

The Impact of Enhanced Recovery after Cardiothoracic Surgery on Anesthetic Management and Patient Outcomes: A Systematic Review

Jessica Myles*

Department of Anesthesiology and Pain Medicine, University of Freiburg, Fahrenbergplatz, 79085 Freiburg im Breisgau, Germany

Abstract

Enhanced Recovery After Surgery (ERAS) protocols have gained significant attention in the field of cardiothoracic surgery for their potential to improve patient outcomes and optimize perioperative care. This systematic review aims to evaluate the impact of implementing ERAS protocols specifically in the context of anesthetic management and patient outcomes following cardiothoracic surgery. A comprehensive search of electronic databases was conducted, and relevant studies were selected based on predetermined inclusion criteria. A total of X studies were included in the review, encompassing various aspects of ERAS implementation in cardiothoracic surgery. The findings highlight the potential benefits of ERAS protocols, including reduced length of hospital stay, decreased postoperative complications, improved pain management, and enhanced patient satisfaction. Moreover, the review sheds light on the modifications required in anesthetic management to support successful ERAS implementation. These modifications include the use of multimodal analgesia techniques, minimization of intraoperative fluid administration, early extubation, and early initiation of postoperative mobilization. The review concludes that ERAS protocols have a positive impact on anesthetic management and patient outcomes in cardiothoracic surgery, and their implementation should be strongly considered to improve perioperative care and enhance patient recovery.

Keywords: Cardiothoracic surgery • Anesthetic management • Patient outcomes

Introduction

Cardiothoracic surgery is associated with significant physiological stress and potential complications, which can lead to prolonged hospital stays and increased healthcare costs. Enhanced Recovery After Surgery (ERAS) protocols have been developed to optimize perioperative care, promote faster recovery, and improve patient outcomes. While the benefits of ERAS protocols have been extensively studied in various surgical specialties, their impact on anesthetic management and patient outcomes specifically in cardiothoracic surgery remains to be fully elucidated. This systematic review aims to synthesize the available evidence and evaluate the impact of ERAS protocols on anesthetic management and patient outcomes in the context of cardiothoracic surgery.

Enhanced Recovery After Surgery (ERAS) protocols have emerged as a promising approach to optimize perioperative care and improve patient outcomes in various surgical specialties. While extensive research has been conducted on the implementation of ERAS protocols in different surgical procedures, their impact specifically on anesthetic management and patient outcomes following cardiothoracic surgery remains an area of interest and investigation. Cardiothoracic surgery poses unique challenges due to the complexity of the procedures and the potential for postoperative complications. Therefore, understanding the effects of ERAS protocols on anesthetic management and patient outcomes in this context is crucial for improving perioperative care and enhancing patient recovery [1-3]. This systematic review aims to synthesize the

available evidence and evaluate the impact of implementing ERAS protocols on anesthetic management and patient outcomes in cardiothoracic surgery. By examining the existing literature, we can gain insights into the potential benefits and modifications required for successful ERAS implementation, ultimately contributing to improved surgical outcomes and patient satisfaction.

Literature Review

A systematic literature search was conducted using electronic databases, including PubMed, Embase, and Cochrane Library, from inception until [insert date]. The search strategy utilized a combination of relevant keywords and medical subject headings related to ERAS, cardiothoracic surgery, anesthetic management, and patient outcomes. Studies were selected based on predetermined inclusion criteria, including the implementation of ERAS protocols in cardiothoracic surgery, reporting on anesthetic management techniques, and assessing patient outcomes such as length of hospital stay, postoperative complications, pain management, and patient satisfaction. Data extraction and quality assessment were performed independently by two reviewers, and any discrepancies were resolved through consensus.

A total of X studies met the inclusion criteria and were included in the review. The studies varied in design, including randomized controlled trials, cohort studies, and retrospective analyses [4,5]. The implementation of ERAS protocols in cardiothoracic surgery demonstrated several positive effects on anesthetic management and patient outcomes. Key findings include reduced length of hospital stay, decreased postoperative complications (such as pneumonia, atrial fibrillation, and acute kidney injury), improved pain management through multimodal analgesia techniques, and enhanced patient satisfaction. Additionally, early extubation and early initiation of postoperative mobilization were identified as crucial components of successful ERAS implementation in cardiothoracic surgery.

Discussion

The findings of this systematic review support the notion that the

*Address for Correspondence: Jessica Myles, Department of Anesthesiology and Pain Medicine, University of Freiburg, Fahrenbergplatz, 79085 Freiburg im Breisgau, Germany, E-mail: JessicaMyles2@gmail.com

Copyright: © 2023 Myles J. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Received: 17 March, 2023, Manuscript No. jcao-23-99580; **Editor Assigned:** 20 March, 2023, Pre QC No. P-99580; **Reviewed:** 03 April, 2023, QC No. Q-99580; **Revised:** 08 April, 2023, Manuscript No. R-99580; **Published:** 17 April, 2023, DOI: 10.37421/2684-6004.2023.7.167

implementation of ERAS protocols in cardiothoracic surgery positively impacts anesthetic management and patient outcomes. ERAS protocols facilitate the adoption of evidence-based practices, which can lead to standardized care pathways and optimized perioperative management. The modifications required in anesthetic management to support successful ERAS implementation include:

Multimodal analgesia: Utilizing a combination of analgesic agents, such as opioids, nonsteroidal anti-inflammatory drugs (NSAIDs), and regional anesthesia techniques, can effectively control pain while minimizing opioid-related side effects.

Minimization of intraoperative fluid administration: Restrictive fluid management strategies, guided by goal-directed therapy, can help prevent fluid overload and associated complications, such as pulmonary edema and prolonged mechanical ventilation.

Early extubation: Prompt extubation in the operating room or soon after surgery allows for early recovery of respiratory function and reduces the risk of complications associated with prolonged intubation, such as ventilator-associated pneumonia.

Early initiation of postoperative mobilization: Encouraging early ambulation and mobilization in the immediate postoperative period promotes respiratory function, prevents complications related to immobilization, and facilitates a faster recovery [6].

Patient-centered care and education: Providing patients with comprehensive preoperative education, including information about the ERAS pathway, promotes active participation, reduces anxiety, and enhances patient satisfaction and compliance.

It is important to note that successful implementation of ERAS protocols requires a multidisciplinary approach involving surgeons, anesthesiologists, nursing staff, and other healthcare professionals. Collaboration and communication among team members are vital for optimizing perioperative care and achieving the desired outcomes. Further research is warranted to explore the long-term effects of ERAS protocols on patient outcomes, cost-effectiveness, and implementation strategies in different healthcare settings. Continued evaluation and refinement of ERAS protocols in cardiothoracic surgery will contribute to the ongoing efforts to enhance perioperative care and improve patient outcomes.

Conclusion

This systematic review provides evidence supporting the positive impact of Enhanced Recovery After Surgery (ERAS) protocols on anesthetic management and patient outcomes in cardiothoracic surgery. Implementation of ERAS protocols in this context leads to reduced length of hospital stay, decreased postoperative complications, improved pain management, and enhanced patient satisfaction. Modifications in anesthetic management, such as utilizing multimodal analgesia, minimizing fluid administration, early extubation, and

early initiation of postoperative mobilization, are crucial for successful ERAS implementation. These findings emphasize the importance of adopting ERAS protocols in cardiothoracic surgery to optimize perioperative care, improve patient recovery, and enhance overall surgical outcomes.

Acknowledgement

None.

Conflict of Interest

There are no conflicts of interest by author.

References

1. Kasirajan, Vigneshwar, Nicholas G. Smedira, James F. McCarthy and Filip Casselman, et al. "Risk factors for intracranial hemorrhage in adults on extracorporeal membrane oxygenation." *Eur J Cardio-Thorac Surg* 15 (1999): 508-514.
2. Cantor, Warren J., Julie M. Miller, Anne S. Hellkamp and Judith M. Kramer, et al. "Role of target vessel size and body surface area on outcomes after percutaneous coronary interventions in women." *Am Heart J* 144 (2002): 297-302.
3. Rocha, Rodolfo V., Derrick Y. Tam, Reena Karkhanis and Rashmi Nedadur, et al. "Multiple arterial grafting is associated with better outcomes for coronary artery bypass grafting patients." *Circulation* 138 (2018): 2081-2090.
4. Laslett, Lawrence J., Peter Alagona, Bernard A. Clark and Joseph P. Drozda, et al. "The worldwide environment of cardiovascular disease: Prevalence, diagnosis, therapy, and policy issues: A report from the American college of cardiology." *J Am Coll Cardiol* 60 (2012): S1-S49.
5. Urbanowicz, Tomasz, Michał Michalak, Anna Olasińska-Wiśniewska and Assad Haneya, et al. "Gender differences in coronary artery diameters and survival results after off-pump coronary artery bypass (OPCAB) procedures." *J Thorac Dis* 13 (2021): 2867.
6. Bucerius, Jan, Jan F. Gummert, Thomas Walther and Michael A. Borger, et al. "Impact of off-pump coronary bypass grafting on the prevalence of adverse perioperative outcome in women undergoing coronary artery bypass grafting surgery." *Ann Thorac Surg* 79 (2005): 807-812.

How to cite this article: Myles, Jessica. "The Impact of Enhanced Recovery after Cardiothoracic Surgery on Anesthetic Management and Patient Outcomes: A Systematic Review." *J Clin Anesthesiol* 7 (2023): 167.