

Topiramate may be effective for treating seizures in newborns



Summary

Drugs that have typically been used to treat seizures in newborns are only 50% effective, and animal studies have suggested that they may be harmful to the developing brain. Topiramate, approved by the Food and Drug Administration (FDA) for use in children older than two years of age, has been shown to be effective for treating seizures, and, moreover, it seems to protect the brain from injury. This preliminary study confirms the potential for topiramate as an anti-seizure drug for newborns, and demonstrates a clear need for extensive prospective studies of its safety and efficacy.

This was a retrospective cohort study of topiramate use in six children born at term with acute seizures. The children were all non-responsive to standard seizure treatments and were administered topiramate instead. Five children were given 10mg/kg/day and one was given 3mg/kg/day of the drug. The medical charts of each child were inspected for subsequent seizure occurrence and potential topiramate side effects. When children presented no more clinical or electrographic signs of seizure, they were considered to be seizure free. Seizures were completely eliminated in three children and reduced in one child.

What families should know

Seizures in newborns may cause brain injury or they may be indicative of an underlying brain injury, and it is essential to treat injuries in addition to the seizures. For decades, neonatal seizures have been treated with phenobarbital and phenytoin, even though these have limited success and may be harmful to the developing brain. Rigorous studies may show that topiramate is a safer and more effective treatment for seizures in newborns.

What practitioners should know

Topiramate is frequently administered in addition to phenobarbital or phenytoin to treat seizures in newborns, but its effects have not been well documented. In this study, topiramate administration was associated with a reduction or resolution of seizures in four out of six children. Nonetheless, these results should be interpreted with caution, since they come from a retrospective analysis of medical records only. Further prospective studies with larger sample sizes are necessary to conclusively demonstrate that topiramate can safely and efficaciously be used to resolve seizures and treat their associated brain injuries.

Reference

[Glass, H., Poulin, C., Shevell, M. \(2011\). Topiramate for the treatment of neonatal seizures. *Pediatric Neurology*, 44\(6\), 439-442.](#)