



NEONATAL MEDICATION GUIDELINE

Levetiracetam

Scope (Staff): Nursing, Medical and Pharmacy Staff

Scope (Area): KEMH NICU, PCH NICU, NETS WA

This document should be read in conjunction with the [Disclaimer](#).

Quick Links

[Dose](#)

[Preparation & Administration](#)

[Side Effects & Interactions](#)

[Monitoring](#)

Restrictions

[Formulary: Restricted](#)

Requires Neonatologist or Neurologist review within 24 hours of initiation

Description

Anticonvulsant

Presentation

Vial: 500mg/5mL = 100mg/mL

Oral solution: 100mg/mL

Storage

Store at room temperature, below 25°C

Dose

Treatment of neonatal seizures

IV/Oral:

Loading dose: 20 mg/kg

Repeat this dose after 30 minutes if seizures persist. It is essential to give a loading dose

Maintenance dose: 10 – 15 mg/kg/dose **every 8 hours**

The first maintenance dose is to be given 8 hours after the loading dose

Dose can be increased every 2 – 3 days to a maximum of **60 mg/kg/day** or after review by neurology

Dose Adjustment

Renal Impairment:

Dose frequency should be reviewed in patients with renal impairment (consider extending interval to daily and consulting paediatric neurologist)

Adjust final concentration in fluid restricted infants (see *Preparation*)

Preparation

IV

5mg/mL Concentration

Take 1mL (100mg) of levetiracetam and dilute to 20mL with a compatible fluid

Concentration = $100\text{mg}/20\text{mL} = \underline{5\text{mg/mL}}$

15mg/mL Concentration

Fluid restricted infants – a maximum final concentration of 15mg/mL is to be used

Take 1.5mL (150mg) and dilute to 10mL with a compatible fluid

Concentration = $150\text{mg}/10\text{mL} = \underline{15\text{mg/mL}}$

Administration

IV

Administer over at least 15 minutes via a peripheral or central line

Oral

May be given at any time with regards to feeds

Compatible Fluids

Glucose 5%, Sodium Chloride 0.9%

Y-Site Compatibility

Refer to KEMH Neonatal Medication Guideline: [Y-Site IV Compatibility in Neonates](#)

Side Effects

Common: sedation, irritability, increased diastolic blood pressure

Serious: Steven Johnson Syndrome, agranulocytosis, hepatic failure

Interactions

Clearance may be increased by 30% with co-administration of phenobarbitone, carbamazepine and phenytoin

Monitoring

Renal function, blood pressure, full blood picture, seizure control

Comments

Although similar dosing has been used in premature infants, there is minimal pharmacokinetic data in this population

If ceasing therapy, the dose should be reduced gradually as abrupt withdrawal may lead to increasing seizures. A general weaning regimen is 20 – 25% reduction per week over 4 – 5 weeks

Changing from IV to oral therapy does not require any dosage conversion

It is NOT necessary to perform routine drug levels unless specified by a neurologist

Related Policies, Procedures & Guidelines

CAHS Clinical Practice Guidelines:

[Neonatal Seizures](#)

[Medication Administration: Intramuscular, Subcutaneous, Intravascular](#)

References

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