EVALUATING THE PROGNOSTIC VALUE OF CMR IN ACUTE PERICARDITIS

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Background: Up to 30% of patients with acute pericarditis develop persistent or recurrent disease, with some progressing to constrictive pericarditis. We sought to evaluate the prognostic value of cardiovascular magnetic resonance imaging (CMR) in patients with clinically suspected acute pericarditis.

Methods: Patients admitted to our tertiary referral center from 2009-2012 and referred for echocardiography for pericarditis were recruited. CMR was performed within 2 weeks of hospitalization and at 2 months. Patients were prospectively followed for clinical events. Significant pericardial inflammation by CMR with late gadolinium enhancement (LGE) was defined as circumferential LGE ≥ 6 standard deviations (SD) above the signal intensity of normal myocardium with intense LGE defined as ≥ 10 SD. Our primary endpoint was a composite of recurrent pericarditis and signs and/or symptoms of constrictive physiology.

Results: Twenty-six patients (age 46±16 y; 77% men) with clinically suspected pericarditis underwent initial CMR with follow-up of 1.1±0.8 y. Of these, 21 (75%) had pericardial LGE on initial CMR, with 16/21 (76%) demonstrating intense LGE. Among 5 patients without primary pericardial LGE, CMR diagnosed myocarditis (n=2), myocardial infarction (n=1), and chronic pericardial effusion (n=1). The 5th non-LGE CMR patient was found on endoscopy to have severe gastritis attributed to NSAID use for presumptive pericarditis. Among the 21 patients with pericardial LGE, 7 (33%) developed recurrent pericarditis and 6 (29%) developed constrictive physiology by echocardiography and/or CMR. Multivariate analysis found a significant relationship between intense LGE with our primary endpoint after adjusting for age and colchicine use (p=0.02). Of the 65% with follow-up CMR studies (2.1± 0.4 months), persistent pericardial LGE was found on 12/14 patients (86%).

Conclusion: CMR identifies a non-pericardial cause of presumed clinical pericarditis in a large minority of patients. Among those with pericarditis, CMR demonstrates persistent pericardial inflammation for >2 months after initial presentation. CMR may also be useful in identifying subgroups at increased risk for adverse outcomes.