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Post-myocardial infarction pericarditis: Dressler's syndrome and its clinical implications

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ABSTRACT

Dressler's syndrome, a rare complication after myocardial infarction or heart surgery, is characterized by a triad of fever, chest pain, and pericardial effusion. Caused by an autoimmune response to heart damage, the syndrome can lead to serious complications such as cardiac tamponade and constrictive pericarditis. The diagnosis is made through clinical findings, laboratory and imaging tests, and treatment involves anti-inflammatories, corticosteroids and, when necessary, pericardial drainage. Early detection and proper management are crucial to prevent complications and improve the prognosis of patients.

Keywords: Pericarditis, Cardiovascular Physiological Phenomena, Heart Diseases.

INTRODUCTION

The pericardium is a double-layered fibroserous membrane that surrounds the heart. The thickening and inflammation of this membrane is called pericarditis, which accounts for 5% of chest pain presentations in the emergency department (Braz *et al*., 2023).

Dressler's Syndrome, also known as post-myocardial infarction syndrome, is a rare but potentially serious complication that occurs after myocardial infarction (MI) or heart surgery. It is characterized by pericarditis, pleuritis, and fever, typically presenting weeks to months after the initial event (López *et al*., 2024). First identified by William Dressler in 1956, this syndrome is characterized by a triad of fever, chest pain, and pericardial effusion. The pathogenesis is thought to involve an autoimmune response triggered by myocardial damage, leading to inflammatory state in the pericardial region (Kristopher, Raney, Anas., 2022; Cotton, Sweeting., 2023).

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Although the incidence has decreased with advances in infarct therapeutics, Dressler's Syndrome remains a clinical challenge due to its varied presentation and potential for serious complications such as cardiac tamponade (CT) and constrictive pericarditis (Aten, Raney, Alomar., 2022).

The objective of this study is to comprehensively explore Dressler's Syndrome, highlighting its etiopathogenic mechanisms and clinical manifestations, as well as diagnostic methods, therapeutic approaches and prognosis. It seeks to provide a detailed and up-to-date view of the condition, helping to improve clinical management and early identification of patients at risk.

MATERIALS AND METHODS

To achieve this objective, a detailed literature review was carried out in several renowned databases, including *SciELO, PubMed, Google Scholar* and Virtual Health Library. The descriptors used included terms in Portuguese, English and Spanish related to CMPP, such as "Pericarditis", "Cardiovascular Physiological Phenomena" and "Heart Diseases".

The selection of articles considered studies from the last 4 years, systematic reviews and meta-analyses relevant to the understanding of the complications associated with Dressler's Syndrome. After a careful analysis, 10 articles that most contributed to the specific objectives of this investigation were selected.

RESULTS

Post-cardiac injury syndrome, including Dressler's Syndrome, encompasses a complex inflammatory response triggered by damage to cardiac tissue (O'regan, O'sullivan., 2022; Aten, Raney, Alomar., 2022). It is postulated that after an AMI or cardiac intervention, the release of cardiac antigens or the formation of immune complexes occurs. In genetically predisposed individuals, this can trigger an autoimmune response mediated by autoantibodies, contributing to inflammation of the pericardium and pleura. (López et al., 2024; Kristopher, Raney, Anas., 2022) The subsequent inflammatory cascade can lead to the pericarditis and pleuritis characteristic of the syndrome, complicating the clinical picture and therapeutic management of the patient (Martínez-Ávila *et al*., 2023; Bernal-Macías *et al*., 2021; Cotton, Sweeting., 2023).

The clinical manifestations of Dressler's Syndrome are varied and challenging, often presenting with nonspecific symptoms such as fever, asthenia, adynamia, arthralgia, and dyspnea. The classic triad of chest pain, fever, and pericardial effusion may be present, in addition to signs of systemic inflammation such as tachycardia and elevated temperature (Karim *et al*., 2023). More severe signs include CT, manifested by pulsus paradoxus, and constrictive pericarditis, which can lead to complications such as

right heart failure due to limited diastolic filling (Martínez-Ávila *et al*., 2023; López *et al*., 2024; Kristopher, Raney, Anas., 2022).

The diagnosis of Dressler's Syndrome is based on a combination of clinical findings, laboratory tests such as elevated CRP (C-Reactive Protein) and ESR (Erythrocyte Sedimentation Rate), and imaging tests such as echocardiogram to identify pericardial effusion. Treatment involves the use of nonsteroidal anti-inflammatory drugs (NSAIDs) to control inflammation, corticosteroids in refractory cases, and pericardial drainage in cardiac tamponade situations. The prognosis is generally good with appropriate treatment, although severe cases may progress to chronic complications such as constrictive pericarditis, requiring long-term monitoring to prevent recurrences and cardiac sequelae (Martínez-Ávila *et al*., 2023; Bernal-Macías *et al*., 2021; Connaire *et al*., 2021).

FINAL CONSIDERATIONS

Dressler's syndrome continues to be an important complication of myocardial infarction, requiring attention and specialized knowledge for its diagnosis and management. Although therapeutic advances have reduced its incidence, the autoimmune inflammatory response that characterizes the condition can still lead to severe complications if not treated properly.

This review highlights the importance of early detection, the efficacy of anti-inflammatory therapies, and the need for continuous surveillance in post-infarction patients. Additional studies are essential to improve treatment and prevention strategies, ensuring a better quality of life for affected patients.

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