Use of lacosamide in pediatric patients with epilepsy as adjunctive therapy, systematic review of the literature

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Abstract

Objective: To present the evidence published about the safety and efficacy of lacosamide in pediatric patients with epilepsy (Focal or generalized epilepsies) and status epilepticus in children younger than 21 years, in order gather evidence of its use in pediatric population. **Methods:** We conducted search in PubMed, Embase, Cochrane library and Scielo and found 32 articles that fulfilled the inclusion criteria. **Findings:** Lacosamide, is one of the newer AED (Antiepileptic Drugs) approved for focal refractory and focal onset epilepsies as an add-on treatment in patients older than 16 years. However there is growing evidence of its use, security and efficacy in pediatric population, the number of patients involved in the studies revisited are 687 with ages between 4 months and less than 21 years. Mean maintenance dose was 7,2 mg/kg/d (With a range between 1-20 mg/kg/d) Adverse effects do not differ from others found in others AED, they are present in about 33,5% of all patients; With a mean success seizure free rates of 26,6% Studies revisited had major issues on long term following. In addition we found two small retrospective studies involving status epilepticus with mean dose of 10,5 mg, with effective detention of Status epilepticus in 44% approximately.

Conclusions: Studies shows lacosamide as a safe option in pediatric population with focal onset and refractory epilepsies as an add on therapy given its seizure control, safety profile, and interaction between others medications, however adverse effects were about one third of patients and dose ranges were extremely variable and this could lead to an increase in adverse effects ratio. In terms of generalized epilepsies the evidence is controversial. Longer follow-up studies with standardized mean doses are needed. (1–7)

Image

Table1.

Recent Publications (minimum 5)

1. Mcginnis E, Kessler SK. Lacosamide use in children with epilepsy : Retention rate and effect of concomitant sodium channel blockers in a large cohort. 2016;(Lcm):1–10.
2. Rufo-campos M, Martı A, Casas-ferna C, Smeyers-dura P, Campos-castello J. Efficacy and Tolerability of Lacosamide in the Concomitant Treatment of 130 Patients Under 16 Years of Age with Refractory Epilepsy. 2012;12(4):187–97.
3. Grosso S, Parisi P, Spalice A, Verrotti A, Balestri P. Efficacy and safety of lacosamide in infants and young children with refractory focal epilepsy. Eur J Paediatr Neurol [Internet]. Elsevier Ltd; 2014 Jan [cited 2014 Dec 2];18(1):55–9. Available from: http://www.ncbi.nlm.nih.gov/pubmed/24129195
4. Miskin C, Khurana DS, Valencia I, Legido A, Hasbani DM, Carvalho KS. Efficacy and Tolerability of Lacosamide in the Treatment of Children With Refractory Generalized Epilepsy. 2016;
5. Poddar K, Sharma R, Ng Y. Baylor College of Medicine / The Children ' s Hospital of San Antonio. Pediatr Neurol [Internet]. Elsevier Ltd; 2016; Available from: http://dx.doi.org/10.1016/j.pediatrneurol.2016.03.021
6. Arkilo D, Gustafson M, Ritter FJ. Clinical experience of intravenous lacosamide in infants and young children. Eur J Paediatr Neurol [Internet]. Elsevier Ltd; 2016; Available from: http://dx.doi.org/10.1016/j.ejpn.2015.12.013
7. Lortie A, Major P, Diadori P, Vanasse M, Rossignol E, Anjou GD, et al. Efficacy and safety of lacosamide as an adjunctive therapy for refractory focal epilepsy in paediatric patients : a retrospective single-centre. 2015;17(4).



Biograpy

Sebastian Ortiz-De la Rosa Pediatric Neurologist with expertise in Epilepsy, specially in pediatric epileptic syndromes and their current and future treatment. Currently working on inflammation profile of ACTH candidate patients.