



ABSTRACTS: VOLUME 8, SPECIAL ISSUE {8th Undergraduate Conference}

THE COMPARISON OF REMIMAZOLAM AND MIDAZOLAM IN BRONCHOSCOPIC SEDATION: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

Al-Hareth M. Amro¹, Yahya Kayed AbuJwaid¹, Salahaldeen Deeb¹, Yousef Abu Asbeh^{1,2}

Supervisor: Yousef Abu Asbeh^{1,2}

¹ Faculty of Medicine, Al-Quds University, Jerusalem, Palestine

² Thoracic Surgery Unit, Al-Ahli Hospital, Hebron, Palestine

Abstract:

Background: Effective sedation is essential for bronchoscopy to ensure patient comfort and procedural success. Midazolam is commonly used; however, it is associated with longer induction and recovery times. Remimazolam, a novel ultra-short-acting benzodiazepine, has emerged as a potential alternative due to its rapid onset, shorter duration of action, and favorable safety profile. Study Purpose.

Objectives: This study aimed to evaluate the efficacy and safety of remimazolam compared with midazolam for sedation during bronchoscopy.

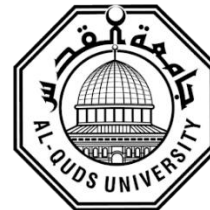
Methods: A systematic review and meta-analysis of four randomized controlled trials (RCTs) including 630 patients undergoing bronchoscopy was conducted. Patients receiving remimazolam were compared to those receiving midazolam. Primary outcomes included induction time, recovery time, and the need for rescue sedation. Secondary outcomes included procedure duration and the incidence of intraoperative and postoperative adverse events. A random-effects model was applied for statistical analysis, and the quality of evidence was assessed using the GRADE framework.

Results: Remimazolam significantly reduced induction time by 3.2 minutes (95% CI: -5.51 to -0.91, $p = 0.006$) compared to midazolam. Recovery time was also significantly shorter (SMD: -0.976, 95% CI: -1.48 to -0.47, $p < 0.001$). Additionally, patients receiving remimazolam required significantly less rescue sedation (OR: 0.223, 95% CI: 0.107 to 0.467, $p < 0.001$). There were no statistically significant differences between the two groups in procedure duration or in the incidence of intraoperative and postoperative complications, including hypoxia, hypotension, and nausea.

Conclusions: Remimazolam appears to provide faster induction and recovery and reduces the need for rescue sedation compared to midazolam in bronchoscopy. However, due to the limited number of included studies and observed heterogeneity, these findings should be interpreted with caution. Further high-quality randomized trials are required to confirm these



PalStudent Journal
A Palestinian Scientific Journal for the Youth



Key Words: Remimazolam, Bronchoscopy Procedural Sedation, Meta-analysis, Midazolam

PalStudent Journal

Correspondence concerning this article should be addressed to the mentioned authors at the mentioned institutes.

Copyright © 2026 Al-Quds University, Deanship of Scientific Research. All rights reserved.

E-mail: research@admin.alquds.edu

Palestine, Abu Dis, Al-Quds University