

Enhancing Recovery After Surgery (ERAS) Protocols: A Comprehensive Review of Anesthetic Contributions

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Introduction

Enhancing Recovery After Surgery (ERAS) protocols have revolutionized the field of perioperative care by focusing on optimizing various aspects of patient management to accelerate postoperative recovery. ERAS protocols encompass a multidisciplinary approach that involves preoperative, intraoperative, and postoperative strategies aimed at minimizing surgical stress, improving patient outcomes, and reducing the length of hospital stay. While ERAS protocols involve several components, this comprehensive review will specifically delve into the significant role of anesthetic contributions within the ERAS framework. ERAS protocols originated in the early 1990s as a response to the need for improving surgical outcomes and reducing the morbidity associated with traditional surgical practices. Dr. Henrik Kehlet played a pivotal role in pioneering ERAS concepts, emphasizing the importance of a holistic approach that extends beyond surgical techniques. ERAS protocols challenged conventional practices by incorporating evidence-based interventions that addressed preoperative, intraoperative, and postoperative phases [1-3].

Despite the proven benefits of ERAS protocols and the pivotal role of anesthetic contributions, implementation can face challenges. Resistance to change, lack of interdisciplinary collaboration, and variations in practice can hinder successful integration. Ongoing research continues to refine ERAS protocols and their anesthetic components. Personalized medicine, pharmacogenomics, and advances in perioperative monitoring hold promise in tailoring protocols to individual patient needs. Enhancing Recovery After Surgery (ERAS) protocols have emerged as a revolutionary approach to perioperative care, focusing on evidence-based strategies that optimize patient outcomes and accelerate recovery. Within this comprehensive framework, anesthetic contributions play a pivotal role in ensuring successful implementation and improved patient recovery. This discussion will delve deeper into the significance of anesthetic contributions within ERAS protocols and address challenges and potential future directions. Anesthetic techniques significantly influence postoperative pain management, a cornerstone of ERAS protocols. Regional anesthesia techniques, such as epidurals, peripheral nerve blocks, and TAP blocks, provide targeted pain relief and reduce the need for systemic opioids.

Description

Surgical stress triggers a cascade of physiological responses that can impede recovery. Anesthetic techniques play a crucial role in minimizing the

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Received: 03 March, 2023; **Manuscript No.:** japre-23-111705; **Editor Assigned:** 09 March, 2023; **PreQC No.:** P-111705; **Reviewed:** 17 March, 2023; **QC No.:** Q-111705; **Revised:** 29 March, 2023; **Manuscript No.:** R-111705; **Published:** 05 April, 2023; **DOI:** 10.37421/2684-5997.2023.6.171

stress response, thereby reducing the release of stress hormones such as cortisol and catecholamines. Techniques like neuraxial anesthesia and deep general anesthesia maintain patients in a balanced physiological state, preventing the harmful effects of excessive stress hormone release. This attenuation of the stress response contributes to improved wound healing, reduced inflammation, and overall enhanced recovery. These techniques not only enhance patient comfort but also facilitate early mobilization and reduce the risk of opioid-related adverse effects such as respiratory depression and ileus. Neuraxial anesthesia, including spinal and epidural anesthesia, not only offer effective intraoperative anesthesia but also contribute to postoperative pain control, allowing patients to actively participate in their recovery process. Adequate fluid management is critical for maintaining hemodynamic stability and preventing complications such as tissue edema and organ dysfunction. Anesthetic contributions to fluid management include goal-directed therapy, which utilizes dynamic parameters to guide fluid administration, preventing both hypo- and hypervolemia. Anesthesiologists closely monitor patients' fluid status and adjust fluid administration accordingly, contributing to improved perfusion and organ function. Avoiding crystalloid overload through judicious fluid administration is equally important, as excessive crystalloid use can lead to complications that compromise patient recovery [4,5].

Postoperative Nausea and Vomiting (PONV) are common concerns that can significantly affect patient satisfaction and recovery. Anesthetic contributions to PONV prevention involve the use of prophylactic antiemetics and a multimodal approach. Anesthesia providers choose anesthetic agents, such as propofol, that are associated with lower PONV rates. Additionally, combining multiple antiemetic medications with different mechanisms of action provides a more comprehensive approach to PONV prevention, reducing the incidence and severity of these distressing symptoms. While ERAS protocols and anesthetic contributions have demonstrated significant benefits, challenges persist in their widespread adoption. Resistance to change, lack of interdisciplinary collaboration, and variations in practice among healthcare providers can hinder the successful implementation of ERAS protocols. Overcoming these challenges requires a concerted effort from surgeons, anesthesiologists, nurses, and other team members to establish a cohesive approach to patient care.

The future of ERAS protocols and anesthetic contributions is promising. Advancements in personalized medicine and pharmacogenomics hold the potential to tailor ERAS protocols to individual patient characteristics, optimizing outcomes further. Integration of advanced perioperative monitoring techniques can provide real-time data that guide anesthesia providers in making informed decisions to enhance patient recovery. Furthermore, continued research into innovative pain management strategies, such as novel analgesics and neuromodulation techniques, can expand the arsenal of options for optimizing patient comfort and recovery.

Conclusion

Enhancing Recovery after Surgery protocols represent a holistic approach to perioperative care, aimed at improving patient outcomes and accelerating recovery. Anesthetic contributions are integral to the success of ERAS protocols, as they impact pain management, fluid balance, stress response, and more. The collaboration between anesthesiologists, surgeons, and other healthcare professionals is essential for effective implementation. As ERAS protocols continue to evolve based on research and clinical experience, the

integration of anesthetic contributions will remain crucial in shaping the future of perioperative care, ultimately leading to improved patient recovery and well-being.

Acknowledgement

None.

Conflict of Interest

None.

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How to cite this article: Drwell, George. "Enhancing Recovery After Surgery (ERAS) Protocols: A Comprehensive Review of Anesthetic Contributions." *J Anesth Pain Res* 6 (2023): 171.