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Unintentional Levetiracetam Overdose in an Eleven-Week-Old Infant Without Delayed Effects on One-Year Follow Up

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Introduction

Levetiracetam is a commonly used and well-tolerated anticonvulsant. The most common adverse events are somnolence, irritability, asthenia and dizziness.[1] Serious systemic effects are rarely seen.[2]

We present the case of a large pediatric overdose with long term follow up.

Case

An 11-week-old 3.6 kilogram male with no medical history was unintentionally given 170 mg of liquid levetiracetam (47 mg/kg) instead of the child's famotidine. In the Emergency Department (ED) he had normal vital signs, was acting at his baseline, and had a normal neurologic examination. He was admitted overnight for observation and was discharged home the following day. His levetiracetam concentration was 55.4 mcg/mL. Telephone follow up 1 year later revealed him reaching all appropriate milestones with no focal deficits and no developmental delay.

Discussion

The mechanism of action of levetiracetam is incompletely understood and it undergoes minimal metabolism.[2] With good renal function, the elimination half life was found to be similar in overdose and therapeutic use.[3] The maximum recommended dose of levetiracetam in children less than 6 months of age is 42 mg/kg divided twice daily.

The patient did not have a seizure history and received one large dose of levetiracetam 47 mg/kg. We believe this to be the youngest case of a confirmed levetiracetam overdose. The child did not experience any compilations and one year later showed no long-term effects.

Previous literature reported the youngest case of overdose in a 10-month-old child with seizure history. The child received a ten-fold overdose over 35 days and presented to the hospital somnolent and returned to baseline after two days of supportive care and observation; no levetiracetam concentrations were assessed in that case.[4]

Conclusions

Levetiracetam is felt to be a well-tolerated medication. This case report of the youngest overdose of levetiracetam showed no acute or toxicity or delayed effects during a 1 year follow up.