

The Handling of Anti-aggregants and Anticoagulants in the Oncologic Heart Patient Submitted to Surgery

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Received date: April 30, 2024; Accepted date: May 21, 2024; Published date: July 16, 2024

Citation: Jardim Filho MFG, Amauri Bozi, Christiane K. Mantovi, (2024), The Handling of Anti-aggregants and Anticoagulants in the Oncologic Heart Patient Submitted to Surgery, *J Clinical Cardiology and Cardiovascular Interventions*, 7(7); DOI: [10.31579/2641-0419/378](https://doi.org/10.31579/2641-0419/378)

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Abstract:

Cardiovascular and cancer pathologies represent significant causes of global morbidity and mortality. This systematic review investigates the safety and effectiveness of maintaining anticoagulant therapy in cardiac patients undergoing oncological surgery. Conducted between 2018 and 2023 following PRISMA guidelines, the review includes 10 prospective studies detailing the impact of anticoagulant use in the surgical context. Among the 2345 patients analyzed, the majority were men, primarily using low molecular weight heparin and warfarin. The results indicate that continuing anticoagulants does not significantly increase bleeding risks or postoperative complications, while interruption may elevate the risk of thromboembolic events. It is concluded that the decision to continue or interrupt anticoagulant treatment should be personalized based on a careful evaluation of individual risk.

Key words: antiplatelet agents; anticoagulants; cardiopathies.

Introduction

Cardiovascular pathologies and cancer are two of the leading causes of morbidity and mortality globally (Ref. needed). Scientific literature suggests a correlation between these pathological states, with patients affected by cardiovascular diseases being more vulnerable to developing neoplasms and cancer patients exhibiting a higher risk of cardiovascular complications. Additionally, oncological therapeutic treatments, such as chemotherapy and radiotherapy, can have significant adverse effects on the cardiovascular system. Antiplatelet agents play a crucial role in preventing adverse outcomes in patients with pre-existing cardiovascular disease (CVD) as a secondary prevention strategy and as a primary prophylactic measure in those with a high estimated risk of developing such conditions.

The objective of this systematic review is to evaluate the safety and effectiveness of continuing anticoagulant use in cardiac patients undergoing oncological surgery.

Discussion:

A systematic literature review was conducted to evaluate the continuity of anticoagulant use in patients undergoing oncological surgery. The

electronic databases used were PubMed, Scopus, and Web of Science. The search was conducted in January 2023 and included studies published between 2018 and 2023. The search terms used were ("anticoagulants" OR "antithrombotic agents") AND ("abdominal neoplasms" OR "abdominal cancer" OR "gastrointestinal neoplasms" OR "gastrointestinal cancer") AND ("perioperative care" OR "surgery" OR "surgical procedures operative" OR "perioperative period"). Studies were included if they evaluated the continued use of anticoagulants in patients undergoing oncological surgery and reported data on intraoperative bleeding, postoperative complications, and thromboembolic events. Studies that did not report sufficient data or included patients with other serious medical conditions were excluded. Data collected from the studies included the number of patients, age, gender, type of anticoagulant used, duration of anticoagulant use, type of surgery performed, surgery duration, intraoperative blood loss, need for blood transfusion, length of hospital stay, and postoperative complications. The quality of the included studies was assessed using the Cochrane Collaboration's risk of bias assessment tool. The results were analyzed statistically using meta-analysis when appropriate. This study was conducted in accordance with the PRISMA guidelines (Preferred Reporting Items for Systematic Reviews and Meta-Analyses).

STUDY IDENTIFICATION	DESIRED PERIOD	ANTICOAGULANT	CARDIOPATHY	ONCOLOGY	SURGERY
1	YES	Low Molecular Weight Heparin (LMWH) and Warfarin	YES	YES	YES
2	YES	Low Molecular Weight Heparin (LMWH) and Warfarin	YES	YES	YES
3	YES	Low Molecular Weight Heparin (LMWH) and Unfractionated Heparin (UFH)	YES	NO	NO
4	YES	Low Molecular Weight Heparin (LMWH) or Heparin	YES	NO	YES
5	YES	Low Molecular Weight Heparin (LMWH) and Warfarin	NO	YES	YES
6	YES	YES	YES	YES	YES
7	YES	YES	YES	YES	YES
8	NO	NO	NO	NO	YES
9	YES	YES	YES	YES	YES
10	YES	YES	YES	YES	YES

Table 1: Revision Table the PRISMA method

The systematic review included 2,345 patients aged between 18 and 85 years, most of whom were men. The most commonly used anticoagulants were low molecular weight heparin (LMWH) and warfarin. The duration of anticoagulant use varied, with some studies indicating a brief pause before surgery and others maintaining continuous use during the perioperative period. The results showed that maintaining the use of anticoagulants did not significantly increase the risks of bleeding or complications after abdominal oncological surgery. However, there was an indication of an increased risk of thromboembolic events for patients who interrupted anticoagulant therapy before surgery. The statistical analysis did not identify significant differences in bleeding, postoperative complications, or thromboembolic events between the two groups of patients.

Conclusion

Although there are reports of increased risk in patients who discontinued anticoagulant use before surgery, the statistical analyses did not show significant differences in bleeding risks, intraoperative complications, postoperative complications, or thromboembolic events between the two groups. Given the importance of LMWH and warfarin in the prevention of thromboembolic events in cancer patients, discontinuing their use can elevate risks. The decision to continue or discontinue these anticoagulant medications must be made after an individual risk assessment and a discussion between the patient and the physician. Personalizing the treatment by considering the benefits and risks is crucial.

Conflict of Interest

The authors declare that there are no economic interests or any other conflicts of interest that may have influenced the results or the

conclusions presented in this work. This statement is based on the complete understanding of all parties involved in the study and the preparation of the manuscript, ensuring its transparency and academic integrity.

Abbreviations

CVD - Cardiovascular Disease

PRISMA - Preferred Reporting Items for Systematic Reviews and Meta-Analyses

LMWH - Low Molecular Weight Heparin

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DOI:10.31579/2641-0419/378

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