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EDITORIAL COMMENTARY

Oral Calcium in Hypocalcemic Seizures: A Cup Half Full or Half Empty?

Dev Desai[1] · **Jitendra Kumar Sahu**[2]

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Appropriate recognition and treatment of hypocalcemia are crucial in seizures in developmentally normal preschool children [1]. The current study by Dhir and colleagues is a randomized controlled trial (RCT) comparing oral and intravenous (i/v) calcium as continuation therapy in hypocalcemic seizures [2]. Nearly all guidelines are unanimous on initial i/v calcium supplementation in children with hypocalcemic seizures, but there needs to be clarity on the duration of the continuation of i/v calcium infusions. Shaw stated that i/v therapy should be continued for 24 h but also mentioned that once severe symptoms abate, oral calcium can replace i/v infusions [3]. Cooper and Gittoes did not mention any particular duration of i/v calcium and advised that concurrent oral calcium supplements should be initiated [4]. No previous studies have compared oral and i/v calcium as continuation therapy for hypocalcemic seizures. There needs to be more data about the preferred continuation therapy for hypocalcemic seizures; thus, the present study assumes importance [2].

The study's primary strength lies in being a prospective RCT. Both groups have comparable baseline characteristics, which minimizes selection bias. Furthermore, the intervention was carried out only after obtaining objective laboratory evidence of hypocalcemia. The authors found no statistically significant difference in the risk of seizure recurrence within 48 h or the serum calcium levels at 24 and 48 h, respectively, between the two groups. The current study provides hope for using oral calcium as maintenance therapy in children with hypocalcemic seizures, which would avoid the considerable risks associated with i/v calcium infusions (namely extravasation, arrhythmias etc.). Oral therapy may also be helpful in resource-limited settings where trained paramedical staff or equipment like infusion pumps may not be available to precisely administer a drug like i/v calcium with the potential for severe side effects. Oral calcium is cheap and widely available in multiple formulations, thereby suited for pediatric patients, and might facilitate hassle-free treatment of hypocalcemic seizures.

The chief limitation of the current study is the limited sample size, which robs it of sufficient power (as reflected by wide confidence intervals) to accurately distinguish the effect size between the two groups. While the study uses ionized calcium at baseline, the parameter used at 24 and 48 h is serum calcium without any mention of serum albumin or corrected calcium levels. The study does not disclose the profile of the health care provider(s) monitoring the children for recurrences of seizures. It is well known that diagnosing seizures in young children can be tricky and requires experienced observers. Incorporating modalities like continuous video-electroencephalogram with verification of clinical events by a panel of experienced clinicians would have been better. It is particularly important because epileptic seizures are often associated with hypocalcemia and misinterpreted as hypocalcemic seizures. The study population also lacked an etiological workup for hypoparathyroidism.

In conclusion, the current study is interesting regarding oral calcium as a proposed maintenance therapy for hypocalcemic seizures. However, more studies with larger sample sizes are needed before oral calcium can become the standard of care.

Declarations

Conflict of Interest None.

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✉ Jitendra Kumar Sahu
jsh2003@gmail.com

[1] Department of Pediatrics, Postgraduate Institute of Medical Education & Research, Chandigarh, India

[2] Pediatric Neurology Unit, Department of Pediatrics, Postgraduate Institute of Medical Education & Research, Chandigarh, India

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