identified by Tc99*-MIBI SPECT imaging prior to myocardial reperfusion therapy. Signal intensity (SI) was measured in three representative short axis slices both in the perfusion defect and the remote myocardium.

Results: The results for signal homogeneity are shown in the following table:

Normal Myocardium			
	mean ± SD	COV in slice	COV between slices
T2-Trufisp	56.4 ± 11.3	20%	4%
TSE fatsat	112 ± 19.1	17%	4%
TSE fatsat BC	418 ± 104	26%	11%
STIR	47.6 ± 22.3	47%	29%
STIR BC	184 ± 77.1	44%	39%

Signal homogeneity was best in T2-Trufisp and TSE-fatsat. Compared to TSE-fatsat, STIR images suffered from significantly more noise. As expected the body coil receiver measurements had more noise within the slice. But this was not compensated by a better homogeneity between slices suggesting a good surface coil attenuation of the scanner used. In the measurement of the perfusion defect in acute myocardial infarction the absolute contrast in TSE-fatsat was better than in T2-Trufisp (see Table below). This was compensated in part by the lower noise of T2-Trufisp but overall the contrast to noise ratio (CNR) of TSE-fatsat was significantly better (p=0.02).

Acute Myocardial Infarction			
	mean ± SD lesion	mean ± SD remote	CNR
T2-Trufisp	58.2 ± 7.48	46.2 ± 6.42	1.66
TSE fatsat	179 ± 20.3	133 ± 18	2.29

Conclusion: For the scanner used the standard T2-weighted TSE sequence with fat saturation shows the best image contrast and homogeneity for detecting perfusion defects in acute myocardial infarction.

For detecting perfusion defects in acute myocardial infarction we evaluated 5 different T2 imaging sequences and found that on the scanner used the standard T2 weighted TSE sequence with fat saturation shows the best image contrast and homogeneity.

2023. SSFP BASED DIPYRIDAMOLE STRESS FIRST PASS PERFUSION IMAGING IS ACCURATE FOR THE ASSESSMENT OF OBSTRUCTIVE CORONARY ARTERY DISEASE

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Background: Cardiovascular magnetic resonance (CMR) perfusion imaging primarily uses either FLASH , GRE-EPI or steady state free precession (SSFP) imaging sequences. Compared with the other perfusion sequences, SSFP has a higher contrast to noise ratio and linearity of signal intensity; however, an intermediate temporal resolution. There are only small (<30 subjects) studies describing the diagnostic accuracy of SSFP based vasodilator first pass perfusion for detecting obstructive coronary artery disease. Purpose: To determine the accuracy of SSFP based vasodilator first pass perfusion CMR against a reference standard of invasive coronary angiography in human subjects. Methods: 181 consecutive subjects were referred for CMR stress testing utilizing dipyridamole (0.56 mg/kg over 4 minutes) and first pass gadolinium enhanced imaging (0.05 mmol/kg). CMR was performed on a Siemens Espree 1.5T scanner with a phased array surface coil. A saturation recovery, SSFP sequence was utilized to obtain 3 images every heart beat. Invasive cardiac catheterization defined the presence of obstructive disease as a visual or intravascular ultrasound assessment of >70% stenosis involving a major epicardial coronary vessel or >50% of the left main, or a fractional flow reserve of <0.75. Results: Patients averaged 59±9 years and 122 were men (67%). Forty-nine subjects underwent cardiac catheterization within 90 days, yielding a sensitivity of 93%; specificity 83%; positive predictive value 90%; negative predictive value 88%; and accuracy 90%. In the 132 patients that did not have coronary angiography, 14 subjects had vasodilator stress induced perfusion defects consistent with myocardial ischemia. If all of these cases are considered false positive with stress induced perfusion defects, the overall specificity is no lower than 89%. Determination of sensitivity in the remaining subjects that did not get catheterization can not be determined at this time. Conclusion: SSFP based dipyridamole stress first pass contrast perfusion imaging is accurate for the assessment of obstructive coronary artery disease.

In a study with 181 consecutive patients, dipyridamole stress perfusion using a saturation prepared SSFP acquisition had a 93% sensitivity and 83-89% specificity for detecting obstructive coronary artery disease.