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Comparison of cardiovascular magnetic resonance imaging and positron emission tomography for detection of myocardial viability

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Coronary Artery Disease (CAD) remains the leading cause of death. In the clinical management of patients with congestive heart failure by CAD, the accurate assessment of Myocardial Viability (MV) is crucial to guide treatment. Traditionally nuclear imaging, have been the clinical main step for assessing MV. Recently Cardiovascular Magnetic Resonance (CMR) is a rapidly emerging non-invasive imaging technique, providing high resolution images of the heart in any desired plane and without radiation. The focus of the present study is to assess cardiovascular MRI in the detection of MV. Total 27 patients who had undergone cardiac PET (Positron Emission Tomography) were taken in the MRI scanner for ventricular motion abnormality, rest perfusion study with 5 ml intravenous contrast where perfusion defect was detected to rule out ischemia. It was followed Late Gadolinium Enhancement (LGE) where contrast media was given with dose of 1 mmol/kg body weight and a wait of 10 minutes is required to acquire delayed imaging for detection of scar. Image analysis CMR was done on 3T GE MRI workstation with the protocol such as wall motion, rest perfusion and LGE of a particular myocardial segment and given score 1 to 4 (normal wall motion, hypokinemia, akinesia and dyskinesia), score 0 to 3b (normal Perfusion, mild Hypo perfusion, moderate Hypo perfusion and severe Hypo perfusion) and score 0 to 4 (no LGE, LGE up to 25% wall thickness, LGE 25-50% wall thickness, LGE 50-75% wall thickness and LGE 75% wall thickness involvement of left myocardium) respectively. Agreement between PET and MR findings was evaluated separately for each segment and analysis of CMR/PET data for 459 myocardial segments was compared in total. We got significant agreement between PET and MRI for perfusion and MV for most of the segments (75-80%).

Biography

Reena Anand is working as Head of Cardiac Imaging at Max Super Specialty Hospital, New Delhi, India. She has extensive experience on cardiac MRI from New York University. She has given various national and international talks providing training to emerging cardiac radiologist and cardiac technologists worldwide. She has numerous national and international publications to her credit. She is an active Member of Society of Cardiovascular Magnetic Resonance (SCMR).

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