

# Levetiracetam as an alternative to phenytoin for second-line emergency treatment of children with convulsive status epilepticus: the EcLiPSE RCT

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**Declared competing interests of authors:** Carrol Gamble was a member of the National Institute for Health Research (NIHR) Efficacy and Mechanism Evaluation Funding Committee (2015–19). Helen Hickey reports grants from the NIHR Health Technology Assessment programme outside the submitted work.

**Disclaimer:** This report contains transcripts of interviews conducted in the course of the research and contains language that may offend some readers.

Published November 2020

DOI: 10.3310/hta24580

## Plain English summary

### The EcLiPSE RCT

Health Technology Assessment 2020; Vol. 24: No. 58

DOI: 10.3310/hta24580

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## Plain English summary

Most epileptic tonic-clonic seizures, also called convulsions, last for < 4 minutes and stop spontaneously. A convulsion that lasts for > 5 minutes is called convulsive status epilepticus. This may cause neurological abnormalities or, rarely, death.

There is good scientific evidence for the best first-line medicine, called a benzodiazepine, to stop convulsive status epilepticus. When a benzodiazepine has not stopped status, a second-line medicine is given. The usual second-line medicine, which has been used for > 50 years, is phenytoin (Epanutin, Pfizer Inc., New York, NY, USA). However, it stops status in only half of children. It must be given slowly because it can cause unpleasant and potentially serious side effects. A new medicine called levetiracetam (Keppra, UCB Pharma, Brussels, Belgium) may be more effective. It seems to have less serious side effects than phenytoin. However, there is no good scientific evidence as to whether phenytoin or levetiracetam is better. A randomised controlled trial is the best scientific way to decide which of these two medicines is better.

The Emergency treatment with Levetiracetam or Phenytoin in Status Epilepticus in children (EclIPSE) trial was a randomised controlled trial that compared levetiracetam with phenytoin. A total of 152 children were randomised to receive levetiracetam and a total of 134 children were randomised to receive phenytoin. Research without prior consent was shown to be acceptable to parents, doctors and nurses. Parents' consent to use their child's data and continue in the trial was provided after the emergency situation was resolved.

Convulsive status epilepticus stopped in 70.4% of the levetiracetam-treated children and in 64% of the phenytoin-treated children.

The median time to status stopping was 35 minutes in the levetiracetam-treated children and 45 minutes in the phenytoin-treated children.

Only one participant on phenytoin (vs. none on levetiracetam) experienced serious side effects that were thought to be caused by their treatment.

None of the results showed any statistically significant or meaningful difference between levetiracetam and phenytoin. However, the results suggest that levetiracetam might be an alternative choice to phenytoin.

ISSN 1366-5278 (Print)

ISSN 2046-4924 (Online)

Impact factor: 3.370

*Health Technology Assessment* is indexed in MEDLINE, CINAHL, EMBASE, the Cochrane Library and Clarivate Analytics Science Citation Index.

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## This report

The research reported in this issue of the journal was funded by the HTA programme as project number 12/127/134. The contractual start date was in June 2014. The draft report began editorial review in November 2019 and was accepted for publication in July 2020. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The HTA editors and publisher have tried to ensure the accuracy of the authors' report and would like to thank the reviewers for their constructive comments on the draft document. However, they do not accept liability for damages or losses arising from material published in this report.

This report presents independent research funded by the National Institute for Health Research (NIHR). The views and opinions expressed by authors in this publication are those of the authors and do not necessarily reflect those of the NHS, the NIHR, NETSCC, the HTA programme or the Department of Health and Social Care. If there are verbatim quotations included in this publication the views and opinions expressed by the interviewees are those of the interviewees and do not necessarily reflect those of the authors, those of the NHS, the NIHR, NETSCC, the HTA programme or the Department of Health and Social Care.

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