Lacosamide Experience in Childhood Epilepsy from a Tertiary Center, Turkey

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INTRODUCTİON

Epilepsy is one of the most common neurological conditions, an estimated 65 million people worldwide live with epilepsy (1), and approximately 25% to 30% of children with epilepsy have uncontrolled seizures despite antiepileptic drug treatment (1). Lacosamide (LCM) is a newer antiepileptic drug approved in 2008 as adjunctive therapy for partial-onset seizures (POS) in adults and 2014, was approved as monotherapy for POS by the US Food and Drug Administration (FDA) (2). LCM exerts its anticonvulsant activity by selectively enhancing the slow inactivation of voltage-gated sodium channels. LCM modulates the expression of collapsin response mediator protein 2 (CRMP2) and phosphorylated CRMP2 and the interaction between lacosamide and CRMP2 seems to decrease hippocampal neuronal loss and inhibit mossy fiber sprouting (3). LCM has a predictable high oral bioavailability and low drug-drug interactions (2). Because of the difficulties of conducting clinical trials in children, studies with adult patients are more common in the literature. Some of the previous observational or retrospective studies in children who received lacosamide as add-on therapy have been published describing response rates in the range of 20% to 67% and seizure-free rates increased over time(4).

OBJECTİVE

Our aim is to evaluate efficacy and tolerability of lacosamide in focal and generalized drug-resistant childhood epilepsy.

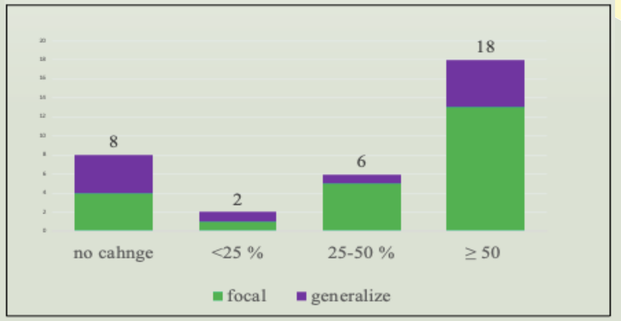
MATERİAL AND METHODS

We included patients who followed up at the Medical Faculty of Akdeniz University between May 2015 and January 2022 with the diagnosis of childhood epilepsy and received oral lacosamide as add-on therapy. The age, gender, clinical history, semiological features of the seizures, etiological classification, EEG findings, antiepileptic treatment choices, and the response of the lacosamide treatment were evaluated retrospectively from the hospital records. The inclusion criteria were as follows: followed up drug-resistan childhood epilepsy ,treated with LCM and had accesible data from hospital records. The response rate of lacosamide was determined by the decrease of seizure frequency (seizure freedom, ≥50%, and 25-50% reduction , < 25% reduction, no change in seizures).

Characteristic	Pediatric patients
Mean age ± SD (years)	14.8 ± 4.17
Sex (M/F)	
male	15
female	19
Mean age at epilepsy onset ± SD (years)	4.6 ±4.5
Mean age at onset LCM therapy ± SD (years)	11.8 ±3.8
Epileptic syndrome	
Frontal lobe epilepsy	17 (%50)
Lennox-Gestaut Syndrome	2 (5.8%)
Progressive myoclonic epilepsy	2 (5.8%)
Occipital lobe epilepsy	2 (5.8%)
West syndrome	1 (2.9 %)
Idiopathic/genetic epilepsy.	10 (29.4%)
Number of previous AED	
Mean	6.17 ± 1.8
Median	6
Number of concomintant AEDs at baseline,n (%)	
1-3	23 (%67.6)
4-7	10 (%29.4)
>7	1 (%2.9)

RESULTS

A total of 34 children diagnosed with epilepsy were evaluated for the study. Lacosamide therapy had been initiated, as add-on therapy, patients with focal (67.7%) and generalized (32.3%) epileptic activity based on interiktal EEG records. In addition to oral antiepileptic treatment, 13 (38.2 %) had been on the ketogenic diet while 3 patient (8.8 %) had a vagal nerve stimulator . In two children, seizures had still continued despite resective epilepsy surgery. The mean LCM dosage during the maintenance phase was 308,8 mg/day, and the median dosage was 300 mg/day. Minor side effects such as abdominal pain, pallor, dizziness and rash were reported in 7 (20.5%) children and led to discontinuation of LCM therapy in 5 patient and making dosage revision in 2 patient . 6 of these patients were using sodium- channel bloker concomitantly. No death or severe adverse reactions were reported.



CONCLUSION

LCM as an useful and safe option for treatment of pediatric refractory epilepsy. Although the response to lacosamide treatment is more effective in patients with focal seizures, may be considered to initiate lacosamide at an earlier stage, independent of seizure type, for the higher the likelihood of achieving a remission. Presentation of pediatric case series is important in terms of contributing to the literature, since there are data on effects and side effects mostly in adult patients. More detailed investigation is required of the safety and efficacy of LCM.

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