

Gabapentin: ERAS Darling with a Dark Side

# Gabapentin: ERAS Darling with a Dark Side Do Respiratory Depression Deaths Warrant Pathway Caution?

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## Outline

### 1. Enhanced Recovery After Surgery (ERAS)

- a. Overview and History
- b. ASER
- c. Clinical Pathways
- d. Benefits / Agents Utilized
- e. Preoptimization Pathways (HiRISE)

### 2. History of ERAS

- a. Kehlet H. Multimodal approach to control postoperative pathophysiology and rehabilitation. *BJA: British Journal of Anaesthesia*. 1997;78(5):606-617.
- b. ERAS Tenets
  - i. Key factor is surgical stress
  - ii. Most approaches to date were unimodal
  - iii. Involves multidisciplinary investment
  - iv. Goals

### 3. American Society for Enhanced Recovery (ASER)

- a. <https://www.aserhq.org/web/index.html>
- b. Founding members / date established
- c. Mission

### 4. ERAS Clinical Pathways

- a. Melnyk M, Casey RG, Black P, Koupparis AJ. Enhanced recovery after surgery (ERAS) protocols: Time to change practice? *CUAJ*. October 2011:342-348.

- b. Preoperative
- c. Intraoperative
- d. Postoperative

## 5. HiRiSE – Vanderbilt High Risk Surgical Encounter Clinic

## 6. Gabapentin

- a. Structure
- b. Indications & Uses – initial & subsequent
- c. Gabapentin in ERAS
  - i. Initial Dosing – Vanderbilt & other institutions
  - ii. Schmidt PC, Ruchelli G, Mackey SC, Carroll IR. Perioperative gabapentinoids: choice of agent, dose, timing, and effects on chronic postsurgical pain. *Anesthesiology*. 2013;119(5):1215-1221.
  - iii. Greco M, Capretti G, Beretta L, Gemma M, Pecorelli N, Braga M. Enhanced Recovery Program in Colorectal Surgery: A Meta-analysis of Randomized Controlled Trials. *World J Surg*. 2013;38(6):1531-1541.
- d. Gabapentin – Discharge delay, sedation, and respiratory depression
  - i. Schmidt P, Rao S. Effects of gabapentin, pregabalin and gastroretentive gabapentin on simulated driving, daytime sedation and cognition. *Pain Manag*. 2018;8(4):297-306.
  - ii. Cavalcante AN, Sprung J, Schroeder DR, Weingarten TN. Multimodal Analgesic Therapy With Gabapentin and Its Association With Postoperative Respiratory Depression. *Anesth Analg*. 2017;125(1):141-146.
  - iii. Siddiqui NT, Yousefzadeh A, Yousuf M, Kumar D, Choudhry FK, Friedman Z. The Effect of Gabapentin on Delayed Discharge from the Postanesthesia Care Unit: A Retrospective Analysis. *Pain Pract*. 2018;18(1):18-22.

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- iv. Weingarten TN, Jacob AK, Njathi CW, Wilson GA, Sprung J. Multimodal Analgesic Protocol and Postanesthesia Respiratory Depression During Phase I Recovery After Total Joint Arthroplasty. *Reg Anesth Pain Med*. 2015;40(4):330-336.

### e. Gabapentin & naloxone administration

- i. Deljou A, Hedrick SJ, Portner ER, et al. Pattern of perioperative gabapentinoid use and risk for postoperative naloxone administration. *Br J Anaesth*. 2018;120(4):798-806.
- ii. Savelloni J, Gunter H, Lee KC, et al. Risk of respiratory depression with opioids and concomitant gabapentinoids. *Journal of Pain Research*. 2017;10:2635-2641.
- iii. Gomes T, Juurlink DN, Antoniou T, Mamdani MM, Paterson JM, van den Brink W. Gabapentin, opioids, and the risk of opioid-related death: A population-based nested case-control study. Tsai AC, ed. *PLoS Med*. 2017;14(10):e1002396.

### f. Ongoing Investigations and Future Directions