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Diagnostic and Evolving Echocardiographic Markers of Acute Myocarditis

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Cardiovascular magnetic resonance (CMR) has become a valuable diagnostic tool for non-invasive diagnosis of acute myocarditis. However, since CMR studies are time- and cost-intensive. Echocardiography remains a key examination. With this technique, it is possible to analyze inflammation, edema and necrosis in addition to functional parameters such as left ventricular function, movement of the regional wall and dimensions. New cardiographic echo modalities are currently showing promising features.

Methods : This is a prospective, monocentric, observational study to assess diagnostic and progressive echocardiographic markers of acute myocarditis and their correlation to cardiac MRI results. 30 cases of myocarditis were included, we evaluated on echocardiography: initial FEVG, LVTDV, presence of pericardial effusion, number of zones with segmental impairment of contractility, Global longitudinal strain (SGL) and RV function. These parameters were recorded at 48 hours, one month, 6 months and 1 year from the acute phase. Cardiac MRI was performed within 72 hours to a week of the acute phase.

Results : Sex ratio: 1, average age: 35 years (20 - 72 years). Chest pain was the most common reason for consultation. 13 out of 30 patients presented with an acute heart failure table including cardiogenic shock. The ECG, markers of myocardial inflammation and necrosis were pathological in all patients. Low LVEF with high filling pressures in 08 patients, minimal pericardial effusion (2 cases) and altered SGL in all patients. The cardiac MRI confirmed the echocardiographic diagnosis of myocarditis. Coronary angiography was performed urgently in all patients. The infectious etiology including viral was retained in the majority of our patients. Diuretics, ACE inhibitors and a beta blocker have been administered in patients with hemodynamically stable heart failure. The clinical course was favorable in all patients. Short and medium term echocardiographic surveillance (1, 3, 6 months and a year) has shown an improvement in the LVEF; filling pressures and SGL correction in all patients.

Conclusion: The traditional diagnostic tools for myocarditis are ECG and troponins. In recent years, the use of echocardiography with new parameters has been developed with a possibility of structural and functional analysis allowing a diagnostic, prognostic and monitoring approach very close to cardiac MRI.

Biography

Approximation of the incidence of myocarditis by systematic screening with cardiac magnetic resonance imaging. J Am Coll Cardiol HF 6:573–579

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