

Understanding neonatal convulsions: diagnosis management and homoeopathic approach

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Abstract

Neonatal convulsions, characterized by abnormal, involuntary movements in newborns, represent a significant neurological concern that requires timely and accurate diagnosis and management. The causes of neonatal seizures can range from metabolic disturbances and infections to structural brain abnormalities and genetic disorders. Early recognition of seizures is crucial, as delayed treatment can result in long-term neurological deficits, there is growing interest in homeopathy as a holistic approach to treating neonatal convulsions, focusing on individualized remedies that address the patient's constitutional state and stimulate the body's healing mechanisms. Homeopathic treatment considers the unique symptoms, possible underlying causes, concomitant symptoms, and the individual's mental and physical predispositions, aiming to improve overall well-being and quality of life.

Keywords

Neonatal convulsions, homeopathy, holistic approach, individualized remedies, quality of life, neonatal care.

INTRODUCTION

A seizure is a transient occurrence of signs and/or symptoms resulting from abnormal excessive or synchronous neuronal activity in the brain.[1]

Neonatal seizures are a signal of neurological disease. It is most distinctive indicator of neurological problem in newborn; therefore, it is critical to recognize neonatal seizures and determine aetiology and treat.

Difference between convulsion, Seizures and epilepsy-

- **SEIZURE** - It is defined as a paroxysmal involuntary disturbance of brain function that may manifest as an impairment or loss of consciousness, abnormal motor activity, behavioral abnormality, sensory disturbance, or autonomic disturbance.[1]
- **CONVULSION** - Convulsion specifically refers to the observable motor activity (such as jerking or shaking) that often accompanies a seizure, particularly in generalized tonic-clonic seizures. Convulsions are typically considered a type of physical manifestation of a seizure, rather than a separate condition.
- **EPILEPSY**- epilepsy is defined as 2 or more unprovoked seizures occurring more than 24 hours apart and not caused by any immediately identifiable cause.[7]

INCIDENCE OF NEONATAL CONVULSION- [1]

- 3 per 1000 live birth
- Incidence increase with decreasing gestation and birthweight
- Preterm incidence- twice as compared to term- 20.8 per 1000 live birth

TYPES OF SEIZURES [1]

- Epileptic seizures Clinical phenomena associated with corresponding electroencephalography (EEG) seizure activity, e.g., clonic seizures.
- Nonepileptic seizures Clinical seizures without corresponding EEG correlate, e.g., subtle and generalized tonic seizures.
- EEG seizures Abnormal EEG activity with no clinical correlation.
- Seizures can be provoked or unprovoked.
- **PROVOKED SEIZURES:** provoked seizure occur following - fever; electrolyte imbalance; structural, inflammatory or metabolic disorders of brain; infections such as meningitis, encephalitis; or stroke. It is essential to recognize that provoked seizure do not evolve to epilepsy and often improve with treatment of underlying etiology and they do not require long-term antiepileptic drugs.

PATHOPHYSIOLOGY

- To function normally, the brain must maintain a continual balance between excitation and inhibition, remaining responsive to the environment while avoiding continued unrestrained spontaneous activity. The inhibitory transmitter gamma-aminobutyric acid is important, acting on ion channels to enhance chloride inflow and reducing the chances of action potential formation. Excitatory amino acids (glutamate and aspartate) allow influx of sodium and calcium, producing the opposite effect. It is likely that many seizures result from an imbalance between this excitation and inhibition.[2]
- Relative excess of excitatory neurotransmitters
- Deficit of inhibitory neurotransmitters

Etiology

- Birth asphyxia
- Birth trauma
- Developmental defect
- Hypocalcemia
- Hypoglycemia
- Kernicterus
- Intracranial hemorrhage (Hypoxic ischemic encephalopathy)
- Neonatal tetanus
- Meningitis
- Sepsis
- Inborn errors of metabolism

Correlation of time of onset of seizures and etiology: Most Frequent Time	Etiologie of Seizures
< 48 Hrs.	Hypoxic – ischaemic encephalopathy Intra cranial haemorrhage Hypoglycaemia, Hypoelectrolytemia Congenital Viral Infections Drug Induced Pyridoxine Dependency Non-ketotic Hyperglycaemia Urea cycle disorder
48-72 Hrs.	Cerebral dysgenesis, Early sepsis, Urea cycle disorder
7 days	Organic acidemias, Amino acidopathies, Bacterial meningitis, BFNC and BINS

HOMOEOPATHIC REMEDIES TO APPROACH A CASE OF CONVULSION:

1. **Absinthium**: – The convulsions are preceded by trembling; the patient makes grimaces; bites tongue; foams at mouth. As of especial service in cases of minor epilepsy, where consciousness is not entirely lost.[3]
2. **Artemisia vulgaris**: A remedy for epileptic conditions, and convulsive diseases of childhood and girls at puberty. Petit mal epilepsy. Absence of aura. The main symptom is frequent brief episodes of seizures in a short time period. The triggering factor for the seizure is strong emotions, including fear.[3]
3. **Bufo rana**: Epilepsy seizures where the attacks are present during sleep. The aura is felt in the genital area. It also works well for females who have attacks of seizures during menses. In young due to onanism or during coition, attacks are followed by headache.[3]
4. **Cuprum metallicum**: Where the seizure attack is preceded by an aura in the knee. The triggering factors for the attack include fright and anger. In this condition the thumbs are first affected; they are drawn into the palms and then the fingers close down over them with great violence. In the fingers and toes and in the extremities the spasmodic condition increases and extends until the limbs are in a state of great exhaustion. Tonic contractions, the limbs being drawn up with great violence and it seems as if the frame would be torn to pieces by the violent contractions of the muscles everywhere.[4] Convulsions of children, during dentition; children lie on abdomen and jerk the buttock up. Spasms with blue face and clenched thumbs.[5]

5. **Stramonium:** Where the convulsion arises after exposure to bright light or shining objects. The consciousness is preserved and convulsions of upper extremities and of isolated group of muscles.
6. **Cicuta virosa:** The action on the nervous system, producing spasmodic affections. Where the attacks of convulsion are marked by violent, distorted body shape. Patient is violent, with frightful distortions. Convulsions with marked Opisthotonus position. The person is totally unconscious. The face may be blue and jaw appears to be locked. Convulsions from concussion of brain. [3]
7. **Belladonna:** Epileptic attacks followed by nausea and vomiting. Convulsions commence in the arm. Spasms are followed by prolonged unconsciousness. Acts as a prophylactic in scarlet fever.
8. **Hyoscyamus:** – when deep sleep follows an epileptic fit. The other symptoms include picking at bedclothes and playing with hands and muscular twitching.
9. **Plumbum metallicum:** – chronic epilepsy, with marked aura; with haemorrhages.
10. **Febrile seizures:** – **Belladonna** is when there is fever with marked heat. The head is extremely hot with jerking of muscles. **Nux vomica** when extreme chilliness is present with seizures.
11. For Epileptic seizure arising from **Head Injury:** – Hypericum, Nat-sulph and Cicuta virosa.
12. For Epileptic seizures during **Dentition:** Chamomilla is suited when anger triggers a seizure during dentition. **Aethusa** is selected when the symptoms are clenched thumbs, fixed pupils and a locked jaw. Eyes are turned downwards.
13. For Epileptic seizures as per the certain triggering Factor: Chamomilla and Nux Vomica for the treatment of epileptic fits triggered due to **anger** outbursts. Opium and aconite for fits after a **fright**.
14. For Epileptic seizures due to **Suppressed Eruptions:** – Zincum Metallicum, Agaricus and Cicuta when the history of suppressing eruptions is ruled out prior to the onset of convulsion history.
15. For Epileptic seizures due to **neurocysticercosis:** – Belladonna, Cina maritima, Indigo.

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