

Acute management of neonatal seizures

- Identify and characterize the seizure
- Secure airway and optimize breathing, circulation, and temperature
- Start oxygen, if needed
- Secure IV access and take blood samples for baseline investigations including sugar, calcium, magnesium, sodium, potassium, arterial blood gas, hematocrit, sepsis screen
- If hypoglycemic (blood sugar < 40 mg/dL): administer 2 mL/kg of 10% dextrose as bolus followed by a continuous infusion of 6-8 mg/kg/min
- If blood sugar is in normal range, sample for blood calcium should be withdrawn; if abnormal, 2 mL/kg of calcium gluconate (10%) should be given IV under cardiac monitoring

Administer **phenobarbitone 20 mg*/kg** IV stat over 20 minutes

Repeat phenobarbitone in 10 mg*/kg/dose aliquots until 40 mg/kg dose is reached

Administer phenytoin 20 mg/kg IV slowly over 20 minutes under cardiac monitoring* aliquots until 40 mg/kg dose is reached

Repeat phenytoin 10 mg/kg/dose

Consider lorazepam / midazolam bolus and midazolam infusion if needed;

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Wean AED slowly to maintenance phenobarbitone

Investigations required in neonates with seizures

<i>Essential investigations (required in all with a few exceptions*)</i>	<i>Additional investigations</i>
<ul style="list-style-type: none">• Blood sugar• Serum sodium and calcium• Cerebrospinal fluid (CSF) examination• Cranial ultrasound (US) and• Electroencephalography (EEG) and/or amplitude integrated EEG	<ul style="list-style-type: none">• Hematocrit (if plethoric and/or at risk for polycythemia)• Serum bilirubin (if icteric)• Serum magnesium• Arterial blood gas and anion gap (lethargy, vomiting, family history, etc.)• Imaging: CT and/or MRI (if no etiology found after essential investigations)• TORCH screen for congenital infections• Work-up for inborn errors of metabolism