

Readily available clinical indicators may predict risk of adverse outcome in asphyxiated newborns who experience seizures

childhood
disability
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Summary

Perinatal asphyxia, or interruption in oxygen supply, before, during, or soon after birth, is the cause of subsequent seizures in approximately one half of newborns who experience them. More than half of these infants typically go on to develop normally, but some sustain brain injury that can lead to a range of disorders including cerebral palsy, intellectual disability, global developmental delay, or epilepsy. This study suggests four clinical indicators that seem to predict an adverse outcome following seizure subsequent to perinatal asphyxia at birth.

This study was a retrospective analysis of 62 infants born at term who experienced clinically evident seizures within the first month of life. Asphyxia in the perinatal period birth was determined to be the only plausible cause for seizures in all infants. Children who developed with no complications had one year of follow-up, while those who displayed adverse outcomes, including death, cerebral palsy, global developmental delay, or epilepsy, had at least two years of follow up. Instances of normal and adverse outcome were compared to several variables and binary logistic regression was used to designate those variables that independently predicted outcome.

What families should know

Depending on the extent of brain injury, one or more developmental disorders may emerge in newborns who experience seizures following birth. The indicators described in this study do not precisely predict which disorder will appear or how severely it will affect the child, but they do provide a good idea of whether or not the possibility for future developmental deficits exists.

What practitioners should know

Indicators that are readily available in newborns presenting with seizures following asphyxia can help doctors to give families a picture of the long-term development of their child. Present alone or with others, a low Apgar score, which is a subjective assessment of the newborn's overall health, evidence of aspirated stool, the type of seizure experienced, and moderate to severe abnormal electrical activity in the brain shown by electroencephalography (EEG) can all enhance risk for future neurological deficits. Newborns identified as at risk for these deficits can undergo prompt treatment to improve the prognosis for their long-term development.

Reference

[Garfinkle, J., and Shevell, M. Predictors of outcome in term infants with neonatal seizures subsequent to intrapartum asphyxia. *Journal of Child Neurology*, 26\(4\), 453-459.](#)