Online Supplementary Table 8: Raw data

Title	Firt author	Journal	Year	Purpose	Patient group	Patients, n	Mean or median age, years (SD or IQR)	Male, %	Mean or median time to reperfusion, hours (SD or IQR)	T2-weighted MRI sequence	T2-weighted MRI interpretation	T1-weighted late gadlinium enhancement MRI sequence	T1-weighted late gadolinium enhancement MRI interpretation	Spatial extent of myocardial oedema on T2-weighted MRI, % of LV myocardium (SD or IQR)	Spatial extent of myocardial necrosis measured by T1-weighted late gadolinium enhancement MRI, % of LV myocardium (SD or IQR)	MSI, % (SD or IQR)
Myocardial Extracellular Volume Fraction Allows Differentiation of Reversible Versus Irreversible Myocardial Damage and Prediction of Adverse Left Ventricular Remodeling of ST-Elevation Myocardial Infarction	Chen	J Magn Reson Imaging	2020	To evaluate the extracellular volume fraction (ECV) in the differentiation of reversible from irreversible myocardial injury and the prediction value of left ventricular adverse remodeling in patients with STEMI after reperfusion	all patients	24	62 (10)	75	5 (2.4)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	FWHM algorithm	34.4 (15.1)	30.8 (14.9)	NA
Acute Microvascular Impairment Post-Reperfused STEMI Is Reversible and Has Additional Clinical Predictive Value: A CMR OxAMI Study	Borlotti	JACC Cardiovasc Imaging	2019	This study sought to investigate the clinical utility and the predictive relevance of absolute rest myocardial blood flow by cardiac magnetic resonance in acute myocardial infarction.	all patients	64	60 (9)	78.1	3 (2.3, 4)	T2-prepared bright-blood single-shot balanced SSFP	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	40 (33, 48)	25 (14, 32)	NA
Elevated serum uric acid affects myocardial reperfusion and infarct size in patients with ST-segment elevation myocardial infarction undergoing primary percutaneous coronary intervention	Mandurino-Mirizzi	J Cardiovasc Med	2018	Our aim was to correlate eSUA with infarct size, infarct size shrinkage, myocardial reperfusion grade and long-term mortality in STEMI patients undergoing primary percutaneous coronary intervention.	elevated serum uric acid	16	59 (12.5)	100	4.1 (1.7)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	42 (14.5)	31.8 (14.9)	24.5 (13.2)
					non-elevated serum uric acid	85	57.6 (10.7)	90.6	3.4 (1.4)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	35.2 (11.6)	25.3 (10.3)	28.1 (18.6)
Dynamic changes in injured myocardium, very early after acute myocardial infarction, quantified using T1 mapping cardiovascular magnetic resonance	Alkhalil	J Cardiov Magn Reson	2018	We studied the temporal changes in the extent and intensity of injured myocardium using T1-mapping technique within the first week after STEMI.	all patients	16	56 (8)	100	2.8 (1.7, 4.2)	T2-prepared bright-blood single-shot balanced SSFP	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	42 (15)	23 (13, 32)	NA
CMR Native T1 Mapping Allows Differentiation of Reversible Versus Irreversible Myocardial Damage in ST-Segment-Elevation Myocardial Infarction: An OxAMI Study (Oxford Acute Myocardial Infarction)	Liu	Circ Cardiovasc Imaging	2017	We sought to investigate the ability of acute native T1 mapping to differentiate reversible and irreversible myocardial injury and its predictive value for left ventricular remodeling.	all patients	60	61 (10)	82	3.9 (3.4)	T2-prepared bright-blood single-shot balanced SSFP	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	FWHM algorithm	41 (14)	27 (12)	NA
Acute Infarct Extracellular Volume Mapping to Quantify Myocardial Area at Risk and Chronic Infarct Size	Garg	Circ Cardiovasc Imaging	2017	The main aim of this study was to investigate whether acute extracellular volume maps can reliably	1.5T LGE fwhm	32	61 (12)	81	3.9 (2.4, 6.4)	T2-weighted dark-blood TSE/FSE with IR (STIR)	FWHM algorithm	PSIR using segmented FLASH readout (SPGR)	FWHM algorithm	47.3 (19.2)	28.8 (15.7)	NA

on Cardiovascular Magnetic Resonance Imaging				quantify myocardial area at risk and final infarct size.	1.5T LGE 5SD	32	61 (12)	81	3.9 (2.4, 6.4)	T2-weighted dark-blood TSE/FSE with IR (STIR)	FWHM algorithm	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	47.3 (19.2)	28.1 (17)	NA
					3T LGE fwhm	18	57 (11)	89	3.7 (3.1, 6.8)	T2-weighted dark-blood TSE/FSE with IR (STIR)	FWHM algorithm	PSIR using segmented FLASH readout (SPGR)	FWHM algorithm	47.5 (16.2)	25.2 (12.2)	NA
					3T LGE 5SD	18	57 (11)	89	3.7 (3.1, 6.8)	T2-weighted dark-blood TSE/FSE with IR (STIR)	FWHM algorithm	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	47.5 (16.2)	28.6 (16.5)	NA
Morphine Does Not Affect Myocardial Salvage in ST-Segment Elevation Myocardial Infarction	Gwag	Plos One	2017	We investigated myocardial salvage index to determine whether intravenous morphine affects myocardial injury adversely in STEMI patients undergoing primary percutaneous coronary intervention.	no morphine	203	60 (52, 70)	80.78818	3.7 (2.1, 6.7)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Manual contouring	PSIR using segmented FLASH readout (SPGR)	Manual contouring	33.4 (22.6, 42.3)	18.3 (12.4, 25.8)	42 (29.5, 55.3)
					morphine	96	58.5 (50, 66)	80.20833	2.6 (1.7, 5.5)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Manual contouring	PSIR using segmented FLASH readout (SPGR)	Manual contouring	41.1 (28.8, 52.3)	22.2 (12.9, 29.6)	46.1 (34, 58.7)
Multi-vendor, multicentre comparison of contrast-enhanced SSFP and T2-STIR CMR for determining myocardium at risk in ST-elevation myocardial infarction	Nordlund	Eur Heart J Cardiovasc Imaging	2016	We aimed to determine how T2-short tau inversion recovery and contrast-enhanced steady-state free precession magnetic resonance imaging perform in determining myocardium at risk when applied in multicentre, multi-vendor settings.	all patients	215	60.2 (40, 86)	84	3.1 (1.2)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Manual contouring	PSIR using segmented FLASH readout (SPGR)	Manual contouring	36 (11)	17 (10)	NA
T mapping for assessment of myocardial injury and microvascular obstruction at one week post myocardial infarction	Cameron	Eur J Radiol	2015	To compare 3 tesla T1 mapping to conventional T2-weighted imaging for delineating myocardial oedema one week after STEMI, and to explore the confounding effects of microvascular obstruction on each technique.	microvascular obstruction	35	58 (29, 88)	80	4.1 (1.1, 8.2)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	48 (13)	NA	59 (25)
					no microvascular obstruction	27	60 (46, 83)	66.66667	3.3 (0.8, 12)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	28 (11)	NA	75 (17)
Prognosis after ST-elevation myocardial infarction: a study on cardiac magnetic resonance imaging versus clinical routine	deWaha	Trials	2014	This study aimed to evaluate the incremental prognostic value of infarct size, microvascular obstruction, MSI, and LV ejection fraction assessed by cardiac MR imaging in comparison to traditional outcome markers in patients with STEMI reperfused by primary percutaneous intervention.	occurence of a major cardiovascular event	52	69 (60, 77)	69.23077	3.5 (2.3, 6.6)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	NA	31.5 (22.5, 40)	27 (10, 39.7)
					no occurence of a major cardiovascular event	226	64 (55, 72)	72.56637	3.2 (2.1, 5.6)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	NA	13.1 (5.7, 22.4)	67.4 (47.9, 83.3)
Impact of overweigt on myocardial infarct size in patients undergoing primary percutaneous coronary interventions: A magnetic resonance imaging study	Sohn	Atherosclerosis	2014	We evaluated the impact of overweight on myocardial infarct size in patients undergoing primary percutaneous intervention for STEMI.	body mass index beyond 25	110	58.3 (12.6)	84.54545	4.8 (2.8, 7.4)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Manual contouring	PSIR using segmented FLASH readout (SPGR)	Manual contouring	36 (25.7, 49.6)	20.8 (11.4, 33.1)	39.2 (24.6, 59.6)
					body mass index above 25	83	56.2 (11)	90.36145	4.3 (2.6, 6.8)	T2-weighted dark-blood TSE/FSE	Manual contouring	PSIR using segmented FLASH	Manual contouring	29.4 (20.5, 37.6)	17.9 (9, 24.9)	43.2 (27.7, 54.4)

										with IR (STIR)		readout (SPGR)				
Impact of white blood cell count on myocardial salvage, infarct size, and clinical outcomes in patients undergoing primary percutaneous coronary intervention for ST-segment elevation myocardial infarction: a magnetic resonance imaging study	Chung	Int J Cardiovasc Imaging	2014	We sought to determine the relationship between white blood cell count and infarct size assessed by cardiovascular MR imaging in patients undergoing primary percutaneous coronary intervention for STEMI.	high white blood cell count	91	56 (47, 66)	91.20879	4.7 (2.9, 9.3)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Manual contouring	PSIR using segmented FLASH readout (SPGR)	Manual contouring	63.3 (47.6, 76.5)	22 (16.7, 33.9)	36.7 (23.5, 52.4)
					low white blood cell count	107	58 (51, 68)	83.17757	4.4 (2.5, 6.7)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Manual contouring	PSIR using segmented FLASH readout (SPGR)	Manual contouring	52.3 (39.3, 70.7)	14.7 (8.5, 24.7)	47.7 (29.6, 60.7)
Intracoronary compared with intravenous bolus abciximab application during primary percutaneous coronary intervention in ST-segment elevation myocardial infarction: cardiac magnetic resonance substudy of the AIDA STEMI trial	Eitel	J Am Coll Cardiol	2013	The aim of the AIDA STEMI (Abciximab i.v. Versus i.c. in ST-elevation Myocardial Infarction) cardiac magnetic resonance substudy was to investigate potential benefits of intracoronary versus intravenous abciximab bolus administration on infarct size and reperfusion injury in ST-segment elevation myocardial infarction.	intravenous abciximab	401	61 (51, 71)	79	3.2 (1.8, 5.6)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	35 (25, 48)	17 (8, 25)	50 (26, 48)
					MACE	53	62 (51, 71)	76	3 (1.8, 5.2)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	NA	24 (18, 31)	37 (23, 55)
					no MACE	742	62 (51, 71)	76	3 (1.8, 5.2)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	NA	16 (8, 24)	52 (33, 69)
					intracoronary abciximab	394	63 (51, 71)	73	2.7 (1.8, 5)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	35 (25, 47)	16 (9, 25)	52 (25, 47)
Remote ischemic post-conditioning of the lower limb during primary percutaneous coronary intervention safely reduces enzymatic infarct size in anterior myocardial infarction: a randomized controlled trial	Crimi	JACC Cardiovasc Interv	2013	This study sought to evaluate whether remote ischemic post-conditioning could reduce enzymatic infarct size in patients with anterior STEMI undergoing primary percutaneous coronary intervention.	no remote ischemic post-conditioning	48	56 (11)	89.58333	3.1 (2.5, 4.2)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Manual contouring	36 (15)	26 (13)	NA
					remote ischemic post-conditioning	48	61 (11)	85.41667	3 (2.3, 3.8)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Manual contouring	33 (11)	24 (10)	NA
The assessment of area at risk and myocardial salvage after coronary revascularization in acute myocardial infarction: comparison between CMR and SPECT	Hadamitzky	JACC Cardiavasc Imaging	2013	This study sought to compare cardiac magnetic resonance and single-photon emission computed tomography for assessment of area at risk, scar size, and salvage area after coronary reperfusion in acute myocardial infarction.	STEMI	121	58.6 (53.1, 70)	81.81818	4.9 (3.4, 8)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 3 SD above remote myocardium	31 (14.2)	18.8 (14.5)	NA
Right ventricular injury in ST-elevation myocardial infarction: risk stratification by visualization of wall motion, edema, and delayed-enhancement cardiac magnetic resonance	Grothoff	Circ Cardiovasc Imaging	2012	Aims were to determine the predictors and the prognostic significance of right ventricular injury assessed by wall motion abnormalities, edema, myocardial salvage index, and delayed enhancement in acute reperfused STEMI.	right ventricular injury	69	65 (13)	79.7	4 (2.6, 7.2)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Manual contouring	PSIR using segmented FLASH readout (SPGR)	Manual contouring	NA	21 (12)	47 (20)
					no right ventricular injury	69	65 (11)	79.7	3 (2.2, 5.4)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Manual contouring	PSIR using segmented FLASH readout (SPGR)	Manual contouring	NA	17 (14)	59 (26)
Distal protection device aggravated microvascular obstruction evaluated by cardiac MR after primary percutaneous intervention for	Yoon	Int J Cardiol	2012	In a prospective randomized trial, we investigated the mechanism of the poor effect of distal	no distal protection and no thrombus aspiration	55	58 (11)	78.7	5.2 (2.6)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	46.1 (16.4)	35.1 (14.6)	27.6 (20.8)

ST-elevation myocardial infarction				protection and thrombus aspiration in 126 patients with STEMI.	distal protection and thrombus aspiration	55	58 (12)	80	4.9 (2.2)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	50 (14.1)	34.7 (13.6)	31.6 (18.8)
Comparison of magnetic resonance imaging findings in non-ST-segment elevation versus ST-segment elevation myocardial infarction patients undergoing early invasive intervention	Xu	Int J Cardiovasc Imaging	2012	To define causes and pathological mechanisms underlying differences in clinical outcomes, we compared the findings of contrast-enhanced MR imaging between STEMI and NSTEMI.	STEMI	113	58 (12.3)	85.84071	4.6 (2.7, 9.6)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Manual contouring	32.9 (22.7, 45.9)	19.2 (10.3, 30.7)	40.5 (24.8, 83.5)
T2-weighted cardiac MR assessment of the myocardial area-at-risk and salvage area in acute reperfused myocardial infarction: Comparison of state-of-the-art dark blood and bright blood T2-weighted sequences	Viallon	J Cardiov Magn Reson	2012	To compare different state-of-the-art T2-weighted imaging sequences combined with late gadolinium enhancement for myocardial salvage area assessment by cardiac MR imaging.	T2 Short-Tau Inversion Recovery Turbo Spin Echo	30	55 (13)	83.33333	5 (3.6)	T2-weighted dark-blood TSE/FSE with IR (STIR)	FWHM algorithm	PSIR using segmented FLASH readout (SPGR)	FWHM algorithm	48 (39, 55)	21.2 (12.9)	NA
					T2 Steady State Free Precession	30	55 (13)	83.33333	5 (3.6)	T2-prepared bright-blood single-shot balanced SSFP	FWHM algorithm	PSIR using segmented FLASH readout (SPGR)	FWHM algorithm	41 (28, 54)	21.2 (12.9)	NA
					hybrid T2 Turbo Spin Echo and Steady State Free Precession (=Acquisition for Cardiac Unified T2 Edema)	30	55 (13)	83.33333	5 (3.6)	Hybrid TSE-SSFP (ACUTE)	FWHM algorithm	PSIR using segmented FLASH readout (SPGR)	FWHM algorithm	40 (26, 49)	21.2 (12.9)	NA
					T2 Turbo Spin Echo with blade k-space coverage	30	55 (13)	83.33333	5 (3.6)	BLADE k-space coverage for dark-blood TSE	FWHM algorithm	PSIR using segmented FLASH readout (SPGR)	FWHM algorithm	46 (33, 55)	21.2 (12.9)	NA
A high loading dose of clopidogrel reduces myocardial infarct size in patients undergoing primary percutaneous coronary intervention: a magnetic resonance imaging study	Song	Am Heart J	2012	We sought to determine whether a 600-mg loading dose of clopidogrel reduces myocardial infarct size compared with a 300-mg dose using contrast-enhanced magnetic resonance imaging in patients undergoing primary percutaneous coronary intervention for STEMI.	600mg Clopidogrel	117	59 (51, 68)	82.90598	4.8 (2.8, 8)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Manual contouring	PSIR using segmented FLASH readout (SPGR)	Manual contouring	31.5 (22.6, 46)	17.3 (8.9, 26.2)	47.7 (33.7, 60.9)
					300mg Clopidogrel	81	55 (47, 66)	92.59259	4 (2.7, 6.2)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Manual contouring	PSIR using segmented FLASH readout (SPGR)	Manual contouring	33.1 (26.2, 45.2)	21.7 (12.9, 30)	32 (23.6, 51.5)
Microvascular resistance predicts myocardial salvage and infarct characteristics in st-elevation myocardial infarction	Payne	J Am Heart Assoc	2012	We investigated the relationships among culprit artery microvascular resistance, myocardial salvage, and ventricular function.	all patients	108	57.8 (10.2)	83.33333	3.1 (2.3, 5.5)	Hybrid TSE-SSFP (ACUTE)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 2 SD above remote myocardium	32.9 (12.4)	23.5 (14.2)	19.2 (36.3)
Quantification of myocardial area at risk: validation of coronary angiographic scores with cardiovascular magnetic resonance methods	Moral	Rev Esp Cardiol (Engl Ed)	2012	Our objective was to compare the myocardial area-at-risk estimated by Bypass Angioplasty Revascularization Investigation Myocardial Jeopardy Index (BARI) and Alberta Provincial Project for Outcome	all patients	70	57.7 (13.9)	88.57143	4.5 (1.2)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	36.9 (14.3)	24.2 (13.5)	12.8 (8.6)

				Assessment in Coronary Heart Disease (APPROACH) angiographic scores with those determined by cardiovascular MR imaging.												
Analysis of post-infarction salvaged myocardium by cardiac magnetic resonance. Predictors and influence on adverse ventricular remodeling	Monmeneu	Rev Esp Cardiol (Engl Ed)	2012	To evaluate by cardiovascular MR imaging those factors related to the amount of salvaged myocardium after a myocardial infarction and its value in predicting adverse ventricular remodeling.	median MSI =< 31%	59	58 (13)	77.9661	4.3 (3, 7)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 2 SD above remote myocardium	31 (16)	28 (15)	NA
					median MSI > 31%	59	60 (12)	72.88136	2.6 (1.9, 3.1)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 2 SD above remote myocardium	29 (14)	13 (9)	NA
Aborted Myocardial Infarction: Evaluation of Changes in Area at Risk, Late Gadolinium Enhancement, and Perfusion Over Time and Comparison With Overt Myocardial Infarction	Lee	AJR Am J Roentgenol	2012	To analyze comprehensive MRI findings of aborted myocardial infarction in terms of the area at risk, late enhancement, and perfusion on initial and follow-up studies compared with overt MI.	overt myocardial infarction	18	59 (49, 65)	72.22222	3.2 (2.9, 6.1)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	39.5 (27, 60.9)	23.5 (16.3, 39.3)	NA
					aborted myocardial infarction	11	60 (52, 71)	72.72727	1.7 (1.4, 2.6)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	36.8 (29.8, 43.1)	4.8 (0, 11.9)	NA
Cardiovascular magnetic resonance-derived intramyocardial hemorrhage after STEMI: Influence on long-term prognosis, adverse left ventricular remodeling and relationship with microvascular obstruction	Husser	Int J Cardiol	2013	The value of MR imaging-derived intramyocardial hemorrhage for predicting major adverse cardiac events and adverse cardiac remodeling after STEMI and its relationship with microvascular obstruction was analyzed.	occurence of a major cardiovascular event	47	61 (13)	76.59574	4.7 (3.2)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	IR with single-shot SSFP	Signal intensity > 2 SD above remote myocardium	41 (19)	32 (18)	NA
					intramyocardial haemorrhage	102	57 (12)	79.41176	4.5 (3.1)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	IR with single-shot SSFP	Signal intensity > 2 SD above remote myocardium	42 (15)	35 (15)	NA
					no occurence of a major cardiovascular event	257	57 (12)	80.93385	4.1 (3.2)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	IR with single-shot SSFP	Signal intensity > 2 SD above remote myocardium	29 (15)	21 (14)	NA
					no intramyocardial haemorrhage	202	59 (12)	80.69307	4 (3.2)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	IR with single-shot SSFP	Signal intensity > 2 SD above remote myocardium	25 (14)	16 (11)	NA
Reliability of myocardial salvage assessment by cardiac magnetic resonance imaging in acute reperfused myocardial infarction	Desch	Int J Cardiovasc Imaging	2012	The aim of this study was to evaluate the reliability of salvaged myocardium measurements by cardiac MR imaging.	all patients	20	58 (11)	60	3.7 (1.7)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Manual contouring	PSIR using segmented FLASH readout (SPGR)	Manual contouring	33.7 (9)	18.2 (7.5)	43.8 (22.5)
Dynamic Changes in ST Segment Resolution After Myocardial Infarction and the Association with Microvascular Injury on Cardiac Magnetic Resonance Imaging	Weaver	Heart Lung Circ	2011	The aim of this study was to assess whether the development of microvascular obstruction or intramyocardial hemorrhage has an impact upon ST segment resolution.	no microvascular obstruction	17	60 (NA, NA)	80.4878	3.8 (2.9, 5.3)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 2 SD above remote myocardium	31 (26, 34)	15 (10, 23)	NA
					microvascular obstruction	24	58 (NA, NA)	80.4878	3.2 (2.4, 5.7)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 2 SD above remote myocardium	45 (35, 51)	28 (19, 39)	NA
Reperfusion haemorrhage as determined by cardiovascular MRI is a predictor of adverse left ventricular remodelling and markers of late arrhythmic risk	Mather	Heart	2011	To assess whether the presence of myocardial haemorrhage influences ventricular remodelling and risk of late ventricular arrhythmia following percutaneous	no microvascular obstruction or haemorrhage	18	57 (9.2)	88.88889	3.7 (2.5, 4.7)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 2 SD above remote myocardium	29.2 (13.3)	16.3 (9.4)	NA

				coronary intervention for acute myocardial infarction.	haemorrhage	12	56 (11.6)	91.66667	3.7 (5.2, 5.2)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 2 SD above remote myocardium	43.2 (20.8)	36.2 (15.3)	NA
					microvascular obstruction only	18	58 (8.1)	88.88889	2.9 (3.9, 3.9)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 2 SD above remote myocardium	40.7 (9.7)	29.5 (11.1)	NA
Timing of cardiovascular MR imaging after acute myocardial infarction: effect on estimates of infarct characteristics and prediction of late ventricular remodeling	Mather	Radiology	2011	To define the evolution of infarct characteristics with cardiovascular MR imaging and to assess which of the cardiovascular MR imaging data acquired at day 2 or at 1 week after acute myocardial infarction, is the stronger predictor of infarct size and LV function measured at 3 months.	all patients	48	57 (9)	89.58333	3.4 (4.2, 4.2)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 2 SD above remote myocardium	37.9 (15.2)	27.2 (13.9)	27.6 (23)
Myocardium at risk in ST-segment elevation myocardial infarction comparison of T2-weighted edema imaging with the MR-assessed endocardial surface area and validation against angiographic scoring	Fuernau	JACC Cardiovasc Imaging	2011	The objective of this study was to assess the area at risk in STEMI with 2 different cardiac MR imaging methods and to compare them with the validated angiographic Alberta Provincial Project for Outcome Assessment in Coronary Heart Disease Score (APPROACH-score) in a large consecutive patient cohort.	all patients	197	65.4 (12.4)	69.03553	3.9 (4.8, 4.8)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Manual contouring	PSIR using segmented FLASH readout (SPGR)	Manual contouring	35.6 (10.9)	18.2 (11.7)	49.3 (27.3)
The evaluation of an electrocardiographic myocardial ischemia acuteness score to predict the amount of myocardial salvage achieved by early percutaneous coronary intervention Clinical validation with myocardial perfusion single photon emission computed tomography and cardiac magnetic resonance	Engblom	J Electrocardiol	2011	The aim was to study whether acute ischemic electrocardiographic changes can predict the amount of salvageable myocardium in patients with acute STEMI.	all patients	38	62 (11)	86.84211	3.2 (1.8)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Manual contouring	PSIR using segmented FLASH readout (SPGR)	Heiberg's method	35 (11)	12 (11)	67 (23)
Prognostic value and determinants of a hypointense infarct core in T2-weighted cardiac magnetic resonance in acute reperfused ST-elevation-myocardial infarction	Eitel	Circ Cardiovasc Imaging	2011	The aim of this study was to evaluate determinants and prognostic impact of a hypointense infarct core in T2-weighted cardiac MR images, studied in patients after acute, reperfused STEMI.	hypointense core present	122	62 (53, 72)	77	3.2 (2.3, 5.7)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	38.9 (31.3, 47.4)	27.1 (17.5, 34.9)	NA
					hypointense core absent	224	65 (54, 73)	72	3 (2.1, 5.4)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	32.2 (25.5, 39.3)	13 (5.7, 20.8)	NA
Long-term prognostic value of myocardial salvage assessed by cardiovascular magnetic resonance in acute reperfused myocardial infarction	Eitel	Heart	2011	The aim of this study was to investigate whether the early prognostic significance of myocardial salvage assessed by cardiac MR imaging is sustained at long-term clinical follow-up in patients	low MSI (median, 28)	104	67 (55, 75)	70.19231	4.8 (2.8, 7.1)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	35.2 (29.5, 43.1)	25.7 (19.4, 32.6)	28 (19, 38)
					high MSI (median, 73)	104	64 (55, 74)	67.30769	3.1 (21, 5)	T2-weighted dark-blood TSE/FSE	Signal intensity > 2 SD above	PSIR using segmented FLASH	Signal intensity > 5 SD above	37.3 (29.1, 47.3)	10.3 (5.4, 14.3)	73 (60, 82)

				with STEMI undergoing primary angioplasty.						with IR (STIR)	remote myocardium	readout (SPGR)	remote myocardium			
Cardiovascular magnetic resonance of the myocardium at risk in acute reperfused myocardial infarction: comparison of T2-weighted imaging versus the circumferential endocardial extent of late gadolinium enhancement with transmural projection	Ubachs	J Cardiov Magn Reson	2010	We sought to assess the ability of endocardial extent of infarction by LGE cardiac MR imaging to predict myocardium at risk as compared to T2-weighted imaging.	all patients	37	62 (10)	86.48649	3.3 (2.2)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Manual contouring	PSIR using segmented FLASH readout (SPGR)	Heiberg's method	34 (10)	14 (10)	58 (22)
Myocardial salvage by CMR correlates with LV remodeling and early ST-segment resolution in acute myocardial infarction	Masci	JACC Cardiovasc Imaging	2010	The purpose of this study was to assess the association of myocardial salvage by cardiac MR imaging with left ventricular LV remodeling and early ST-segment resolution in patients with acute myocardial infarction.	all patients	137	61 (12)	81.0219	3.7 (2.1)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	32 (15)	18 (13)	NA
A pilot study of rapid cooling by cold saline and endovascular cooling before reperfusion in patients with ST-elevation myocardial infarction	Gotberg	Circ Cardiovasc Interv	2010	We aimed to evaluate the safety and feasibility of rapidly induced hypothermia by infusion of cold saline and endovascular cooling catheter before reperfusion in patients with acute myocardial infarction.	hypothermia	9	62 (10)	77.77778	2.9 (0.9)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Manual contouring	PSIR using segmented FLASH readout (SPGR)	Heiberg's method	44 (8)	13.7 (6.4)	NA
					no hypothermia	9	58 (7)	77.77778	2.9 (1)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Manual contouring	PSIR using segmented FLASH readout (SPGR)	Heiberg's method	43 (8)	20.5 (10)	NA
Quantification of myocardial area at risk with T2-weighted CMR: comparison with contrast-enhanced CMR and coronary angiography	Wright	JACC Cardiovasc Imaging	2009	We compared the volume of hyperintense myocardium on T2-weighted cardiac MR imaging with the myocardial area at risk determined by contrast-enhanced cardiac MR imaging with infarct endocardial surface length and the area at risk estimated by conventional coronary angiography with the BARI (Bypass Angioplasty Revascularization Investigation) risk scor.	all patients	108	59 (11)	84.25926	4.2 (2.3)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Manual contouring	32 (16)	17 (12)	NA
Impact of primary coronary angioplasty delay on myocardial salvage, infarct size, and microvascular damage in patients with ST-segment elevation myocardial infarction: insight from cardiovascular magnetic resonance	Francone	J Am Coll Cardiol	2009	We investigated the extent and nature of myocardial damage by using cardiovascular MR imaging in relation to different time-to-reperfusion intervals.	fourth quartile (time between symptom onset and reperfusion 9h in the mean)	17	58 (11)	52.94118	9 (3.5)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	19 (4)	16.9 (6)	NA
					third quartile (time between symptom onset and reperfusion 5h in the mean)	17	57 (13)	58.82353	5 (0.9)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	15 (8)	12.6 (10)	NA
					second quartile	17	57 (10)	76.47059	2.4 (0.4)	T2-weighted dark-blood	Signal intensity > 2	PSIR using segmented	Signal intensity > 5	15 (8)	11.8 (10)	NA

					(time between symptom onset and reperfusion 2.4h in the mean)					TSE/FSE with IR (STIR)	SD above remote myocardium	FLASH readout (SPGR)	SD above remote myocardium			
					first quartile (time between symptom onset and reperfusion 1h in the mean)	19	58 (7.3)	78.94737	1 (0.1)	T2-weighted dark-blood TSE/FSE with IR (STIR)	Signal intensity > 2 SD above remote myocardium	PSIR using segmented FLASH readout (SPGR)	Signal intensity > 5 SD above remote myocardium	16 (9)	7.5 (9)	NA

MRI: magnetic resonance imaging, STEMI: ST-segment elevation myocardial infarction, SD: standard deviation, TSE: turbo spin echo, FSE: fast spin echo, IR: inversion recovery, STIR: short tau inversion recovery, SSFP: steady state free precession, ACUTE: Acquisition for Cardiac Unified T2 Edema, PSIR: phase sensitive inversion recovery, FLASH: fast low angle shot, SPGR: spoiled gradient echo, FWHM: full width at half maximum; time to reperfusion = time from symptom onset until revascularization.