ASSESSMENT OF UNEXPLAINED CARDIOMYOPATHY: CLINICAL UTILITY OF DELAYED-ENHANCEMENT CARDIAC MAGNETIC RESONANCE COMPARED TO ENDOMYOCARDIAL BIOPSY

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Background: Delayed enhancement cardiac magnetic resonance (CMR) enables high resolution characterization of myocardium. Our aim was to evaluate the diagnostic performance of CMR vs. a reference of endomyocardial biopsy (EMB) in unexplained cardiomyopathy.

Methods: We studied consecutive patients without coronary artery disease who underwent CMR and EMB within 90 days. EMB specimens were analyzed for myocardial and vascular pathology. CMR was read blinded to EMB: myocardial scar was scored via a 17-segment model. CMR was deemed positive if myocardial hyperenhancement was present, and EMB if diagnostic for cardiomyopathy etiology.

Results: 43 patients were studied (60% male, 48±18yo, LVEF 38±21%), comprising 35% of all patients who underwent EMB between 1/07-11/2011. Mean interval between EMB and CMR was 15±20 days; 60% underwent both within 7 days. CMR was positive for myocardial scar in 31 patients (87% focal, 13% diffuse). EMB was diagnostic in 12 patients (amyloid=5, myocarditis=4, sarcoid=2, lymphoma=1). CMR yielded high sensitivity (92%) and negative predictive value (93%). Only one patient with negative CMR had positive EMB - it showed vascular amyloid without myocardial abnormalities. Over half (18/29) of patients with scar on CMR had negative EMB (specificity =42%, positive predictive value=38%).

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<th>Performance of CMR vs. EMB</th>
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<td>Sensitivity</td>
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<td>92% (11/12)</td>
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Conclusion: CMR has high sensitivity and negative predictive value for assessment of EMB-evidenced myocardial pathology, supporting its use as a screening tool in unexplained cardiomyopathy.