

POSTER PRESENTATION

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Exercise stress CMR in patients with coronary heart disease - preliminary results

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Background

Cardiac stress MRI has grown to a well established method to detect hypokinesia or perfusion deficits due to ischemia. Commonly, myocardial load is generated by the administration of adenosine or dobutamine, which is associated by a higher complication rate compared to exercise stress testing. Our purpose was to evaluate the use of an MR conditional pedal ergometer for cardiac stress MRI.

Methods

We included 15 patients with coronary heart disease until now. All patients underwent exercise stress MRI at a whole-body 3 Tesla MR system and received real-time TRUFI CINE imaging and first-pass perfusion imaging before and after stress testing as well as late enhancement (LE) PSIR sequences after stress. All images were visually rated by three experienced radiologists.

Results

As shown on LE images, two patients suffered from silent myocardial infarction and showed stress-induced hypokinesia and slight perfusion deficits nearby the infarction scar. In additional 5 patients, we detected segmental hypokinesia and endocardial perfusion deficits due to exercise. 3 patients exhibited endocardial perfusion deficits without hypokinesia. 5 patient did not show any abnormalities due to stress.

Conclusions

Exercise stress of the myocardium is a helpful method to detect ischemic area in cardiac MRI.

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