

Angurana SK, Suthar R. Efficacy and safety of levetiracetam versus phenytoin as second line antiepileptic agent in Pediatric convulsive status epilepticus: A systematic review and meta-analysis of randomized controlled trials. medRxiv. 2020:2020.10.29.20222133.

Objective:

- To evaluate efficacy and safety of Levetiracetam (LEV) in comparison to phenytoin (PHT) as second line antiseizure medication (ASM) for Pediatric convulsive status epilepticus (SE).

Data source:

- PubMed, Embase, Google scholar, Scopus, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Cochrane Database of Systematic Reviews and Cochrane Central Register of Controlled Trials.

Study selection:

- RCTs assessing LEV and PHT as second line agent for convulsive SE in children <18 years published between 1st Jan 2000 to 30th Sept 2020.

Data extraction:

- Primary outcome:** Proportion of children achieving seizure cessation within 5–60 minutes of completion of study drug infusion
- Secondary outcome:** Seizure cessation within 5 minutes, time to achieve seizure cessation, seizure recurrence between 1–24 hours, intubation, and cardiovascular instability.
- Data was analysed using RevMan version 5.4 and quality analysis was done using Cochrane risk-of-bias tool.

ACADEMIC P.E.A.R.L.S

Pediatric Evidence And Research Learning Snippet



Levetiracetam versus Phenytoin as Second Line Antiepileptic Agent in Pediatric Convulsive Status Epilepticus

Data synthesis:

- Eleven RCTs with 2177 children (1024 received LEV and 988 received PHT).
- Seizure cessation within 5–60 minutes was similar with both [81% in LEV vs. 76% in PHT, risk ratio (RR)=1.04, 95% CI 0.9–1.13, p=0.29].
- Seizure recurrences within 1–24 hours was higher with PHT as comparison to LEV (15% vs 9%, RR=0.64, 95% CI 0.42–0.99, p=0.04).
- Seizure cessation within 5 minutes, time to achieve seizure cessation, requirement of intubation/mechanical ventilation, and cardiovascular instability were similar with both the drugs.
- Three studies had low risk of bias and eight studies had high risk of bias.

Conclusion:

- LEV is not superior to PHT in efficacy and safety as second line ASM for Pediatric convulsive SE.
- The seizure recurrences between 1–24 hours were significantly higher with PHT in comparison to LEV.

EXPERT COMMENT



Levetiracetam is comparable to phenytoin in efficacy and safety. The rate of seizure recurrence is more with phenytoin. There is trend to use levetiracetam as second line ASM in clinical practice with assumption of lesser side effects.

Dr Suresh Kumar Angurana, MD, DNB, IDPCCM, FIMSA, FCCP, DM
Pediatric Critical Care Assistant Professor, Division of
Pediatric Critical Care, Department of Pediatrics, APC, PGIMER, Chandigarh

DR MANINDER S DHALIWAL

Editor – Academic Pearls
pedpearls@gmail.com

DR BAKUL JAYANT PAREKH

National President 2020

DR G.V. BASAVARAJ

Hon. Secretary Gen. 2020-21

Reference

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