

Neonatal Seizures

A seizure: a single attack of convulsion.

Convulsions: Repeated involuntary muscular contraction and relaxation.

Classification:

- a) Focal clonic seizures: characterized by alternate contraction and relaxation of a single muscle group.
- b) Multifocal clonic seizures: characterized by alternate contraction and relaxation of several muscle groups.
- c) Tonic seizures: Characterized by sustained contraction of muscles. It may be focal or generalized.
- d) Myoclonic seizures: they are brief focal or generalized jerks of extremities or body that tend to involve distant muscle groups.
- e) Subtle seizures: they are the most common type of neonatal seizures. They could be manifested as:
 - Change in breath pattern e.g. apnea
 - Minor eye movements as staring and blinking
 - Oral/buccal movements as drooling, suckling and yawning

Etiology of Convulsions in the neonatal period:

- 1) Neonatal Encephalopathy: asphyxia, birth injury, CNS infection
- 2) CNS malformation: hydrocephalus
- 3) Metabolic causes:
 - Hypocalcemia,
 - Hypo/hyponatremia,
 - Hypomagnecemia,
 - Hypoglycemia,
 - Bilirubin toxicity,
 - Vit. B6 deficiency,
 - Inherited metabolic disorders

Management of neonatal seizures:

1. Investigations:

- Blood examination (metabolic and infections)
- CSF examination: (infection and intracranial hemorrhage)
- Imaging: CT- scan, MRI, and cranial sonography (diagnostic in birth injuries and congenital anomalies)

2. Treatment:

A- General measures:

- ☺ Care of respiration
- ☺ Maintain body temperature
- ☺ Correction of electrolytes disturbances

B- Blood transfusion:

- ☺ if the baby is shocked or severely anemic

C- Anticonvulsants:

Phenobarbitone, phenytoin, & others

First give	Phenobarbitone	<ul style="list-style-type: none">• loading dose 20mg/kg• maintenance dose: 5-8 mg/kg/24hr
If not controlled, then give	Phenytoin	<ul style="list-style-type: none">• loading dose 10-15mg/kg• maintenance dose: 5-8 mg/kg/24hr
If still convulsing	Diazepam* or Lorazepam	

diazepam is not preferred in neonates because it may cause apnea and jaundice. It is not used unless the convulsions are affecting the vital signs.