Description

We describe a case of peri-operative recurrent hypoglycemia in a 5 years old child with West syndrome on Modified Atkins Diet (MAD) for refractory epilepsy. He was on MAD for 6 months with good glucose control before a scheduled gastrostomy. His oral anti-epileptics consisted of sodium valproate, clobazam, levetiracetam and zonisamide. All medications except zonisamide were converted into equivalent parenteral forms pre-operatively. He was fasted for 6 hours before surgery and started on 0.9% sodium chloride infusion; his blood glucose (BG) was monitored 4 hourly. His hypoglycemia rescue plan consisted of oral fruit juice. The child's BG was 2.9 mmol/L at pre-induction, and 5 ml/kg of 10% dextrose was given which brought the BG to 5.3 mmol/L. His BG continued to decrease during the surgery. He had further episodes of hypoglycemia post-operatively with nadir of 2.1 mmol/L on post-operative day (POD) 1. Enteral feeding and anti-epileptics were resumed on POD 3 and 4, respectively. His BG was stabilised by POD 4.

Discussion

MAD is a treatment modality for children with refractory seizure1. It works by inducing ketosis with restriction in carbohydrates intake. Our case illustrated the peri-operative challenge of managing hypoglycemia while optimising epileptic therapy for patients on MAD. Carbohydrates are present in many medications including anti-epileptics2. Full assessment of carbohydrate load in all medications should be performed. During fasting, consideration should be given to the carbohydrate load in the child's intake and medications to prevent hypoglycemia. Anti-epileptics may further mask the signs of hypoglycemia3. Glucose monitoring with customized hypoglycemia rescue protocols incorporating intravenous route of dextrose is required during period of fasting.

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References

