

Administration of Anticonvulsants to Newborns

Neonatal seizure is one of the few neonatal conditions that warrants immediate medical attention. The incidence of seizures vary according to gestational age and birth weight (1.5-5.5/1000 live births), and rate even higher in premature and very low birth weight infants (57-132/1000 live births). Treatment of neonatal seizures should be directed at the cause to help prevent further brain injury. Neonatal seizures may not be effectively controlled with anticonvulsants unless their underlying cause is treated.

Common Etiologies

Hypoxic-Ischemic Encephalopathy	Metabolic Disturbance: Hypoglycemia,
Ischemic Stroke	Hypocalcemia, Hypomagnesemia
Intracranial Hemorrhage	Neonatal-Onset Epilepsy
CNS Infection (Meningitis, Encephalitis)	Inborn Error of Metabolism

Seizure Management of the Newborn

If suspected seizure activity:

- Assess and monitor airway, breathing, circulation
- Document any observed seizure activity
 - Note characteristics, time
- Notify attending pediatrician and **prepare for transport to higher-level of care**
- Assess
 - Maternal history for substance use or medications
 - Physical exam
 - Neurologic exam
- Labs: CBC/Blood Culture, Glucose, Electrolytes with Magnesium and Calcium level

Recommended Dosing of Anticonvulsants

Phenobarbital

- Loading Dose: 20mg/kg IV
 - Infuse loading dose on pump over 30 minutes
 - Onset: Within 5 minutes with maximum effect within 30 minutes
 - Duration: 5-10 hours
 - Concerns: Sedation, Respiratory arrest, hypotension
- If seizures persist 20 minutes after loading dose, notify PCP and can give a second dose of Phenobarbital 20mg/kg IV (**total 40 mg/kg administered**)

Questions? **TWH Pharmacy:** 812-842-4233 **TWH Neonatal Transport:** 812-598-NICU