9-17-2020

# Lamotrigine Overdose Presenting as Shock and Pulmonary Edema

Savannah P. Ellenwood

John A. Mason

Nathaniel E. Link

Robert C. Hellinga

Natasha C. James

*See next page for additional authors*

## Authors

Savannah P. Ellenwood, John A. Mason, Nathaniel E. Link, Robert C. Hellinga, Natasha C. James, and Anjali V. Subbaswamy

# Lamotrigine Overdose Presenting as Shock and Pulmonary Edema

Savannah P. Krebsbach, MD, John A. Mason, MD, Nathaniel E. Link, MD, Robert C. Hellinga, PharmD, Natasha C. James, MD, Anjali V. Subbaswamy, MD

## Background

•Lamotrigine (LTG) is a broad-spectrum anti-epileptic drug with a good safety profile used to treat general and focal epilepsy.

•Toxicity is uncommon and usually mild - rash, headache, nausea, abdominal pain, somnolence, dizziness, and aggravated seizure activity.

•More severe adverse reactions are rare, but include encephalopathy, hypotension, wide complex tachycardia, cardiac arrest, and death.

•LTG drug levels do not consistently correlate with either therapeutic effect or toxicity, though higher levels are thought to have a higher risk of toxicity.

## Objectives

To report an unusual presentation of LTG toxicity to raise awareness, avoid anchoring bias and decrease time to diagnosis.

## Methods

Multidisciplinary case report
Joint effort by :
Pediatric Emergency Dept
Pediatric ICU
Pediatric Neurology
Pediatric Pharmacy

## Results

13 yo Hispanic female w/focal epilepsy x 5 yrs, fairly well controlled on LTG. Last seizure 3 wks prior. She was found at home gagging, vomiting with altered mental status, sedated, possibly post-ictal.

DDx included seizure, ingestion, stroke and malingering.

She was tachycardic w/HR 128. Had normal CTA Brain, Neg Utox. Then she became acutely hypoxic and hypotensive, had florid pulmonary edema and required intubation and fluid resuscitation, NE and Epi to stabilize. She required high PEEP of 18 on the vent.

Within 2 days she was stable, extubated and off pressors. Mental status normal. Infectious w/u negative. Echo normal. LTG level was found to be high at 34 ug/ml. In the absence of other diagnoses, this was determined to be Lamotrigine toxicity.

## Discussion

This case report details a case of Lamotrigine toxicity in a thirteen-year-old Hispanic female with moderately well-controlled focal epilepsy presenting with :

•acute florid pulmonary edema

•fluid refractory vasodilatory shock.

These symptoms have not been reported together elsewhere in the pediatric literature. By expanding upon the known presentation of Lamotrigine toxicity in children, the time to diagnosis for future cases may be shortened, providers may avoid anchoring bias, and morbidity may decrease.

## References

•Alyahya B, Friesen M, Nauche B, Laliberté M. Acute lamotrigine overdose: a systematic review of published adult and pediatric cases. *Clin Toxicol (Phila).* 2018;56(2):81-89.

Lamotrigine. National Library of Medicine Toxicology Data Network. Published 2018.

Choonara I. Anti-Epileptic Drug Toxicity in Children. *Children (Basel).* 2018;5(5).

Moore PW, Donovan JW, Burkhart KK, Haggerty D. A case series of patients with lamotrigine toxicity at one center from 2003 to 2012. *Clin Toxicol (Phila).* 2013;51(7):545-549.

**Disclosure:** Authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation: