

# The Role of Nebulized Magnesium in Reducing Postoperative Sore Throat

## Abstract

- **Purpose:** This systematic review seeks to analyze the available research to determine whether nebulized magnesium administration reduces postoperative throat pain.
- **Methodology:** This study began with an integrative, critical review of published literature. An integrative review was selected in order to compare studies and sources of data that were varied in nature.
- **The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)** framework was used to select studies across a range of six databases, and four that were determined to be the most relevant were hand-selected and then subjected to the critical and integrative review.
- **Results:** Results from the four selected studies showed that nebulized magnesium is effective for the reduction of post-operative pain.
- **Implications for Practice and Research:** Results from this review have important implications for both practice and research.

## Introduction

- Surgical interventions often induce physical and psychological pain which can be alleviated with anesthetics (Hashimoto et al., 2020)
- Traditional anesthetics typically involve the administration of opiate-based medications. (Mostafa et al., 2018)
- The administration of opioid-based drugs is increasingly problematic (Hashimoto et al., 2020)
- Alleviating pain may present conflicts between maximizing relief and exposing the patient to adverse events and long-term chemical dependency
- Nebulized magnesium as a means to reduce postoperative sore throat offers a way to maximize patient comfort while decreasing opioid-related risks to the patient
- Nebulized magnesium may independently decrease the incidence and severity of postoperative throat pain thus reducing the administration of postoperative opioid

## Materials & Methods

### Search Strategy

- The PRISMA protocol guided the search. The timeframe selected for the searches was 2016 to 2021.
- Databases used included *Ovid/Lippincott Journals, ProQuest, the Cochrane Collection, Medline, The Cumulative Index for Nursing and Allied Health Literature (CINAHL) and Science Direct.*

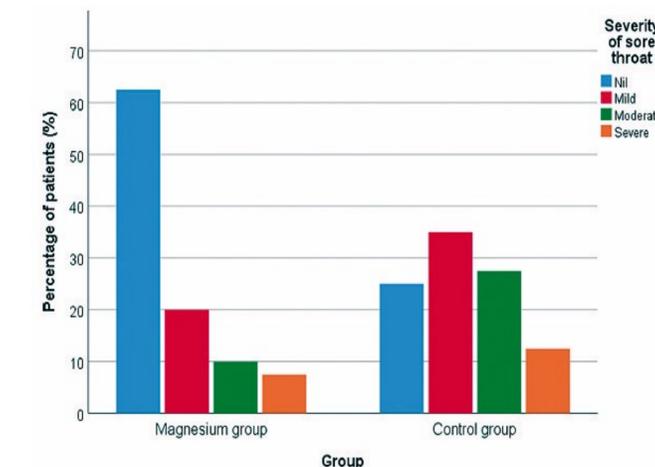
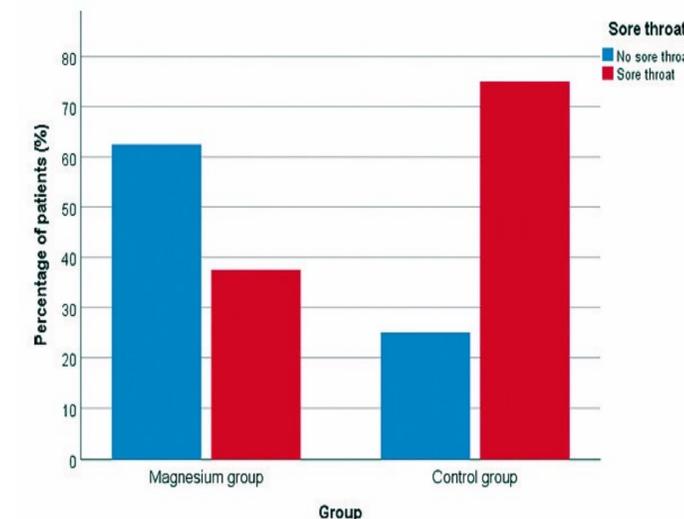
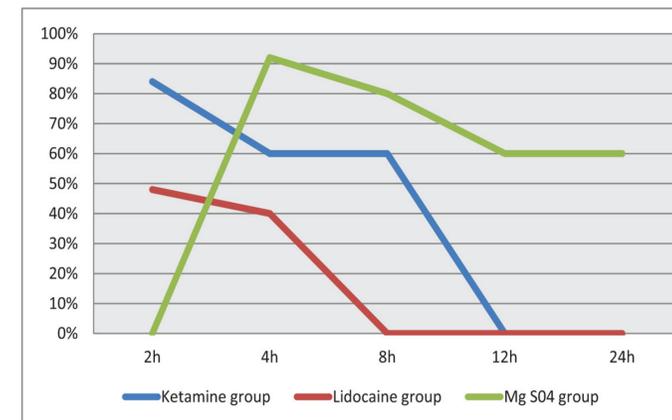
### Literature Selection

- All studies were screened and analyzed by two independent reviewers
- Five studies were excluded for not having multiple pre-and post-intervention measurements, potential unreliability of outcome measurements, and/or unclear concealment of group allocation or questionable blindness of the researchers and participants
- Four studies remaining after the selection process were included for synthesis

## Results

- Kolcaba's (1994) Theory of Comfort was selected to inform the findings of this review
- Results demonstrated that nebulized magnesium succeeded in providing comfort to patients by alleviating their pain.
- Nebulized magnesium is superior to most alternative anesthetic strategies at the four-hour point following surgery to 24 hours and can enhance patient outcomes and experiences by contributing to their comfort.
- The quality of the studies included in this review demonstrates prominent variability even though each was published in a peer-reviewed journal.

## Results cont.



## Conclusion

### Authors' Recommendations for the Problem

- Recommend that nebulized magnesium be used intraoperatively for the management of postoperative pain (as measured via sore throat).
- The authors of this review also recommend that this intervention be implemented as standard protocol.

### Implications for Practice

- Nebulized magnesium appears to demonstrate sufficient clinical efficacy for intraoperative pain management and the reduction of postoperative pain and sore throat
- Results from this review confirm results from other studies and reviews that suggest benefits to including nebulized magnesium as a viable addition and potential replacement to standard, opiate-based pain management interventions.

### Implications for Research

- More randomized controlled trials would control for biases and other sources of error, thereby strengthening the case for adding nebulized magnesium to standard anesthesia care protocols.

## References

- Upon Request