

Clinical Scenarios that Require Suspension of Antiplatelet Therapy in Patients with Ischemic Heart Disease

Vania Hailed Moreno Mora¹, Christian Alfonso Torres Bazán²

Servicio de Medicina Interna, Centro Médico Nacional de Occidente, Guadalajara, Jalisco, México.

ABSTRACT

Antiplatelet therapy is increasingly common, especially among patients with ischemic heart disease or atrial fibrillation. With the rising number of individuals undergoing anticoagulation treatment, often for conditions like atrial fibrillation, and the increased use of antiplatelet drugs for atherosclerotic disease prevention, the necessity for procedural interventions that require the suspension of these therapies has surged. The decision to interrupt antiplatelet treatment becomes crucial in such scenarios, balancing the risks of thrombotic events and bleeding complications. Implementing appropriate strategies demands a comprehensive understanding of the indications, associated complications, and optimal management of this therapeutic interruption. This review aims to consolidate current knowledge and guidelines, providing insights into the theoretical framework, indications for suspension, potential complications, and practical considerations in managing the suspension of antiplatelet therapy in clinical scenarios related to ischemic heart disease.

KEYWORDS: Antiplatelet therapy, Ischemic heart disease, Anticoagulation, Thrombotic risk, Bleeding complications

ARTICLE DETAILS

Published On:
21 November 2023

Available on:
<https://ijmscr.org/>

INTRODUCTION

The surge in the number of individuals undergoing anticoagulation, notably for atrial fibrillation, and the expanded utilization of antiplatelet drugs for secondary prevention in atherosclerotic disease have markedly increased the population requiring procedural interventions that necessitate the suspension of these therapies. It is estimated that over 800,000 patients are on anticoagulation, primarily due to atrial fibrillation. Simultaneously, the upsurge in antiplatelet usage is attributed to the higher rate of percutaneous coronary interventions (PCI) and stent implantations¹⁻³.

The chronic nature of these treatments anticipates that, during a patient's course of antithrombotic therapy, there will be a need for surgical or interventional procedures requiring their interruption. This is particularly critical with antiplatelet therapy as premature discontinuation is associated with an elevated risk of adverse cardiovascular events, including stent thrombosis. The decision to discontinue or maintain such treatment hinges on the delicate balance between the thrombotic and hemorrhagic risk⁴.

Despite published recommendations regarding the perioperative management of antithrombotic therapy, their

implementation in clinical practice remains scant. Existing guidelines often lack comprehensive involvement from all stakeholders in the perioperative process and may pertain only to specific fields or procedures, leaving room for gaps in their application. This discrepancy led to the collaboration of various medical societies, resulting in the creation of a practical consensus document. This work consolidates a set of recommendations aiming to streamline the management of antithrombotic drugs in these scenarios⁵.

The statistics indicate a growing need for refined guidelines and comprehensive recommendations to effectively manage the suspension of antiplatelet therapy in clinical scenarios related to ischemic heart disease⁵.

The suspension of antiplatelet therapy in patients with ischemic heart disease constitutes a deliberate temporary cessation of medications aimed at inhibiting platelet aggregation, commonly prescribed for secondary prevention of atherothrombotic events. This interruption is often necessitated by surgical or interventional procedures due to the heightened risk of bleeding complications while individuals are on antiplatelet therapy^{1-4, 6}.

CHA2DS2-VASc Score

Clinical Scenarios that Require Suspension of Antiplatelet Therapy in Patients with Ischemic Heart Disease

In patients with atrial fibrillation, the CHA₂DS₂-VASc score serves as a vital tool for assessing the risk of stroke and guiding anticoagulation strategies. However, in scenarios necessitating the suspension of antiplatelet therapy, especially in those also requiring anticoagulation, the evaluation extends beyond this score. A comprehensive assessment must weigh the individual's thrombotic and hemorrhagic risks to make an informed decision regarding therapy interruption ⁷.

Indications for Suspension

Neurosurgery: Neurosurgical procedures, particularly those involving the brain or spinal cord, often present a high risk of hemorrhagic complications. The necessity to maintain hemostasis in neurosurgical settings prompts the consideration for discontinuing antiplatelet therapy to minimize the risk of intracranial bleeding ⁸. However, the decision to suspend therapy should be carefully balanced with the potential risks of thrombotic events in this delicate setting.

Interventional Cardiology: Coronary interventions, especially percutaneous coronary interventions (PCI) or stent implantation, require a delicate balance between preventing stent thrombosis and minimizing bleeding complications. For instance, interrupting antiplatelet therapy before the recommended duration after stent placement elevates the risk of stent thrombosis. Conversely, continuing antiplatelet therapy during high-bleeding-risk procedures poses challenges due to the potential for hemorrhagic complications ⁹.

Gastrointestinal Procedures: Endoscopic procedures, particularly those involving high-risk bleeding sites, present challenges in managing antiplatelet therapy. Suspending antiplatelet therapy before these procedures aims to reduce the risk of bleeding; however, the duration and necessity for discontinuation should be meticulously evaluated to minimize the risk of thrombotic events ¹⁰.

Orthopedic Surgery: Joint replacement surgeries and other orthopedic procedures entail a balance between minimizing bleeding during surgery and reducing the risk of thrombotic events post-operatively. The decision to discontinue antiplatelet therapy is vital in preventing excessive perioperative bleeding while ensuring optimal thromboprophylaxis post-surgery ¹¹.

These diverse medical interventions underscore the intricate decision-making process involved in the suspension of antiplatelet therapy. Balancing the risk of bleeding against the risk of thrombotic events in various clinical scenarios necessitates meticulous assessment and a tailored approach for each patient and procedure ⁷⁻¹¹.

Complications

Suspending antiplatelet therapy poses a significant challenge due to the increased risk of thrombotic events. For instance, discontinuation in patients with coronary stents heightens the risk of stent thrombosis. Conversely, continuing antiplatelet therapy during high-bleeding risk procedures escalates the risk of bleeding complications. The delicate balance between

thrombotic and bleeding risks necessitates meticulous consideration in each clinical scenario ⁷⁻¹¹.

DISCUSSION

Balancing Thrombotic and Hemorrhagic Risks

The decision to suspend antiplatelet therapy in patients undergoing various medical interventions is intricately linked to the precarious balance between minimizing thrombotic risks and avoiding hemorrhagic complications. The challenge lies in meticulously assessing the risk factors for both bleeding and thrombosis in diverse clinical settings. For instance, in neurosurgical procedures, the requirement for maintaining hemostasis and reducing the risk of intracranial bleeding must be carefully weighed against the potential for thrombotic events during therapy interruption ^{1, 7-11}.

Procedure-Specific Considerations

Different medical interventions demand individualized approaches in managing antiplatelet therapy. In interventional cardiology, particularly in patients with coronary stents, balancing the risk of stent thrombosis against bleeding complications during procedure-related interruptions requires a nuanced decision-making process. Similarly, in gastrointestinal and orthopedic procedures, the delicate balance between preventing excessive bleeding and maintaining thromboprophylaxis is pivotal in determining the need and duration of therapy interruption ⁷⁻¹¹.

Implementing Evidence-Based Guidelines

While recommendations exist for managing the suspension of antiplatelet therapy, their translation into clinical practice often poses challenges. The gaps in uniform guidelines for specific interventions and evolving pharmacological treatments necessitate a constant reevaluation of best practices. The implementation of evidence-based guidelines in various clinical scenarios remains crucial to standardize practices and optimize patient outcomes ⁷⁻¹¹.

Individualized Patient Care

Each patient presents a unique risk profile and clinical scenario. Tailoring the approach to the suspension of antiplatelet therapy based on individualized risk assessments is paramount. The shared decision-making process involving the patient, the medical team, and specialized guidelines is fundamental in achieving a balance between thrombotic and bleeding risks while optimizing patient safety and care ⁷⁻¹¹.

CONCLUSION

In essence, the suspension of antiplatelet therapy in various clinical scenarios demands a delicate balance between mitigating thrombotic risks and minimizing bleeding complications. This nuanced decision-making process must involve a collaborative effort between patients and healthcare providers, considering individual patient profiles and specialized guidelines to ensure optimal patient care and safety.

Clinical Scenarios that Require Suspension of Antiplatelet Therapy in Patients with Ischemic Heart Disease

REFERENCES

- I. Martinez, K. A., Eckman, M. H., Pappas, M. A., & Rothberg, M. B. (2022). Prescribing of anticoagulation for atrial fibrillation in primary care. *Journal of Thrombosis and Thrombolysis*, 54(4), 616-624.
- II. Zhao, Y. J., Lin, L., Zhou, H. J., Tan, K. T., Chew, A. P., Foo, C. G., ... & Lim, W. S. (2016). Cost-effectiveness modelling of novel oral anticoagulants incorporating real-world elderly patients with atrial fibrillation. *International journal of cardiology*, 220, 794-801.
- III. Mezue, K., Obiagwu, C., John, J., Sharma, A., Yang, F., & Shani, J. (2017). Novel oral anticoagulants in atrial fibrillation: update on apixaban. *Current Cardiology Reviews*, 13(1), 41-46.
- IV. Piccolo, R., Feres, F., Abizaid, A., Gilard, M., Morice, M. C., Hong, M. K., ... & Valgimigli, M. (2017). Risk of early adverse events after clopidogrel discontinuation in patients undergoing short-term dual antiplatelet therapy: an individual participant data analysis. *JACC: Cardiovascular Interventions*, 10(16), 1621-1630.
- V. Gould, M. K., Garcia, D. A., Wren, S. M., Karanicolas, P. J., Arcelus, J. I., Heit, J. A., & Samama, C. M. (2012). Prevention of VTE in nonorthopedic surgical patients: antithrombotic therapy and prevention of thrombosis: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. *Chest*, 141(2), e227S-e277S.
- VI. Kim, H. S., Kang, J., Hwang, D., Han, J. K., Yang, H. M., Kang, H. J., ... & Park, K. W. (2020). Prasugrel-based de-escalation of dual antiplatelet therapy after percutaneous coronary intervention in patients with acute coronary syndrome (HOST-REDUCE-POLYTECH-ACS): an open-label, multicentre, non-inferiority randomised trial. *The Lancet*, 396(10257), 1079-1089.
- VII. Olesen, J. B., Torp-Pedersen, C., Hansen, M. L., & Lip, G. Y. (2012). The value of the CHA2DS2-VASc score for refining stroke risk stratification in patients with atrial fibrillation with a CHADS2 score 0–1: a nationwide cohort study. *Thrombosis and haemostasis*, 107(06), 1172-1179.
- VIII. Fugate, J. E. (2015). Complications of neurosurgery. *CONTINUUM: Lifelong Learning in Neurology*, 21(5), 1425-1444.
- IX. Galli, M., Laborante, R., Andreotti, F., Vergallo, R., Montone, R. A., Iaconelli, A., ... & D'Amario, D. (2022). Bleeding complications in patients undergoing percutaneous coronary intervention. *Reviews in Cardiovascular Medicine*, 23(8), 286.
- X. Veitch, A. M., Vanbiervliet, G., Gershlick, A. H., Boustiere, C., Baglin, T. P., Smith, L. A., ... & Dumonceau, J. M. (2016). Endoscopy in patients on antiplatelet or anticoagulant therapy, including direct oral anticoagulants: British Society of Gastroenterology (BSG) and European Society of Gastrointestinal Endoscopy (ESGE) guidelines. *Endoscopy*, 48(04), 385-402.
- XI. Kleiboer, B., Layer, M. A., Cafuir, L. A., Cuker, A., Escobar, M., Eyster, M. E., ... & Buckner, T. W. (2022). Postoperative bleeding complications in patients with hemophilia undergoing major orthopedic surgery: A prospective multicenter observational study. *Journal of thrombosis and haemostasis*, 20(4), 857-865.