

Editorial on Neonatal Seizures

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Editorial Note

A neonatal seizure occurs when a baby is less than four weeks old. Seizures are characterised by abnormally high or synchronised neuronal activity in the brain. They're the most common neurological concern in the nursery, and they often necessitate assessment and treatment in a neonatal intensive care unit. Seizures in neonates can be classified into two types: acute symptomatic seizures and hereditary or systemic seizures. The diagnosis is based on identifying the cause of the seizure and verifying the existence of a seizure by assessing electrical activity through electroencephalography (EEG). Treatment varies depending on the cause of the seizure, but anti-epileptic medications are commonly used.

Because of their immaturity, seizures in the neonatal population sometimes manifest differently than in other age groups. Evidence of seizure activity on an electroencephalogram, as well as clinical signs or symptoms, describes electro clinical seizures. However, since there may be no clinical movement abnormality in neonates (either because the seizures are subclinical or because they are not observed), the only symptom may be an abnormal level of awareness. When motor movements occur, gentle restraint by a nurse or caregiver may not be enough to stop them.

Causes

- There are a variety of causes for neonatal seizures. The cause of a reported seizure must be determined because treatment and prognosis differ depending on the underlying aetiology of the seizure. Seizures in the neonatal stage, in contrast to seizures in other age groups, are most frequently caused by the following processes:
 - Arterial stroke may be caused by intra-arterial thrombosis or embolism from the heart or placenta during pregnancy. A number of disorders that arise due to material causes during birth (oligohydramnios, chorioamnionitis, placental abnormalities) or neonatal factors raise the risk of perinatal arterial stroke (clotting disorders, congenital heart defects)
 - Infection of the Central Nervous System (CNS): CNS infections are observed in 3-10% of neonates who seize, though the exact occurrence differs between studies.

Diagnosis

It's difficult to detect seizure activity in a baby because often seizures have no clinical correlate. The only hint is always a shift in level of consciousness, which can be difficult to determine in a neonate. As a consequence, electroencephalography is used to try a precise measurement of irregular electrical activity in the brain (EEG). To associate any seizure movements with EEG recordings, the EEG is paired with video recordings of the infant.

Treatment

The aims of management are to assess the cause of the seizure, stop the seizure activity, and preserve physiologic parameters including oxygenation, breathing, blood glucose, and temperature after the diagnosis has been made. The treatment for a seizure is highly dependent on the cause of the seizure. Antimicrobials are commonly used to treat infectious causes of seizures (meningitis, meningoencephalitis, etc). (antibiotic, antifungal, or antiviral medications). Electrolyte or glucose irregularities, on the other hand, are treated by removing or lowering the offending electrolyte or sugar.

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Received: February 09, 2021; Accepted: February 16, 2021; Published: February 23, 2021

Citation: Raajitha B (2021) Editorial Note for Journal of Neonatal Biology. J Neonatal Biol, Vol:10 Iss:2

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