

Introduction

Epilepsy remains the most common neurological disorder in children today. Approximately 6-14% of cases can develop into refractory epilepsy, that is difficult to control with anti-epileptic drugs (AED). At present, ketogenic diet has been explored as a potential treatment approach for refractory epilepsy in children and is applied in various parts of the world. The Modified Atkins Diet (MAD) is a less restrictive type of ketogenic diet while still remaining the same principles as the classic ketogenic diet. However, no existing studied have been performed to evaluate the use of the MAD ketogenic diet in children with refractory epilepsy. Several studies have been published regarding the effectiveness of MAD as same as classical ketogenic diet in children with refractory epilepsy for 3-6 months. Furthermore, the food menu for implementing the MAD ketogenic diet is also currently not available in Indonesia. This study aims to assess the influence, side effects, tolerance, degree of adherence, and menu of MAD ketogenic diet foods that can be easily applied to children with refractory epilepsy.

Objectives

To evaluate the efficacy of MAD among children with refractory epilepsy.

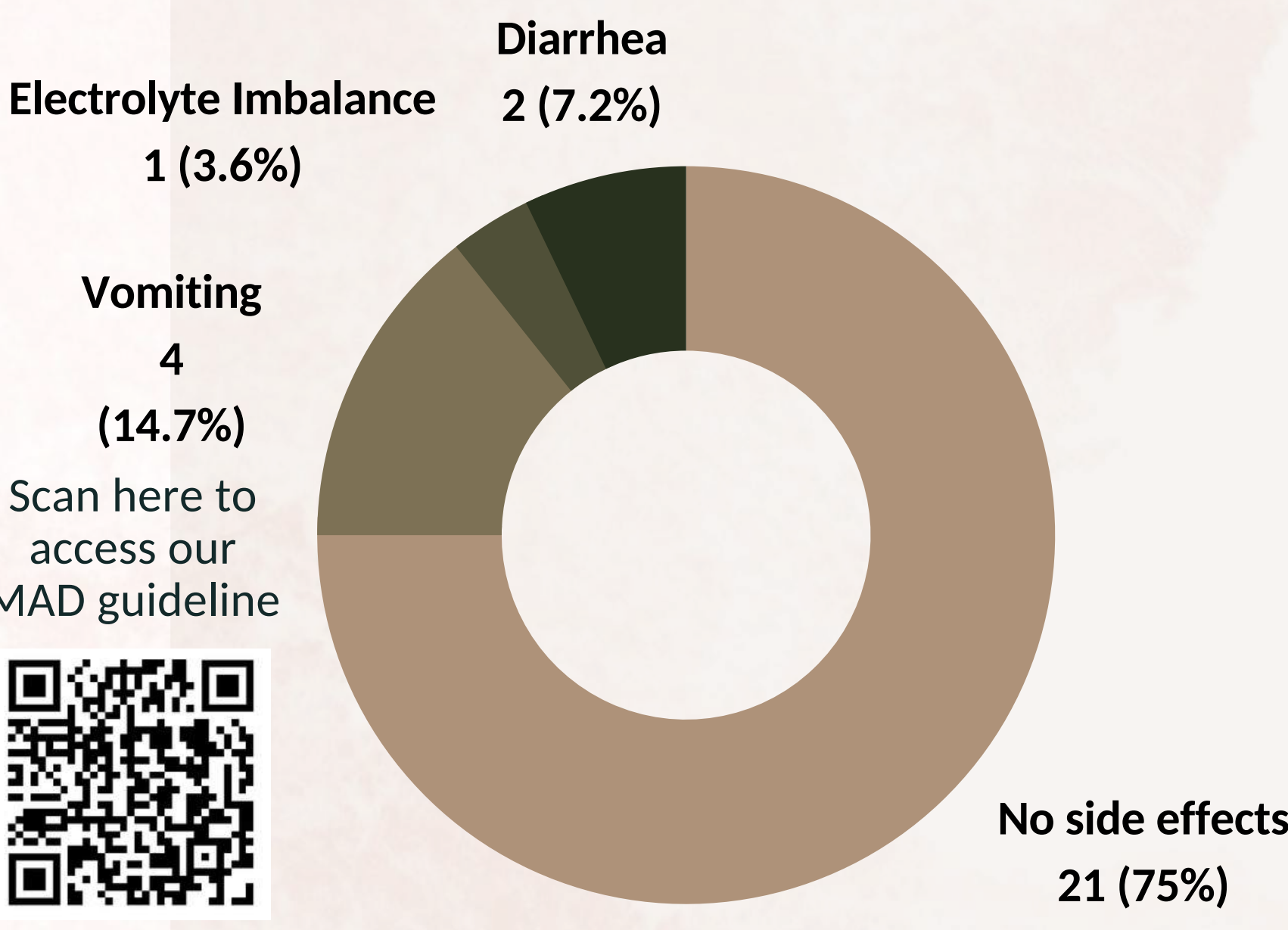
Methods

This is a pre-and post-treatment interventional study involving children diagnosed as refractory epilepsy aged 2-18 years old between April 2021 and March 2022 at Dr.Cipto Mangunkusumo General Hospital Jakarta, Indonesia. Subjects who met the inclusion criteria were treated with MAD ketogenic diet based on Indonesian menu as an add-on to the ongoing AEDs. The main outcome measure was the proportion of children who achieved seizure reduction, defined by at least 25% reduction of seizure frequency at 1,3, and 6 months.

Results

Of the 41 recruited children, 28 (68.3%) met the inclusion criteria. In total, 55% of children achieved seizure reduction in one month, 32% in 3 months, and 15% in 6 months. The seizure reduction of children was significantly higher at third months (70%) and sixth months (83.3%). The diet was generally well tolerated observed with diarrhea and vomiting being the most common adverse effects.

Seizure Frequency	Pre Median (Interval)	Post Median (Interval)	p
0 - 1 month (n=28)	90 (60 – 150)	70 (13 – 450)	0.551
0 - 3 month (n=11)	60 (6 – 195)	18 (5 – 220)	0.260
0 - 6 month (n=7)	60 (6 – 90)	10 (5 – 28)	0.028



Conclusions

The Modified Atkins Diet (with Indonesian food menu) was found to be effective and well-tolerated in Indonesian children with refractory epilepsy.

References

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