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Correspondence

Ketogenic Diet in Epilepsy of Infancy With Migrating Focal Seizures

Dear Sir,

The study by Wirrell et al.[1] on ketogenic diet in infants widens the age spectrum of epileptics benefiting with diet modification. World over, consideration for ketogenic diet in infants is growing. GLUT 1 deficiency syndrome, pyruvate dehydrogenase deficiency, refractory West syndrome, Dravet syndrome, and epilepsy of infancy with migrating focal seizures (EIMFS) are the common indications for ketogenic diet in this age group.

Wirrell et al. have described the efficacy of ketogenic diet in 27 infants (including five with EIMFS). We would like to share our experience with a ketogenic diet in *KCNT1*-related EIMFS.[2] Our patient had intractable seizures since day three of life and had failed vitamin trials as well as multiple antiepileptic drugs. A ketogenic diet was initiated at age nine weeks at a ketogenic ratio of 1:1, which was gradually increased to 3.5:1. The diet was stopped after eight weeks due to nonresponsiveness and hyperuricemia.

Anecdotal reports illustrate genotype-dependent efficacy of a ketogenic diet in epileptic encephalopathies like EIMFS, ranging from complete response (*SCN2A*, *SCN1A*, *KCNQ2*) to partial or no response (*KCNT1*).[3,4] Effectiveness in interneuronopathies may be supported by facilitation of GABAergic transmission. The role of ketogenic diet in *KCNT-1*—related EIMFS is debatable. Pharmacoresponse and effectiveness of the ketogenic diet is better in *SCN2A* (second most common)-related EIMFS compared with *KCNT1*. The poor efficacy of ketogenic diet in *KCNT1*-related EIMFS suggests diverse mechanisms of epileptogenesis.[3] With the advent of precision medicine, the sequence of treatment (ketogenic diet and quinidine) in drug-resistant *KCNT1* epilepsy needs attention. An early initiation of a more effective modality may improve outcome by reducing seizure-related neuronal injury. Hence, it would be interesting to know the genetic etiology-wise efficacy of the ketogenic diet in Wirrell's cohort. Also, the role of nongenetic factors such as the number of drugs and duration of refractoriness before the initiation of ketogenic diet in nonresponders and responders may be worth mentioning.

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Priyanka Madaan, DM
Prashant Jauhari, DM*
Biswaroop Chakrabarty, DM
Sheffali Gulati, MD
Child Neurology Division
Department of Pediatrics
All India Institute of Medical Sciences
New Delhi, India

* Communications should be addressed to: Dr. Jauhari; Assistant Professor; Child Neurology Division; Department of Pediatrics; Room No. 3057A, Third floor, Teaching block All India Institute of Medical Sciences; New Delhi, India.
E-mail address: pjauhari0@gmail.com (P. Jauhari).

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Correspondence Reply to Madaan et al.

We thank Dr. Madaan and colleagues for their comments on our study and on the use of the ketogenic diet in their child with *KCNT1*-related epilepsy in infancy with migrating focal seizures. We did not have any patients with this specific mutation in our study, so cannot comment on our experience. However, case reports have documented efficacy in children with *KCNT1* mutations treated with a ketogenic diet.[1] As Dr. Madaan and colleagues mention, quinidine has been effective in some individuals with KCNT1-related epilepsy, while other studies have reported no benefit with this agent.[2–4]

We are hopeful that with time, child neurologists will better understand the specific pathophysiologic changes that result from the various genetic defects associated with such devastating, early onset epilepsies. Improved knowledge may lead to precision therapies and better epilepsy and developmental outcomes. However, until that time arrives, we believe the ketogenic

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diet continues to be an important, potentially effective, therapeutic option.

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Spoorthi Jagadish, MBBS, Eric T. Payne, MD, Lily Wong-Kisiel, MD, Katherine C. Nickels, MD, Susan Eckert, RDN, LD, Elaine C. Wirrell, MD
Child and Adolescent Neurology and Epilepsy
Mayo Clinic
Rochester, Minnesota
E-mail address: wirrell.elaine@mayo.edu (E.C. Wirrell).

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