
Extended abstract

Cardiac magnetic resonance and cardiac computed tomography in the daily work up of patients with acute heart failure and acute chest pain syndromes

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Background: Acute chest pain and acute heart failure syndromes are the two most frequent causes of admission to acute cardiac care units. In the recently published ESC guidelines for the management of NSTEMI and the management of acute and chronic heart failure both CT and MRI are acknowledged as IA/IIB indications for the work up of these patients. We propose a systematic workflow based on symptoms at presentation, clinical risk calculations and invasive strategy, which integrates cardiac MRI and CT.

Methods: Patients are stratified according to a decision tree based workflow. The 1st step differentiates chest pain and acute heart failure patients. Chest Pain patients are then further stratified according to ESC guideline defined risk factors and grace score results. Patients in the low risk category with low to intermediate pretest probability are then referred for coronary CTA and triple rule out, patients in all other categories are followed up invasively. If patients are troponin positive and have rule out of CAD, they are referred for cardiac MRI to diagnose acute myocarditis or tako tsubo cardiomyopathy. If patients are admitted for acute heart failure symptoms and the etiology of reduced left ventricular function remains unclear they are put on optimal medical treatment until stable enough for invasive angiography, if ischemic cardiomyopathy is ruled out, all patients undergo cardiac magnetic resonance to differentiate acute myocarditis from chronic dilated cardiomyopathy.

Discussion: By adherence to the above described workflow a large number of patients with acute myocarditis could be detected, despite normal ECG, echo and CRP. Specific therapy for viral myocarditis is still under debate, however early detection of myocardial inflammation might in future improve the patients outcome. Furthermore in the cohort of patients with low risk of myocardial damage triple rule out algorithms speed up the diagnostic process and therefore are cost effective and resource saving. Prospective studies of these algorithms are warranted to confirm our first experience.

KEYWORDS: cardiovascular magnetic resonance imaging, cardiac computed tomography, myocarditis, acute cardiac care.

Literature


2. Authors/Task Force M, McMurray JJV, Adamopoulos S, Anker SD, et al. ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure 2012: The Task Force for the Diagnosis and Treatment of Acute and Chronic Heart Failure 2012 of the European Society of Cardiology. Developed in collaboration with the Heart Failure Association (HFA) of the ESC. Eur Heart J. 2012;33(14):1787-847.


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