



Supplementary material

Prognostic Value of Myocardial Ischemia and Necrosis in Depressed Left Ventricular Function: A Multicenter Stress Cardiac Magnetic Resonance Registry

Oliver Husser,^{a,b} José V. Monmeneu,^c Clara Bonanad,^a María P. López-Lereu,^c
Julio Núñez,^a María J. Bosch,^d Carlos García,^e Juan Sanchis,^a Francisco J. Chorro,^a
and Vicente Bodí^{a,*}

^a*Servicio de Cardiología, Hospital Clínico Universitario de Valencia, Universitat de València, Valencia, Spain*

^b*Klinik für Herz- und Kreislauferkrankungen, Deutsches Herzzentrum München, München, Germany*

^c*ERESA, Valencia, Spain*

^d*Servicio de Cardiología, Hospital La Plana, Vila-real, Castellón, Spain*

^e*Servicio de Cardiología, Hospital General de Castellón, Castellón, Spain*

SUPPLEMENTARY MATERIAL**Table 1**

Baseline Characteristics According to the Presence or Absence of Perfusion Defect and Late Gadolinium Enhancement

	LGE- PD- n = 124	LGE+ PD- n = 43	LGE+ PD+ n = 195	LGE- PD+ n = 29	<i>P</i> trend
Age, mean (SD), y	64 (12)	61 (10)	67 (11)*	70 (9)*	.001
Male sex	78 (63)	37 (86)§	157 (81)§†	18 (62)*	.001
Diabetes	18 (15)	9 (21)	47 (24)§	11 (38)§	.03
Hypertension	69 (56)	26 (61)	135 (69)§	19 (66)	.1
Hypercholesterolemia	55 (44)	26 (61)	127 (65)§†	13 (45)	.002
Current smoker	26 (21)	11 (26)	50 (26)	5 (17)	.6
Previous CAD	10 (8)	25 (58)§	163 (84)§*†	8 (28)§*	<.0001
Previous angioplasty	4(3)	13 (30)§	68 (35)§†	2 (7)*	<.0001
Previous coronary surgery	1 (1)	2 (5)	44 (23)§*†	1 (3)	<.0001
Previous infarction	6 (5)	25 (58)§	136 (50)§†	4 (14)*	<.0001

CAD, coronary artery disease; LGE, late gadolinium enhancement, PD, perfusion deficit; SD, standard deviation; +, index present in • 2 segments, -, index present in 0-1 segments.

* $P < .05$ vs LGE+ PD-

† $P < .05$ vs LGE- PD+

‡ $P < .05$ vs LGE+ PD+

§ $P < .05$ vs LGE-PD-

Table 2

Cardiovascular Magnetic Resonance Characteristics According to the Presence or Absence of Perfusion Defect and Late Gadolinium Enhancement

	LGE– PD– n=124	LGE+ PD– n=43	LGE+ PD+ n=195	LGE– PD+ n=29	P trend
LV Ejection fraction, mean (SD), %	39 (9)	39 (9)	39 (9)	42 (7)	.2
LV End-diastolic volume, mean (SD), mL/m²	102 (33)	96 (34)	102 (32)	95 (24)	.5
LV End-systolic volume, mean (SD), mL/m²	64 (26)	61 (28)	64 (28)	55 (19)	.4
Rest-WMA (Nr. of segments)	0 [0-15]	6 [4-14]	6 [4-11]	6 [5-10]§	<.001
Viability (Nr. of segments)	0 [0-0]	2 [0-9]	2 [0-5]	6 [4-11]§*+	<.001
PD (Nr. of segments)	0 [0-0]	0 [0-0]+	7 [5-9]§	5 [3-8]§*+	<.001
LGE (Nr. of segments)	0 [0-0]*	5 [3-6]+	6 [4-8]§	0 [0-0]*+	<.001

CMR, cardiac magnetic resonance, LGE, late gadolinium enhancement, PD, perfusion deficit;

SD, standard deviation; +, index present in • 2 segments, –, index present in 0-1 segments.

* $P < .05$ vs LGE+ PD–

† $P < .05$ vs LGE– PD+

+ $P < .05$ vs LGE+ PD+

§ $P < .05$ vs LGE–PD–

Text 1

The interobserver variability for the determination of the extent (number of segments) of wall motion abnormalities at rest, perfusion deficit, inducible wall motion abnormalities and late enhancement was analyzed as follows. These 4 CMR indexes were quantified at different times by 2 operators in 100 patients, not included in the study group, evaluated for ischemic chest pain using dipyridamole stress perfusion cardiac magnetic resonance.

The absolute (mean \pm standard deviation difference, in segments, between the 2 measurements) and relative difference (mean \pm standard deviation difference, in % change, from the first to the second measurement) are depicted below.

	Absolute difference (segments)	Relative difference (%)
Wall motion abnormalities at rest	0 ± 0	$1 \pm 1\%$
Perfusion deficit	0 ± 1	$2 \pm 1\%$
Late enhancement	0 ± 0	$0 \pm 1\%$

The absolute and relative difference for the 3 other CMR indexes used in this study (left ventricular ejection fraction, end-diastolic and end-systolic volume indexes) are depicted below.

	Absolute difference (segments)	Relative difference (%)
Ejection fraction	$2 \pm 1\%$	$4 \pm 2\%$
End-diastolic volume index	$4 \pm 2 \text{ mL/m}^2$	$3 \pm 1\%$
End-systolic volume index	$3 \pm 2 \text{ mL/m}^2$	$4 \pm 1\%$

Text 2

Prevalence of perfusion defect and late gadolinium enhancement in patients without known coronary artery disease and depressed left ventricular function

Of the study population of 391 patients, 185 subjects (47%) presented with a depressed LV function of unclear origin. In these patients CMR was performed in order to assess an ischemic origin (ischemia or pre-existent myocardial infarction). PD and LGE were found in these patients in 29% (53/185) and 27% (50/185), respectively. Overall, according to the CMR categorization, 62% (114/185) had a normal CMR study (PD-, LGE-), 10% (18/185) only LGE+, 11% (21/185) only PD+ and 17% (32/185) both PD+ and LGE+.