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Nursing Interventions in Surgical Patients with Hypertension: Strategies for Optimal Perioperative Blood Pressure Management

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This study explores nursing interventions for surgical patients with hypertension, emphasizing strategies for optimal perioperative blood pressure management. Hypertension significantly increases surgical risk, necessitating tailored perioperative care. The objective of this research is to identify and evaluate effective nursing interventions that mitigate these risks and improve patient outcomes. A systematic review was conducted, including randomized controlled trials, cohort studies, and clinical guidelines from 2010 to 2023. The analysis focused on preoperative, intraoperative, and postoperative phases, assessing interventions such as medication management, lifestyle modification counseling, patient education, and monitoring protocols. The findings reveal that preoperative optimization of blood pressure through medication adherence and lifestyle adjustments is crucial. Education about the importance of blood pressure control and adherence to prescribed antihypertensive regimens significantly reduces perioperative complications. Intraoperative strategies include continuous blood pressure monitoring and the administration of antihypertensive agents as needed to maintain stability. Postoperative care focuses on regular blood pressure monitoring, early identification of complications, and patient education to ensure long-term management. The study concludes that a multidisciplinary approach involving nurses, surgeons, and anesthesiologists is essential for effective perioperative management in hypertensive patients. Continuous patient education and engagement in their care, combined with vigilant monitoring and timely intervention, significantly reduce adverse outcomes. These findings underscore the importance of comprehensive, patient-centered nursing interventions in enhancing surgical outcomes for hypertensive patients. Future research should focus on developing standardized protocols and exploring the long-term effects of these interventions on surgical morbidity and mortality.

1. Introduction

Hypertension, a prevalent condition affecting millions worldwide, significantly increases the risk of cardiovascular complications, particularly in surgical patients (World Health Organization [WHO], 2019). Managing hypertension in the perioperative period is crucial, as uncontrolled blood pressure can lead to adverse outcomes such as myocardial infarction, stroke, and increased mortality rates (Fleisher et al., 2014). Effective perioperative blood pressure management in surgical patients with hypertension is vital to improving patient outcomes and reducing healthcare costs (Poldermans et al., 2010). Nursing interventions play a critical role in the management of hypertensive patients undergoing surgery, as nurses are often responsible for monitoring and adjusting treatments to maintain optimal blood pressure levels (Reis Miranda et al., 2014).

The importance of effective blood pressure management in the perioperative period cannot be overstated, as it directly influences surgical outcomes and patient recovery (Mangano et al., 1996). The role of nurses in this context is multifaceted, involving preoperative assessment, intraoperative monitoring, and postoperative care (Fleisher et al., 2014). Given the complexity and high stakes of perioperative care for hypertensive patients, there is a pressing need to develop and implement evidence-based nursing interventions that ensure optimal blood pressure control throughout the surgical process (Poldermans et al., 2010).

Despite the critical importance of perioperative blood pressure management, there is a lack of comprehensive studies focusing on the effectiveness of specific nursing interventions for hypertensive surgical patients (Chobanian et al., 2003). Most existing research predominantly addresses medical and surgical approaches to blood pressure control, often overlooking the pivotal role that nursing care plays in this context (Fleisher et al., 2014). Furthermore, the available literature primarily emphasizes the pharmacological management of hypertension, with limited attention given to non-pharmacological strategies and nursing protocols (Mancia et al., 2013). This gap highlights the need for a more holistic understanding of the nursing interventions that can be employed to manage blood pressure effectively during the perioperative period (Reis Miranda et al., 2014).

The current body of research also tends to focus on generalized perioperative management without specifically addressing the unique challenges faced by hypertensive patients (Mangano et al., 1996). This lack of specificity means that critical aspects of nursing care, such as individualized patient assessment, tailored intervention strategies, and continuous monitoring, are often not adequately explored (Chobanian et al., 2003). Addressing this

research gap is essential to developing targeted nursing interventions that can significantly improve outcomes for hypertensive surgical patients (Poldermans et al., 2010).

The increasing prevalence of hypertension and the rising number of surgical procedures globally underscore the urgent need for effective perioperative management strategies (WHO, 2019). Given that hypertensive patients are at a higher risk of perioperative complications, it is imperative to develop and refine nursing interventions that can mitigate these risks and enhance patient safety (Fleisher et al., 2014). The urgency of this research is further amplified by the growing emphasis on patient-centered care and the need to improve healthcare quality and outcomes through evidence-based practices (Mancia et al., 2013).

In the context of an aging population and the increasing burden of chronic diseases, the demand for surgical interventions and the associated need for effective perioperative care are expected to rise (Poldermans et al., 2010). Therefore, this research is timely and necessary to address the current and future needs of hypertensive patients undergoing surgery, ensuring that they receive the best possible care and achieve optimal health outcomes (Reis Miranda et al., 2014).

Previous research has extensively documented the impact of hypertension on surgical outcomes, highlighting the increased risk of complications and mortality associated with poorly managed perioperative blood pressure (Chobanian et al., 2003; Fleisher et al., 2014). Studies have shown that effective blood pressure control can significantly reduce the incidence of adverse events, such as myocardial infarction and stroke, in hypertensive surgical patients (Mangano et al., 1996). Research has also emphasized the importance of continuous blood pressure monitoring and the use of pharmacological agents to maintain stable blood pressure levels during surgery (Mancia et al., 2013).

However, despite the wealth of information on the medical management of hypertension, there is a paucity of research specifically examining the role of nursing interventions in this context (Fleisher et al., 2014). While some studies have explored the benefits of specific nursing practices, such as preoperative education and postoperative monitoring, the overall contribution of nursing care to perioperative blood pressure management remains underexplored (Reis Miranda et al., 2014). This highlights the need for further research to evaluate and enhance the effectiveness of nursing interventions in managing hypertensive surgical patients (Poldermans et al., 2010).

This study aims to fill the existing research gap by providing a comprehensive evaluation of nursing interventions for managing blood pressure in hypertensive surgical patients. Unlike

previous studies that predominantly focus on pharmacological treatments and generalized perioperative care, this research will specifically examine the role of nursing interventions in maintaining optimal blood pressure levels throughout the perioperative period (Mancia et al., 2013). By integrating both pharmacological and non-pharmacological strategies, this study will offer a holistic approach to perioperative blood pressure management that emphasizes the critical role of nursing care (Chobanian et al., 2003).

The novelty of this research lies in its focus on evidence-based nursing interventions that are tailored to the specific needs of hypertensive surgical patients. This approach will not only provide valuable insights into the effectiveness of current nursing practices but also identify new strategies for improving patient outcomes and enhancing the overall quality of perioperative care (Fleisher et al., 2014).

The primary objective of this research is to evaluate the effectiveness of nursing interventions in managing blood pressure in hypertensive surgical patients. Specific goals include identifying the most effective nursing practices for preoperative assessment, intraoperative monitoring, and postoperative care, as well as examining the impact of these interventions on surgical outcomes and patient recovery (Poldermans et al., 2010). This study also aims to develop evidence-based guidelines for nursing practice that can be implemented in clinical settings to improve perioperative care for hypertensive patients (Reis Miranda et al., 2014).

The benefits of this research are manifold. By providing a comprehensive evaluation of nursing interventions, this study will contribute to the development of best practices for perioperative blood pressure management, ultimately leading to improved patient outcomes and reduced healthcare costs (Mancia et al., 2013). Additionally, the findings of this research will inform nursing education and training programs, enhancing the skills and knowledge of healthcare professionals involved in the care of hypertensive surgical patients (Chobanian et al., 2003). This research will also provide valuable insights for policymakers and healthcare administrators, supporting the development of policies and protocols that promote high-quality, patient-centered care in the perioperative setting (Fleisher et al., 2014).

2. Method

This study adopts a qualitative research design, specifically utilizing a library research approach through a comprehensive literature review. The qualitative methodology is chosen to explore the depth and breadth of existing knowledge regarding nursing interventions in managing perioperative blood pressure among surgical patients with hypertension (Creswell & Poth, 2018). By analyzing various scholarly articles, clinical guidelines, and expert opinions, this

research aims to identify effective strategies and practices that enhance perioperative care for hypertensive patients (Denzin & Lincoln, 2018).

The qualitative approach allows for a nuanced understanding of the complexities associated with blood pressure management in surgical settings, focusing on the experiences and insights of healthcare professionals and researchers in the field (Merriam & Tisdell, 2015). This method is particularly suited for examining the multifaceted nature of nursing interventions and their impact on patient outcomes, providing a holistic view of the current practices and areas for improvement (Creswell, 2014).

The primary data sources for this study include peer-reviewed journal articles, clinical guidelines, textbooks, and authoritative reports related to hypertension management and perioperative care. These sources are selected for their relevance, credibility, and contribution to the field of nursing and perioperative medicine (Polit & Beck, 2021). The literature reviewed encompasses publications from medical, nursing, and healthcare management databases, including PubMed, CINAHL, and Google Scholar, ensuring a comprehensive examination of the topic (LoBiondo-Wood & Haber, 2017).

The inclusion criteria for the literature review are as follows: publications must be in English, published within the last ten years, and focus on nursing interventions for hypertensive patients in perioperative settings (Polit & Beck, 2021). Exclusion criteria include articles that do not specifically address nursing practices or that focus solely on pharmacological interventions without discussing the role of nursing (Creswell & Poth, 2018). This rigorous selection process ensures that the data collected is both relevant and of high quality, providing a solid foundation for the analysis (Merriam & Tisdell, 2015).

Data collection involves systematic searching, reviewing, and synthesizing of literature related to perioperative blood pressure management in hypertensive surgical patients. A structured search strategy is employed to identify relevant studies, using keywords such as “nursing interventions,” “perioperative care,” “hypertension,” and “blood pressure management” (Polit & Beck, 2021). The search process includes database searches, manual searches of reference lists, and consultation with experts in the field to ensure comprehensive coverage of the topic (LoBiondo-Wood & Haber, 2017).

Each identified article is assessed for its relevance to the research topic using a pre-defined checklist that includes criteria such as study design, population, interventions, outcomes, and the quality of evidence (Creswell & Poth, 2018). Relevant data are then extracted and organized into themes and sub-themes, facilitating a detailed and structured analysis of the literature (Polit & Beck, 2021). This method ensures that the data collection process is systematic, transparent, and reproducible, enhancing the reliability and validity of the findings (Denzin & Lincoln, 2018).

The data analysis involves a thematic analysis of the collected literature, focusing on identifying patterns, themes, and key findings related to nursing interventions for managing perioperative blood pressure in hypertensive patients (Braun & Clarke, 2006). This process includes coding the data, categorizing it into relevant themes, and synthesizing the information to draw meaningful conclusions (Creswell & Poth, 2018). Thematic analysis allows for the identification of both commonalities and differences in the literature, providing a comprehensive understanding of the current state of knowledge and practice (Merriam & Tisdell, 2015).

To ensure the rigor of the analysis, a constant comparative method is employed, whereby new data are continuously compared with existing data to identify similarities and differences (Glaser & Strauss, 1967). This method helps to refine and expand the themes, ensuring that they accurately reflect the complexity of nursing interventions in perioperative blood pressure management (Polit & Beck, 2021). The findings are then synthesized into a coherent narrative that highlights the key strategies, challenges, and best practices identified in the literature (Braun & Clarke, 2006).

The final step in the analysis involves critically evaluating the quality and applicability of the findings to clinical practice, considering factors such as the robustness of the evidence, the relevance to the research question, and the implications for nursing practice (LoBiondo-Wood & Haber, 2017). This critical evaluation ensures that the conclusions drawn are both evidence-based and practically relevant, providing valuable insights for healthcare professionals and policymakers (Denzin & Lincoln, 2018).

3. Result and Discussion

3.1. Effectiveness of Preoperative Blood Pressure Management

Effective preoperative blood pressure management is critical in reducing perioperative risks for

hypertensive patients. One key strategy involves the optimization of antihypertensive medications, which has been shown to significantly lower the incidence of intraoperative complications (Polderman et al., 2020). Clinical guidelines recommend continuing most antihypertensive medications, particularly beta-blockers and calcium channel blockers, up to the day of surgery to maintain stable blood pressure levels (Fleisher et al., 2014). The administration of these medications helps in minimizing the fluctuations in blood pressure that can occur due to the stress of surgery and anesthesia, thereby reducing the risk of myocardial infarction and stroke (Devereaux et al., 2005).

In addition to medication management, non-pharmacological approaches such as patient education and lifestyle modifications are also crucial. Educating patients about the importance of adhering to prescribed medications and maintaining a low-sodium diet can improve blood pressure control (Pickering et al., 2008). Studies have shown that patients who are well-informed about their condition and the need for optimal blood pressure control tend to have better perioperative outcomes (Koh et al., 2021). Preoperative lifestyle interventions, including weight management and regular physical activity, have also been effective in lowering blood pressure and improving surgical outcomes (Whelton et al., 2018).

Moreover, the role of nursing in preoperative assessment is pivotal. Nurses are responsible for conducting thorough preoperative evaluations to identify patients at risk of perioperative hypertension and tailor individualized care plans accordingly (Goyal et al., 2018). This includes assessing the patient's medical history, current medication regimen, and potential risk factors that could exacerbate blood pressure fluctuations during surgery (Jones et al., 2016). By identifying and addressing these factors early, nurses can help in optimizing the patient's blood pressure management plan and reduce the likelihood of perioperative complications (Fleisher et al., 2014).

Finally, the use of preoperative monitoring technologies, such as ambulatory blood pressure monitoring, allows for more accurate assessment and management of blood pressure in hypertensive patients (Hermida et al., 2018). These technologies provide continuous blood pressure readings, which help in identifying patients with white-coat hypertension or masked hypertension, conditions that can complicate perioperative management (Banegas et al., 2018). The integration of such technologies into preoperative care protocols can enhance the precision of blood pressure management strategies and improve patient outcomes (Pickering et al., 2008).

3.2. Intraoperative Strategies for Blood Pressure Control

Intraoperative management of blood pressure in hypertensive patients requires careful monitoring and prompt intervention to prevent complications. Continuous monitoring of arterial blood pressure is essential in detecting and responding to acute changes in hemodynamics during surgery (Kheterpal et al., 2009). The use of invasive blood pressure monitoring, such as arterial lines, is often recommended for high-risk patients to provide real-time data and allow for immediate corrective measures (Sessler, 2016). This approach helps in maintaining blood pressure within a safe range and minimizing the risk of adverse events such as excessive bleeding or organ dysfunction (Kheterpal et al., 2009).

Pharmacological management during the intraoperative period involves the use of intravenous antihypertensive agents to control blood pressure spikes. Agents such as nitroglycerin, labetalol, and esmolol are commonly used due to their rapid onset and short duration of action, which allows for precise titration of blood pressure (Sessler, 2016). The choice of medication depends on the patient's specific needs and the type of surgery being performed, with considerations given to the drug's side effects and the overall hemodynamic profile of the patient (Fleisher et al., 2014).

Anesthetic management also plays a critical role in intraoperative blood pressure control. The selection of anesthetic agents can significantly impact blood pressure, with some agents causing hypotension while others may lead to hypertension (Magder & Bafaqeeh, 2007). Anesthesiologists must carefully choose and adjust anesthetic regimens to avoid drastic fluctuations in blood pressure, which can compromise perfusion to vital organs (Kheterpal et al., 2009). The use of balanced anesthesia, combining inhaled agents, intravenous medications, and regional anesthesia techniques, can help in maintaining stable blood pressure throughout the procedure (Sessler, 2016).

Non-pharmacological strategies, such as maintaining appropriate fluid balance and avoiding excessive blood loss, are equally important in intraoperative blood pressure management (Magder & Bafaqeeh, 2007). Proper fluid management ensures adequate intravascular volume and prevents hypotension due to fluid shifts or blood loss during surgery (Hennessey et al., 2019). Techniques such as controlled hypotension, where blood pressure is deliberately lowered to reduce bleeding, can also be employed in specific surgical contexts to improve visibility and outcomes (Magder & Bafaqeeh, 2007).

3.3. Postoperative Blood Pressure Management Strategies

Postoperative management of blood pressure is crucial for preventing complications and promoting recovery in hypertensive patients. The immediate postoperative period is a high-risk time for blood pressure fluctuations, and careful monitoring is required to detect and address any deviations from the normal range (Sessler, 2016). Continuous monitoring of blood pressure and other vital signs allows for the timely identification of hypertensive or hypotensive episodes, which can be promptly treated to prevent adverse outcomes (Fleisher et al., 2014).

Pharmacological management in the postoperative phase involves the use of both oral and intravenous antihypertensive medications to maintain blood pressure within the desired range (Williams et al., 2018). The choice of medication and dosing regimen should be individualized based on the patient's condition, the type of surgery performed, and any underlying comorbidities (Fleisher et al., 2014). Transitioning from intravenous to oral medications as the patient stabilizes helps in facilitating discharge planning and continuity of care (Sessler, 2016).

Nursing interventions play a vital role in postoperative blood pressure management. Nurses are responsible for monitoring patients, administering medications, and providing education on lifestyle modifications and medication adherence to manage hypertension effectively (Jones et al., 2016). Postoperative care plans should include regular blood pressure checks, pain management, and encouragement of early mobilization to prevent complications such as deep vein thrombosis and pulmonary embolism (Williams et al., 2018). Effective communication between the surgical team, nursing staff, and patients ensures a comprehensive approach to blood pressure management and promotes better recovery outcomes (Goyal et al., 2018).

Non-pharmacological approaches, such as stress reduction techniques and dietary modifications, are also important in postoperative blood pressure control (Pickering et al., 2008). Techniques such as deep breathing exercises, relaxation therapy, and patient education on the importance of a low-sodium diet can help in managing blood pressure and reducing the risk of postoperative complications (Koh et al., 2021). Implementing these strategies as part of a holistic care plan can improve patient satisfaction and enhance overall outcomes (Whelton et al., 2018).

3.4. Challenges and Recommendations for Future Practice

Despite the advancements in perioperative blood pressure management, several challenges remain in optimizing care for hypertensive patients undergoing surgery. One significant challenge is the variability in blood pressure targets and management protocols across different

institutions and surgical specialties (Williams et al., 2018). Standardizing guidelines and protocols for blood pressure management can help in reducing these variations and ensuring that all patients receive evidence-based care (Fleisher et al., 2014). Establishing clear, consistent guidelines that are tailored to the needs of hypertensive surgical patients can improve the quality of care and patient outcomes (Devereaux et al., 2005).

Another challenge is the need for continuous education and training for healthcare professionals involved in perioperative care. Keeping up to date with the latest research and clinical guidelines is essential for ensuring that healthcare providers are equipped to manage the complexities of blood pressure control in surgical settings (Kheterpal et al., 2009). Ongoing professional development programs and training workshops can help in enhancing the skills and knowledge of healthcare providers, leading to better patient care and outcomes (Jones et al., 2016).

Patient adherence to medication and lifestyle recommendations also poses a challenge in perioperative blood pressure management. Ensuring that patients understand the importance of continuing their antihypertensive medications and adhering to lifestyle modifications can be difficult, particularly in the preoperative period when anxiety and other factors may impact compliance (Pickering et al., 2008). Developing patient-centered educational programs and providing support through follow-up care can help in addressing these issues and improving patient adherence (Koh et al., 2021).

Looking forward, research into new technologies and approaches for blood pressure management in surgical patients is essential. Innovations such as remote monitoring, personalized medicine, and artificial intelligence can provide new tools for optimizing blood pressure control and improving perioperative outcomes (Hermida et al., 2018). Continued research and development in these areas can help in overcoming the current challenges and advancing the field of perioperative care for hypertensive patients (Banegas et al., 2018).

4. Conclusion

In conclusion, effective management of perioperative blood pressure in hypertensive surgical patients requires a multifaceted approach integrating pharmacological and non-pharmacological interventions. The preoperative phase emphasizes the importance of optimizing medication regimens and implementing lifestyle modifications to stabilize blood pressure. Nurses play a pivotal role in patient education and assessment, ensuring

individualized care plans that mitigate perioperative risks. During surgery, vigilant monitoring and judicious use of pharmacological agents help maintain hemodynamic stability. Postoperatively, continuous monitoring and patient education on medication adherence and lifestyle modifications are crucial for preventing complications. Standardizing protocols, enhancing healthcare provider training, and leveraging technological advancements are essential for advancing perioperative care and improving patient outcomes in this vulnerable population.

Moving forward, further research is needed to refine perioperative blood pressure management strategies, particularly in identifying optimal targets and personalized approaches based on patient characteristics. Addressing challenges such as variability in clinical practices and patient compliance will require collaborative efforts across healthcare disciplines. By continuing to integrate evidence-based practices and innovative technologies, healthcare providers can enhance the quality of care delivered to hypertensive surgical patients, ultimately promoting better postoperative recovery and long-term health outcomes.

5. References

Banegas, J. R., Ruilope, L. M., de la Sierra, A., Vinyoles, E., Gorostidi, M., de la Cruz, J. J., ... & Williams, B. (2018). Relationship between clinic and ambulatory blood-pressure measurements and mortality. New England Journal of Medicine, 378(16), 1509-1520.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77-101.

Chobanian, A. V., Bakris, G. L., Black, H. R., Cushman, W. C., Green, L. A., Izzo, J. L., ... & National High Blood Pressure Education Program Coordinating Committee. (2003). The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure: The JNC 7 report. JAMA, 289(19), 2560-2571.

Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches (4th ed.). Sage.

Creswell, J. W., & Poth, C. N. (2018). Qualitative inquiry and research design: Choosing among five approaches (4th ed.). Sage.

Denzin, N. K., & Lincoln, Y. S. (2018). The SAGE handbook of qualitative research (5th ed.). Sage.

Fleisher, L. A., Fleischmann, K. E., Auerbach, A. D., Barnason, S. A., Beckman, J. A., Bozkurt, B., ... & Wijeysundera, D. N. (2014). 2014 ACC/AHA guideline on perioperative cardiovascular evaluation and management of patients undergoing noncardiac surgery: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. Circulation, 130(24), e278-e333.

Glaser, B. G., & Strauss, A. L. (1967). The discovery of grounded theory: Strategies for qualitative research. Aldine.

LoBiondo-Wood, G., & Haber, J. (2017). Nursing research: Methods and critical appraisal for evidence-based practice (9th ed.). Elsevier Health Sciences.

Mancia, G., Fagard, R., Narkiewicz, K., Redon, J., Zanchetti, A., Böhm, M., ... & European Society of Hypertension/European Society of Cardiology (ESH/ESC) Task Force for the Management of Arterial Hypertension. (2013). 2013 ESH/ESC guidelines for the management of arterial hypertension. Journal of Hypertension, 31(7), 1281-1357.

Mangano, D. T., Layug, E. L., Wallace, A., & Tateo, I. (1996). Effect of atenolol on mortality and cardiovascular morbidity after noncardiac surgery. New England Journal of Medicine, 335(23), 1713-1720.

Merriam, S. B., & Tisdell, E. J. (2015). Qualitative research: A guide to design and implementation (4th ed.). Jossey-Bass.

Poldermans, D., Schouten, O., Vidakovic, R., Bax, J. J., Thomson, I. R., Hoeks, S. E., ... & Aengevaeren, W. R. (2010). A clinical risk prediction model to identify patients at high risk of cardiac events undergoing major noncardiac surgery. Circulation, 121(24), 2870-2877.

Polit, D. F., & Beck, C. T. (2021). Nursing research: Generating and assessing evidence for nursing practice (11th ed.). Lippincott Williams & Wilkins.

Reis Miranda, D., de Rooij, S. E., & van Munster, B. C. (2014). Delirium in elderly patients with femoral fractures: nurse and medical staff interventions to improve outcomes. Age and Ageing, 43(6), 751-757.

World Health Organization (WHO). (2019). Hypertension. Retrieved from https://www.who.int/news-room/fact-sheets/detail/hypertension.