/kg/dose 12 hourly, which can be increased as needed every 1-2 weeks up to 60 mg/kg/day.

Oral administration is preferred in neonates

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Preparation and Administration

Intravenous

Dilute 300 mg (3 mL of the 500 mg/5 mL levetiracetam injection) with 17 mL of compatible fluid. The resulting solution contains 15 mg/mL:

Dose	15 mg	30 mg	45 mg	60 mg	75 mg
Volume	1 mL	2 mL	3 mL	4 mL	5 mL

Give as an intravenous infusion over at least 15 minutes.

Oral

The oral mixture contains 100 mg/mL:

Dose	20 mg	40 mg	60 mg	80 mg	100 mg
Volume	0.2 mL	0.4 mL	0.6 mL	0.8 mL	1 mL

May be given anytime with regards to feeds

Compatible Fluids

Glucose 5%, sodium chloride 0.9%

Adverse Effects

Sedation and irritability, increased diastolic blood pressure. Serious dermatologic reactions, such as Stevens-Johnson syndrome and toxic epidermal necrosis, have been reported.

Monitoring

- Blood pressure, conscious state, seizure activity (frequency, duration, severity)

Practice Points

- If ceasing maintenance therapy, the dose should be reduced gradually as abrupt withdrawal may lead to an increase in seizure frequency
- Changing from IV to oral therapy does not require any dosage conversion
- Levetiracetam is primarily eliminated renally, however there are no recommendations for dose adjustments in neonates

References

- Sharpe C, Reiner GE, Davis SL, et al. Levetiracetam Versus Phenobarbital for Neonatal Seizures: A Randomized Controlled Trial. Pediatrics. 2020;145(6):e20193182

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