2025 Essential Messages from ESC Guidelines

Clinical Practice Guidelines Committee

Guidelines for the management of
Myocarditis and pericarditis

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Essential Messages

2025 ESC Guidelines for the management of myocarditis and pericarditis

Developed by the task force for the management of myocarditis and pericarditis of the European Society of Cardiology (ESC). Endorsed by the Association for European Paediatric and Congenital Cardiology (AEPC) and the European Association for Cardio-Thoracic Surgery (EACTS).

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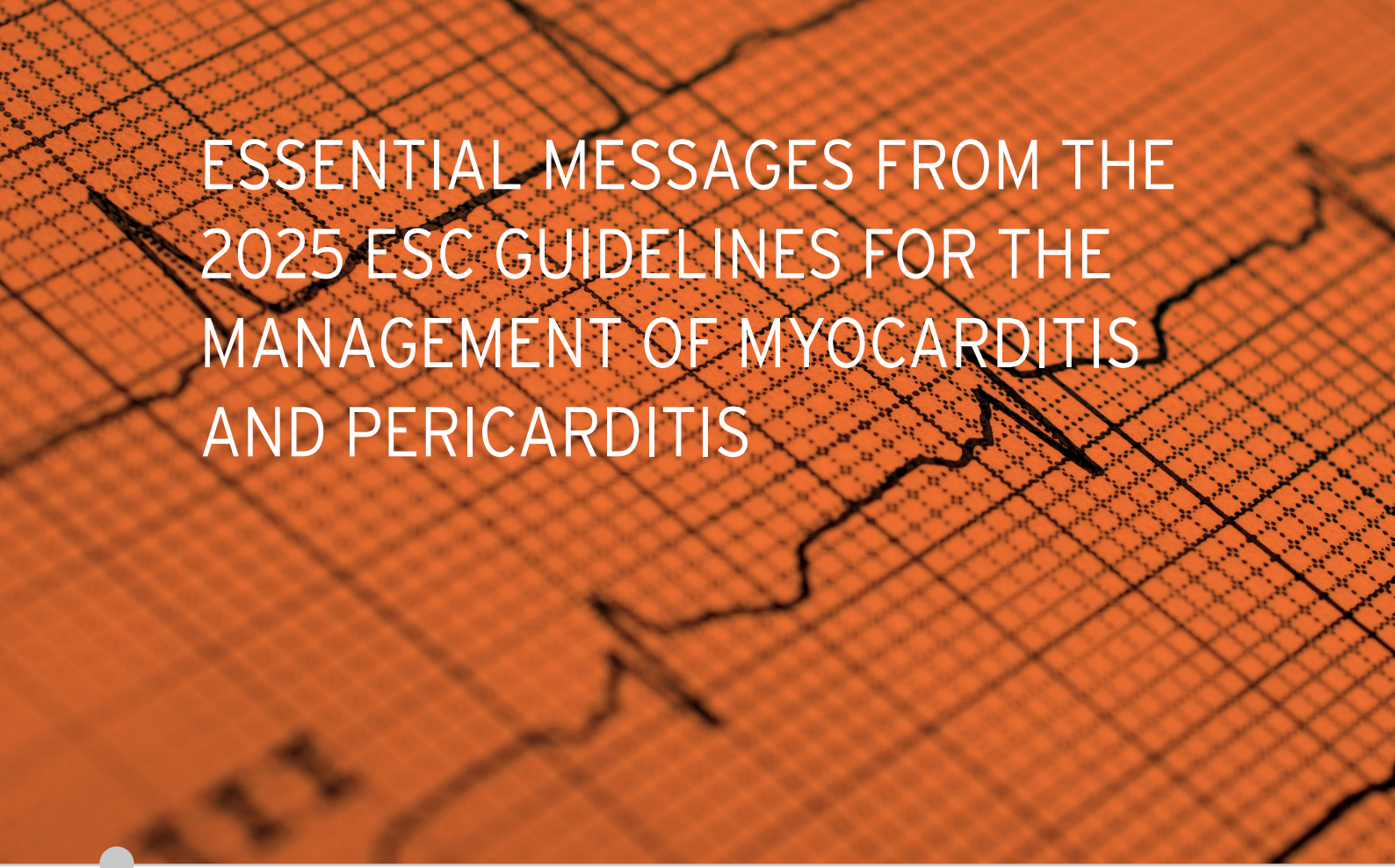
Councils: Council for Cardiology Practice, Council of Cardio-Oncology, Council on Basic Cardiovascular Science.

Working Groups: Cardiovascular Pharmacotherapy, Cardiovascular Surgery, Myocardial & Pericardial Diseases, Pulmonary Circulation & Right Ventricular Function.

Patient Forum

Adapted from the 2025 ESC Guidelines for the management of myocarditis and pericarditis (European Heart Journal – doi:10.1093/eurheartj/ehaf192) published on 29 August 2025.



ESSENTIAL MESSAGES FROM THE 2025 ESC GUIDELINES FOR THE MANAGEMENT OF MYOCARDITIS AND PERICARDITIS

Table of contents

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Key messages

The recognition of the whole spectrum of IMPS is increasing within the medical community. This is based on a deeper understanding leading to a more systematic evaluation, as well as more data being generated by prospective trials. Although these entities have been explored for some time, the COVID-19 pandemic was the main trigger to increase the awareness on the spectrum of disease. Advanced multimodality imaging technologies, including CMR, allow a patient-tailored diagnostic and therapeutic approach. A major diagnostic paradigm change is the capability of reaching a clinical diagnosis of certainty by non-invasive multimodality imaging (CMR for myocarditis), while EMB remains important in selected intermediate- and high-risk cases, if a targeted specific therapy, based on specific histotypes or aetiologies, is needed.

Aetiology

Inflammatory myopericardial syndrome is a spectrum of inflammatory diseases with some common aetiologies, either infectious or non-infectious, that can affect either the myocardium (myocarditis) or pericardium (pericarditis) in isolated forms, or combined (myopericarditis and perimyocarditis).

Clinical presentation and diagnosis

In a large percentage of cases, myocarditis and pericarditis have a chest pain presentation, and generally preserved biventricular function with good outcomes. For myocarditis, complicated forms include those presenting with severe HF and arrhythmias. Nevertheless, uncomplicated presentations may also develop life-threatening complications, albeit less commonly, and therefore also may need fast management. For pericarditis, complicated cases include those with an incessant or recurrent course. Many cases with persistent symptoms may show constrictive physiology, which can be reversible after appropriate medical therapy. The diagnosis of non-high-risk cases is based on clinical evaluation, including ECG and biomarkers, with non-invasive confirmation of the clinical suspicion by evidence of inflammatory involvement using multimodality imaging (mainly echocardiography and CMR). Endomyocardial biopsy is recommended for intermediate- and high-risk cases on a case-by-case decision, only when results are expected to change management.

Therapy

The treatment of uncomplicated IMPS is empirical, aiming at the control of symptoms and prevention of complications. Anti-inflammatory drugs and colchicine are useful to control chest pain, while additional therapies should be guideline-directed for specific complicated courses. If a specific aetiology is identified, treatment should be targeted at the specific cause. In all cases of IMPS, restriction of physical activity is recommended in the acute phase, while return to work and physical activity should be individualized according to clinical remission times.

Prognosis and outcomes

The prognosis of IMPS varies. Most patients presenting with chest pain have a favourable outcome, although recurrences, especially for pericarditis, may severely affect the quality of life of patients and require long-term follow-up. For complicated cases of myocarditis with HF and arrhythmias, a tailored and individualized approach is warranted. Such patients require long-term follow-up, usually lifetime monitoring.

Multidisciplinary team

Management of patients with IMPS should usually be guided by a multidisciplinary team, which should be tailored to the specific patient. This team should be composed of different clinicians, all with expertise in cardiovascular diseases (e.g. imaging experts, a pathologist, a rheumatologist, an infectious disease specialist, a geneticist, interventional cardiologists, intensive care specialists, and surgeons). It is of paramount importance that physicians develop competence and skills either in myocarditis or pericarditis to allow timely diagnosis and therapy for patients, because mixed forms are common in clinical practice.

Gaps in evidence

The field of IMPS has significant knowledge gaps across all aspects, from pathogenesis to therapy. However, growing awareness has led to numerous ongoing studies. Advances in multimodality imaging have enabled a more comprehensive and non-invasive understanding of disease progression, opening the way to patient-tailored approaches. Despite these advancements, large-scale prospective multicentre trials with predefined outcome measures are lacking. These uncertainties are especially pronounced in chronic conditions, as well as in specific patient groups, such as children, women of childbearing age, during pregnancy, lactating women, and in the elderly.

A further challenge is the handling of the return to work and physical activity as there is a need for a patient-specific approach, taking into consideration the individual risk. Lessons learned from other diseases should lead to less restrictive guidance in comparison with previous advice.

Myocarditis

Knowledge about myocarditis has evolved during recent years, as the different mechanisms are better understood. Several causes, such as viral and toxic ones, including chemotherapy, as well as systemic disorders, have been investigated, and targeted therapeutic approaches were proposed. However, further research into specific therapy is needed based on advanced diagnostic approaches.

Nevertheless, a specific challenge for myocarditis is related to the low frequency of complications and the high rate of spontaneous remission. On this basis, clinical trials on medical therapy for myocarditis might be currently underpowered to assess the clinical benefit of a specific treatment with small sample sizes. In addition, many antiviral therapies are off-label for myocarditis and controlled trials are missing.

Currently, quantitative immunohistochemistry criteria for the diagnosis of LM are under discussion among cardio-pathologists to present more definite criteria for EMB.

Furthermore, a better understanding of the pathogenic and prognostic role of viral loads is needed (e.g. active/causative vs latent/innocent bystanders in cardiac viral infections).

Moreover, the role of genetic predisposition in recurrent myocarditis is not thoroughly clarified. Research into the role of genetic predisposition is evolving to change the classification of disease and may influence therapeutic pathways in the future. An increase of ‘overlapping’ conditions, especially DCM and ARVC, can be expected and may change our understanding of the disease in the future.

That means, more research is warranted on the prognosis and SCD risk stratification.

Pericarditis

There are significant knowledge gaps in individualized treatment and pathogenesis of various types of pericarditis, as well as the understanding of the interaction among genetic background, inflammation, and autoimmune mechanisms. Better knowledge of the pathogenesis of recurrences may also help to develop more targeted and individualized therapies.

The genetic background requires further evaluation in complicated, recurrent cases and could be helpful to elucidate the mechanisms leading to incessant/recurrent forms. New therapeutic options should also be considered and evaluated in clinical trials to explore new drugs for more complicated, incessant, or recurrent cases to develop a more individualized and efficacious approach for the treatment of pericarditis.

A significant management issue is the treatment of patients not responding to colchicine and anti-IL-1 agents, as well as the causes of drug dependence to maintain stable clinical remission, such as for corticosteroids and anti-IL-1 agents.

Additional research is also warranted to understand the prognostic significance of persistent LGE of the pericardium.

There are limited data to support the best timing of return to work and physical activity, and further research is needed on this topic with appropriate clinical trials or observational studies.

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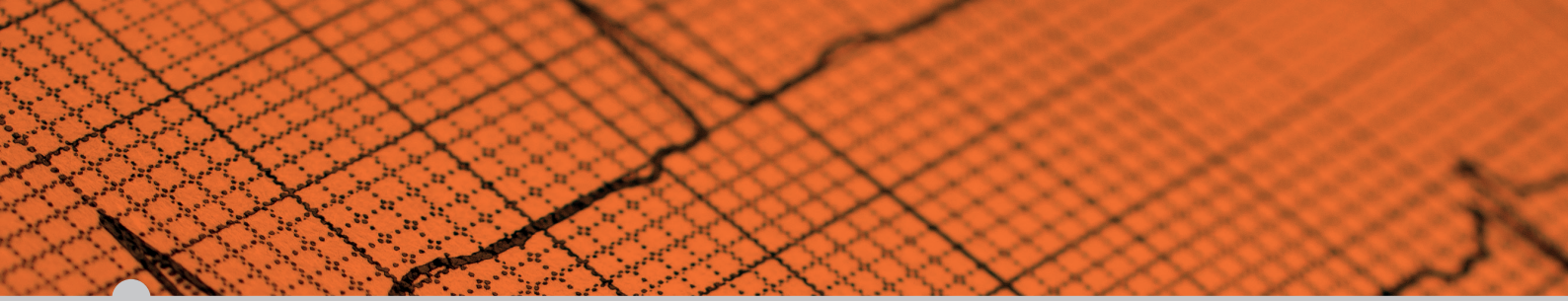

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Post-publication corrections and updates are available at: www.escardio.org/guidelines

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