STANDARD TREATMENT WORKFLOW (STW)

Neonatal Seizures

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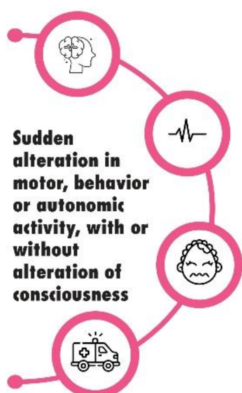
Standard Treatment Workflow (STW)

NEONATAL SEIZURES

ICD-10-P90



NEONATES AT RISK FOR SEIZURES

- Birth asphyxia
- Sepsis
- Meningitis
- Preterm
- Small for gestational age
- Metabolic or electrolyte abnormalities
- Major bleeding

IDENTIFICATION OF SEIZURES

Motor manifestations
- Rhythmic jerks of limb(s) or facial part(s)
- Tonic contraction of limb(s)
- Stereotypical movements of limbs, face, eyes
  - **Limbs:** Pedalling, rowing, swimming, cycling, stepping
  - **Oral:** Pouting of lips, mouthing, repeated sucking
  - **Eyes:** Vacant stare, transient eye deviation, nystagmoid movements, repeated blinking

Behavioural manifestations
- Sudden change in consciousness or cry characteristic

Autonomic manifestations
- Fluctuations in heart rate, sudden change in BP, sudden appearance of unexplained apneic episodes

HISTORY

Antenatal: First trimester viral illness, PIH, diabetes, PROM/ chorioamnionitis, STDs, drugs or substance abuse, decreased fetal movements
Intrapartum: Fetal distress, difficult delivery, cord complications, mode of delivery, instrumentation
Postnatal: Resuscitation, other organ system involvement, feeding history, Seizure details: onset, duration, description (review videos)
Family: Consanguinity, early neonatal deaths, mental retardation, epilepsy

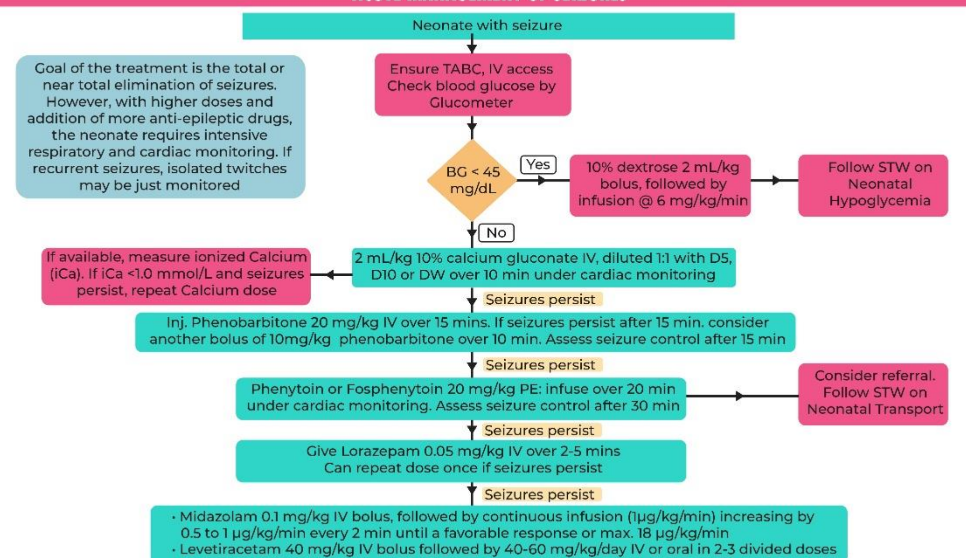
EXAMINATION

Vital signs: Temp, BP, HR, RR, CFT, SpO2
General: pallor, icterus, rash, skin lesions
Head to toe : Head circumference , bulging fontanelle, needle marks on scalp, dysmorphism, malformations, petechie, ecchymoses
Systemic exam : Level of alertness, cranial nerve and motor exam, examination of all systems
Fundus examination

INVESTIGATIONS

In all neonates: Blood glucose, Serum electrolytes, hemogram, ionized calcium, blood urea/ creatinine, liver function tests, blood gas analysis, cranial ultrasound
Specific circumstances
Suspected sepsis: cerebrospinal fluid examination
Suspected TORCH infections : paired mother and baby serology (for toxoplasma, CMV, rubella), body fluids for PCR (urine for CMV), CSF for toxoplasma, CMV, herpes
Suspected intracranial bleed: Ultrasound or CT or MRI head, Platelet count and Coagulogram
Electroencephalography

ACUTE MANAGEMENT OF SEIZURES



DURATION OF ANTICONVULSANTS

- Maintenance therapy is not needed in case of a single brief seizure that needs only one loading dose of phenobarbitone
- If more than one loading dose OR more than one drug is needed to control seizures - start the maintenance dose 24 h after the loading dose of the respective drugs. Prefer oral route if no contraindication
- After a seizure-free period of 72 h, stop all other anticonvulsants one by one, except phenobarbitone
- After one week or at discharge (whichever is earlier), stop phenobarbitone if neurological examination and EEG are normal. If the neurological examination or EEG is abnormal (electrical seizure activity or a burst-suppression background): discharge on maintenance therapy
- Review at monthly intervals and taper anticonvulsants if neurological examination and EEG become normal
- If anticonvulsants are required beyond 3 months, consult a neurologist and switch to other drugs

ABBREVIATIONS

BG: Blood glucose
BP: Blood pressure
CFT: Capillary filling time
CSF: Cerebrospinal fluid
DW: Distilled water for injection
EEG: Electroencephalography
HR: Heart rate
iCA: Ionised calcium
PIH: Pregnancy induced hypertension
RR: Respiratory rate
SGA: Small for gestational age
SPO2: Pulse oxygen saturation
STD: Sexually transmitted diseases
TABC: Temperature, airway, breathing, circulation

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NEONATES WITH SEIZURES REQUIRE LONG TERM NEURODEVELOPMENTAL FOLLOW-UP AND HEARING ASSESSMENT

This STW has been prepared by national experts of India with feasibility considerations for various levels of healthcare system in the country. These broad guidelines are advisory, and are based on expert opinions and available scientific evidence. There may be variations in the management of an individual patient based on his/her specific condition, as decided by the treating physician. There will be no indemnity for direct or indirect consequences. Kindly visit the website of DHR for more information: (**stw.icmr.org.in**) for more information.
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