

INFARTO AGUDO DO MIOCÁRDIO: UMA REVISÃO DA LITERATURA SOBRE OS AVANÇOS NO DIAGNÓSTICO E TRATAMENTO

ACUTE MYOCARDIAL INFARCTION: A LITERATURE REVIEW ON ADVANCES IN DIAGNOSIS AND TREATMENT

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RESUMO

O infarto agudo do miocárdio constitui uma importante emergência cardiovascular e uma das principais causas de morbimortalidade mundial, sendo caracterizado pela redução ou interrupção do fluxo sanguíneo para o coração, com consequente lesão do tecido miocárdico. Este estudo teve como objetivo analisar os avanços recentes no diagnóstico e tratamento do infarto agudo do miocárdio. Trata-se de uma revisão da literatura realizada por meio da base de dados PubMed, utilizando os descritores “acute myocardial infarction”, “diagnosis” e “treatment”, combinados pelo operador booleano AND, com seleção de dois artigos científicos de revisão publicados recentemente. Os resultados demonstraram que o diagnóstico precoce é fundamental para o início rápido do tratamento e para a redução da lesão miocárdica, destacando-se o uso de biomarcadores cardíacos e métodos diagnósticos. No tratamento, a reperfusão e a revascularização, principalmente por meio da intervenção coronária percutânea, mostraram-se estratégias fundamentais para restaurar o fluxo sanguíneo e limitar o dano cardíaco. Além disso, a terapia farmacológica apresenta papel importante quando associada às estratégias de revascularização, enquanto novas abordagens terapêuticas permanecem em investigação. Conclui-se que os avanços no diagnóstico e tratamento do infarto agudo do miocárdio têm contribuído para melhorar o manejo dos pacientes, embora o reconhecimento precoce e a instituição imediata do tratamento adequado permaneçam essenciais para melhores desfechos clínicos.

Palavras-chave: Infarto do Miocárdio. Diagnóstico. Tratamento. Revascularização. Biomarcadores.

ABSTRACT

Acute myocardial infarction is an important cardiovascular emergency and one of the leading causes of morbidity and mortality worldwide, being characterized by a reduction or interruption of blood flow to the heart, resulting in myocardial tissue injury. This study aimed to analyze recent advances in the diagnosis and treatment of acute

myocardial infarction. This is a literature review conducted through the PubMed database, using the descriptors “acute myocardial infarction,” “diagnosis,” and “treatment,” combined with the Boolean operator AND, with the selection of two recently published scientific review articles. The results demonstrated that early diagnosis is essential for the rapid initiation of treatment and for reducing myocardial injury, with emphasis on the use of cardiac biomarkers and diagnostic methods. Regarding treatment, reperfusion and revascularization, mainly through percutaneous coronary intervention, proved to be fundamental strategies for restoring blood flow and limiting cardiac damage. In addition, pharmacological therapy plays an important role when associated with revascularization strategies, while new therapeutic approaches remain under investigation. It is concluded that advances in the diagnosis and treatment of acute myocardial infarction have contributed to improving patient management, although early recognition and the immediate initiation of appropriate treatment remain essential for better clinical outcomes.

Keywords: Myocardial Infarction. Diagnosis. Treatment. Revascularization. Biomarkers.

INTRODUCTION

Acute myocardial infarction (AMI) is a major cardiovascular emergency and one of the leading cause of morbidity and mortality worldwide. This disease, occurs when the blood flow to the heart is reduced or interrupted, resulting in myocardial injury. Early diagnosis and treatment are essential to minimize cardiac damage and the risk of complications.¹

Both diagnosis and treatment of AMI have improved in recent years due to advances in cardiac biomarkers, diagnostic methods, revascularization techniques, and pharmacological therapies. Percutaneous coronary intervention is a key treatment strategy, as it helps to restore coronary blood flow and limit myocardial damage. ^{1 2} These advances are both scientifically and socially significant, as improved management of AMI can lead to better patient outcomes.

Despite these advances, the diagnosis and treatment of AMI still presents challenges, particularly when it comes to rapid identification and appropriate management. New diagnostic and therapeutic strategies continue to be investigated, highlighting the need of up-to-date knowledge on the management of this condition. ^{1,2} Therefore, a review of recent evidence can contribute to a better understanding of current approaches to AMI.

Thus, this study aims to analyze recent advances in the diagnosis and treatment of acute myocardial infarction based in a review of two scientific articles indexed in the PubMed database: Recent Advances in The Diagnosis and Management of Acute Myocardial Infarction and Treatment Strategies of Acute Myocardial Infarction: Updates on Revascularization, Pharmacological Therapy, and Beyond.

METHODS

This study is a literature review based on the following question: “What are the recent advances in the diagnosis and treatment of acute myocardial infarction?”. An investigation of scientific articles was conducted in August 2026 using the PubMed database. The descriptors used were “acute myocardial infarction,” “diagnosis,” and “treatment,” combined using the Boolean operator “AND.” The research focused on scientific studies published in recent years, resulting in the selection of two review articles for analysis. Diagnosis, management, and new therapeutic approaches for acute myocardial infarction were analyzed based on the review by Hsieh et al. (2023). Strategies regarding revascularization, reperfusion, and pharmacological therapy were incorporated using the review by Saito et al. (2023). Combined, these articles served as the primary basis for the discussion of current advances in the diagnosis and treatment of acute myocardial infarction.

RESULTS

Studies show that early diagnosis is essential for initiating treatment as quickly as possible and minimizing heart muscle damage during acute myocardial infarction (AMI). The use of cardiac biomarkers has become a crucial part of the diagnostic process, assisting in the identification of myocardial injury and the clinical assessment of patients with suspected AMI.¹

Regarding treatment, studies emphasize the importance of restoring coronary blood flow as quickly as possible. Revascularization—primarily via percutaneous coronary intervention (PCI)—is a key strategy for AMI patients. This approach aims to restore blood flow to the affected area of the heart and limit the extent of myocardial injury.^{1,2}

Pharmacological therapy also plays a significant role in AMI treatment. The second study highlights that the appropriate use of medications, combined with revascularization strategies, contributes to better clinical outcomes. Treatment choices may vary based on the patient's clinical condition and the characteristics of the ischemic necrosis, making it important to evaluate each patient individually. ²

The articles also present new therapeutic approaches currently under investigation to improve AMI treatment. These approaches include therapies aimed at reducing myocardial injury and enhancing cardiac tissue recovery. Although some of these approaches seem promising, further studies are required to confirm their efficiency and define their role in clinical practice.¹

Overall, findings from both studies indicate that AMI treatment has advanced through the development of diagnostic methods, reperfusion and revascularization strategies, and pharmacological therapies. Nevertheless, despite these developments, early recognition and the immediate initiation of appropriate treatment remain essential factors in patient care.^{1,2}

CONCLUSION

The analysis of the selected studies demonstrated that advances in the diagnosis and treatment of acute myocardial infarction (AMI) have contributed to improving patient management. Early diagnosis, reperfusion, revascularization, and pharmacological therapy are important strategies for reducing myocardial injury and improving clinical outcomes. This review also highlights the development of new diagnostic methods and therapeutic approaches that may contribute to enhance the care of patients with AMI.

In clinical practice, these findings reinforce the importance of a quick diagnosis and appropriate treatment for patients with AMI. However, some new therapeutic strategies still require further investigation to confirm their efficiency and safety. In this case, future studies may contribute to the development of more effective treatments, as well as improvements in prognosis and in the quality of care provided to patients with acute myocardial infarction.

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