

PubMed

Format: Abstract

Full text links

ANESTHESIOLOGY

Anesthesiology. 2013 Jul;119(1):178-90. doi: 10.1097/ALN.0b013e318297630d.

## Perioperative systemic magnesium to minimize postoperative pain: a meta-analysis of randomized controlled trials.

De Oliveira GS Jr<sup>1</sup>, Castro-Alves LJ, Khan JH, McCarthy RJ.

### Author information

### Abstract

**BACKGROUND:** Systemic magnesium has been used to minimize postoperative pain with conflicting results by clinical studies. It remains unknown whether the administration of perioperative systemic magnesium can minimize postoperative pain. The objective of the current investigation was to evaluate the effect of systemic magnesium on postoperative pain outcomes.

**METHODS:** A wide search was performed to identify randomized controlled trials that evaluated the effects of systemic magnesium on postoperative pain outcomes in surgical procedures performed under general anesthesia. Meta-analysis was performed using a random-effect model. Publication bias was evaluated by examining the presence of asymmetric funnel plots using Egger regression.

**RESULTS:** Twenty randomized clinical trials with 1,257 subjects were included. The weighted mean difference (99% CI) of the combined effects favored magnesium over control for pain at rest ( $\leq 4$  h,  $-0.74$  [ $-1.08$  to  $-0.48$ ]; 24 h,  $-0.36$  [ $-0.63$  to  $-0.09$ ]) and with movement at 24 h,  $-0.73$  ( $-1.37$  to  $-0.1$ ). Opioid consumption was largely decreased in the systemic magnesium group compared with control, weighted mean difference (99% CI) of  $-10.52$  ( $-13.50$  to  $-7.54$ ) mg morphine IV equivalents. Publication bias was not present in any of the analysis. Significant heterogeneity was present in some analysis, but it could be partially explained by the sole intraoperative administration of magnesium compared with the intraoperative and postoperative administration. None of the studies reported clinical toxicity related to toxic serum levels of magnesium.

**CONCLUSION:** Systemic administration of perioperative magnesium reduces postoperative pain and opioid consumption. Magnesium administration should be considered as a strategy to mitigate postoperative pain in surgical patients.

### Comment in

Magnesium: is there a signal in the noise? [Anesthesiology. 2013]

PMID: 23669270 DOI: [10.1097/ALN.0b013e318297630d](https://doi.org/10.1097/ALN.0b013e318297630d)

[Indexed for MEDLINE]



Publication types, MeSH terms, Substances

LinkOut - more resources

PubMed Commons

[PubMed Commons home](#)

0 comments

[How to join PubMed Commons](#)