





NEONATAL

LEVETIRACETAM

This document should be read in conjunction with this [DISCLAIMER](#)

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| Presentation | Vial: 100mg/mL (5mL vials) Oral solution: 100mg/mL |
| Action & Indication | Anticonvulsant with a broad spectrum of activity. Can be used in conjunction with other anticonvulsants. The mechanism of action is unclear. It is thought to influence excitability by binding to the synaptic vesicle glycoprotein 2A receptor (SV2A) on neuronal cells and reduces presynaptic neurotransmitter release. This receptor appears to be involved in the generation of seizures. ¹ |
| Dose | IV/Oral: Loading Dose: 20mg/kg; repeat this dose after 30 minutes if seizures persist. It is essential to give loading dose. Maintenance Dose: 10-15mg/kg/dose, TDS. The first maintenance dose is to be given 8 hours after the loading dose. |
| Monitoring | Renal function (consider extending dose interval to daily); Blood pressure, FBC, seizure control |
| Preparation | IV: Compatible Fluids: Sodium Chloride 0.9% and Glucose Solutions Dilution Take 1mL (100mg) and dilute it to 20mL with compatible fluid. <u>Final concentration is 5mg/mL</u> Maximum concentration is 15mg/mL |
| Administration | IV: Administer over at least 15 minutes ⁶ Oral: May be given at any time with regards to feeds. ⁶ |
| Adverse Effect | Common: Sedation, irritability, hypertension; Rare: Steven Johnson syndrome, agranulocytosis |
| Comments | If ceasing therapy, the dose should be reduced gradually as abrupt withdrawal may lead to increasing seizures. Changing from IV to oral therapy does not require any dosage conversion. It is NOT necessary to perform routine drug levels. |

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| References | <ol style="list-style-type: none"> 1. Nagarajan L. Neonatal Seizures: Current management and future challenges. International Review of Child Neurology Series 2016; page 130 2. Shin JW et al. Experience and pharmacokinetics of Levetiracetam in Korean neonates with neonatal seizures. Korean J Pediatr. 2017 Feb;60(2):50-54 3. Khan O et al. Role of intravenous levetiracetam for acute seizure management in preterm neonates. Pediatr Neurol. 2013 Nov;49(5):340-3 4. Rakshasbhuvankar A, Rao S, Kohan R, Simmer K, Nagarajan L. Intravenous levetiracetam for treatment of neonatal seizures. J Clin Neurosci. 2013; 20:1165-7 5. Neofax 2014. Thomson Reuters; 2014. 6. Taketomo CK, Hodding JH, Kraus DM. Pediatric and neonatal dosage handbook. Hudson (OH): Lexi Comp; 2010. |
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