

Supplementary material

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Table S1. Comparison of clinical, electrophysiology characteristics and heart rhythm disorders and ablation procedures of patients with end-stage heart failure (HF) who underwent qualification procedure for heart transplantation in 2018–2019 according to HF etiology

Etiology	Ischemic (n = 88)	Nonischemic (n = 81)	P-value
<i>Clinical characteristics</i>			
Mean age, years, mean (SD)	58.9 (5.9)	50.8 (11.7)	<0.001
Male sex, n (%)	81 (92.1)	69 (85.2)	0.2
NYHA, n (%)			0.6
I	2 (2.3)	5 (6.2)	
II	35 (39.8)	30 (37)	
III	41 (46.6)	36 (44.4)	
IV	10 (11.4)	10 (12.4)	
Mean LVEF, %, mean (SD)	19.9 (5.4)	21.6 (10)	0.2
Chronic kidney disease, n (%)	36 (40.9)	25 (30.8)	0.2
Diabetes, n (%)	37 (42.1)	16 (19.8)	0.002
Dyslipidemia, n (%)	70 (79.6)	43 (53.1)	<0.001
Arterial hypertension, n (%)	58 (65.9)	30 (37)	<0.001
Peripheral artery disease, n (%)	19 (21.6)	6 (7.4)	0.009
Chronic obstructive pulmonary disease, n (%)	7 (8)	3 (3.7)	0.2
Active smoking, n (%)	59 (67.1)	63 (77.8)	0.1
Stroke, n (%)	9 (10.2)	8 (9.9)	0.9
Transient ischemic attack, n (%)	2 (2.3)	4 (4.9)	0.3
Coronary artery disease, n (%)	88 (100)	12 (14.8)	<0.001
Myocardial infarction, n (%)	71 (80.7)	2 (2.5)	<0.001
- ST-elevation myocardial infarction, n (%)	57 (64.8)	1 (1.2)	<0.001
- Non-ST elevation myocardial infarction, n (%)	25 (28.4)	1 (1.2)	<0.001

Percutaneous coronary intervention, n (%)	76 (86.4)	2 (2.5)	<0.001
Coronary artery by-pass graft, n (%)	26 (29.6)	0 (0)	<0.001
Valvular heart disease (moderate or severe), n (%)	58 (65.9)	45 (55.6)	0.2
Mitral regurgitation	52 (59.1)	36 (44.4)	0.06
Mitral stenosis	1 (1.1)	1 (1.2)	1.0
Tricuspid regurgitation	30 (34.1)	32 (39.5)	0.5
Aortic stenosis	7 (8)	6 (7.4)	0.9
Aortic regurgitation	4 (4.6)	7 (8.6)	0.3
Mean VO ₂ max, l/min, mean (SD)	14.8 (4.7)	16.9 (5.2)	0.05
Electrophysiology characteristics			
Cardiac implantable electric device, n (%)	87 (98.9)	72 (88.9)	0.006
PM	0 (0)	1 (1.2)	0.3
ICD	47 (53.4)	38 (46.9)	0.4
CRT-D	40 (45.5)	33 (40.7)	0.5
AVB, n (%)			0.3
I°	0 (0)	1 (10)	
II°	2 (66.7)	2 (20)	
III°	1 (33.3)	7 (70)	
SND, n (%)	0 (0)	1 (1.2)	
Heart rhythm disorders and ablation procedures			
Ventricular arrhythmias, n (%)	37 (42.1)	32 (39.5)	0.7
VT/VF	36 (40.9)	31 (38.3)	0.7
ES	5 (5.7)	2 (2.5)	0.3
VEBs	2 (2.3)	3 (3.7)	0.6
Atrial fibrillation, n (%)	41 (46.6)	43 (53.1)	0.4
Paroxysmal	23 (26.1)	20 (24.7)	0.8
Sustained	18 (20.5)	23 (28.4)	0.2
Atrial flutter, n (%)	8 (9.1)	11 (13.6)	0.4
Other SVT, n (%)	3 (3.4)	4 (4.9)	0.6
Ablation, n (%)	13 (14.8)	14 (17.3)	0.7
PVI	2 (2.3)	5 (6.2)	0.2

AVN	4 (4.6)	4 (4.9)	0.9
CTI	2 (2.3)	3 (3.7)	0.6
VT	5 (5.7)	2 (2.5)	0.3
VEBs	0 (0)	1 (1.2)	0.3
AVNRT	1 (1.1)	0 (0)	0.3

Abbreviations: AVB, atrioventricular block; AVN, atrioventricular node; CRT-D, cardiac resynchronization therapy defibrillator; CTI, cavotricuspid isthmus; ES, electric storm; ICD, implantable cardioverter-defibrillator; LVEF, left ventricular ejection fraction; NYHA, New York Heart Association; PM, pacemaker; PVI, pulmonary vein isolation; SND, sinus node dysfunction; SVT, supraventricular tachycardia; VEBs, ventricular extra beats; VF, ventricular fibrillation; VT, ventricular tachycardia

Table S2. Comparison of clinical, electrophysiology characteristics and heart rhythm disorders and ablation procedures of patients with end-stage heart failure (HF) who underwent qualification procedure for heart transplantation in 2018–2019 according to type of CIED

CIED	ICD (n = 85)	CRT-D (n = 73)	P-value
Clinical characteristics			
Age, years, mean (SD)	54 (10.8)	57.4 (7.6)	0.03
Male sex, n (%)	74 (87.1)	66 (90.4)	0.5
NYHA, n (%)			0.4
I	3 (3.4)	2 (2.7)	
II	37 (43.5)	24 (32.9)	
III	34 (40)	39 (53.4)	
IV	11 (12.9)	8 (11)	
Mean LVEF, %, mean (SD)	21 (7.5)	19.7 (8.2)	0.3
Etiology, n (%)			0.9
Ischemic	47 (55.3)	40 (54.8)	
Nonischemic	38 (44.7)	33 (45.2)	
Prevention, n (%)			0.2
Primary	81 (95.3)	66 (90.4)	
Secondary	4 (4.7)	7 (9.6)	
Chronic kidney disease, n (%)	28 (32.9)	31 (42.5)	0.2
Diabetes, n (%)	28 (32.9)	21 (28.8)	0.6

Dyslipidemia, n (%)	100 (68)	50 (86.5)	0.7
Arterial hypertension, n (%)	45 (52.9)	36 (49)	0.6
Peripheral artery disease, n (%)	13 (15.3)	12 (16.4)	0.8
Chronic obstructive pulmonary disease, n (%)	7 (8)	3 (4.1)	0.3
Active smoking, n (%)	63 (74.1)	49 (67.1)	0.3
Stroke, n (%)	6 (7.1)	8 (11)	0.4
Transient ischemic attack, n (%)	3 (4.1)	3 (4.1)	0.8
Coronary artery disease, n (%)	53 (62)	43 (58.9)	0.7
Myocardial infarction, n (%)	40 (47.1)	31 (42.5)	0.6
ST-elevation myocardial infarction	35 (41.2)	22 (30.1)	0.1
Non-ST elevation myocardial infarction	13 (15.3)	12 (16.4)	0.8
Percutaneous coronary intervention, n (%)	42 (49.4)	35 (48)	0.9
Coronary artery by-pass graft, n (%)	13 (15.3)	13 (17.8)	0.7
Valvular heart disease (moderate or severe), n (%)	43 (50.6)	52 (71.2)	0.008
Mitral regurgitation	40 (47.1)	43 (58.9)	0.1
Mitral stenosis	0 (0)	1 (1.4)	0.3
Tricuspid regurgitation	24 (28.2)	30 (41.1)	0.09
Aortic stenosis	4 (4.7)	8 (11)	0.1
Aortic regurgitation	4 (4.7)	6 (8.2)	0.4
Mean VO ₂ max, l/min, mean (SD)	16.6 (5)	14 (4.4)	0.01
Electrophysiology characteristics			
AVB, n (%)			0.7
I°	0 (0)	0 (0)	
II°	0 (0)	4 (40)	
III°	1 (100)	6 (60)	
SND	0 (0)	1 (1.4)	0.3
Heart rhythm disorders and ablation procedures			
Ventricular arrhythmias, n (%)	31 (35.5)	35 (48)	0.1
VT/VF	30 (35.3)	34 (46.6)	0.1

ES	3 (3.5)	4 (5.5)	0.6
VEBs	2 (2.4)	3 (4.1)	0.5
Atrial fibrillation, n (%)	38 (44.7)	41 (56.2)	0.2
Paroxysmal	20 (23.5)	22 (30.1)	0.3
Sustained	18 (21.2)	19 (26)	0.5
Atrial flutter, n (%)	11 (12.9)	7 (9.6)	0.5
Other SVT, n (%)	4 (4.7)	2 (2.7)	0.5
Ablation, n (%)	8 (9.4)	18 (24.7)	0.01
PVI	1 (1.2)	5 (6.9)	0.06
AVN	0 (0)	8 (11)	0.002
CTI	3 (3.5)	2 (2.7)	0.8
VT	3 (3.5)	4 (5.5)	0.6
VEBs	1 (1.2)	0 (0)	0.4
AVNRT	1 (1.2)	0 (0)	0.4

Abbreviations: see [Table S1](#)

Table S3. Comparison of clinical, electrophysiology characteristics and heart rhythm disorders and ablation procedures of patients with end-stage heart failure (HF) with CIED who underwent qualification procedure for heart transplantation in 2018–2019 according to sudden cardiac death prevention

Prevention	Primary (n = 147)	Secondary (n = 11)	P-value
Clinical characteristics			
Age, years, mean (SD)	55.3 (9.8)	47.5 (12.7)	0.01
Male sex, n (%)	131 (89.1)	9 (81.8)	0.5
NYHA, n (%)			0.4
I	5 (3.4)	0 (0)	
II	57 (38.8)	4 (36.4)	
III	69 (46.9)	4 (36.4)	
IV	16 (10.9)	3 (27.3)	
LVEF, %, mean (SD)	20.2 (7.9)	24.8 (9.1)	0.07
Etiology, n (%)			0.6
Ischemic	80 (54.4)	7 (64.6)	

Nonischemic	67 (45.6)	4 (36.4)	
Chronic kidney disease, n (%)	53 (36.1)	6 (54.6)	0.2
Diabetes, n (%)	45 (30.6)	4 (36.4)	0.7
Dyslipidemia, n (%)	100 (68)	6 (54.6)	0.4
Arterial hypertension, n (%)	76 (51.7)	5 (46)	0.7
Peripheral artery disease, n (%)	24 (16.3)	1 (9.1)	0.5
Chronic obstructive pulmonary disease, n (%)	8 (5)	2 (18.2)	0.09
Active smoking, n (%)	104 (70.6)	8 (72.7)	0.9
Stroke, n (%)	14 (9.5)	0 (0)	0.3
Transient ischemic attack, n (%)	6 (4.1)	0 (0)	0.5
Coronary artery disease, n (%)	88 (60)	8 (72.7)	0.4
Myocardial infarction, n (%)	65 (44.2)	6 (54.6)	0.5
ST-elevation myocardial infarction	52 (35.4)	5 (45.5)	0.5
Non-ST elevation myocardial infarction	24 (16.3)	1 (9.1)	0.5
Percutaneous coronary intervention, n (%)	71 (48.3)	6 (54.6)	0.7
Coronary artery by-pass graft, n (%)	25 (17)	1 (9.1)	0.5
Valvular heart disease (moderate or severe), n (%)	88 (59.9)	7 (63.6)	0.8
Mitral regurgitation	76 (51.7)	7 (63.6)	0.4
Mitral stenosis	1 (0.7)	0 (0)	0.8
Tricuspid regurgitation	52 (35.4)	2 (18.2)	0.2
Aortic stenosis	10 (7)	2 (18.2)	0.2
Aortic regurgitation	9 (6.1)	1 (9.1)	0.7
VO ₂ max, l/min, mean (SD)	15.5 (4.9)	21 (5.2)	0.009
Electrophysiology characteristics			
Cardiac implantable electric device, n (%)			
ICD	81 (55.1)	4 (36.4)	0.2
CRT-D	66 (44.9)	7 (63.6)	0.2
AVB, n (%)			0.7
I°	0 (0)	0 (0)	
II°	4 (40)	0 (0)	

III°	6 (60)	1 (100)	
SND, n (%)	1 (0.7)	0 (0)	0.8
Heart rhythm disorders and ablation procedures			
Ventricular arrhythmias, n (%)	55 (37.4)	11 (100)	<0.001
VT/VF	53 (36.1)	11 (100)	<0.001
ES	6 (4.1)	1 (9.1)	0.4
VEBs	4 (2.7)	1 (9.1)	0.2
Atrial fibrillation, n (%)	74 (50.3)	5 (45.5)	0.8
Paroxysmal	40 (27.2)	2 (18.2)	0.5
Sustained	34 (23.1)	3 (27.3)	0.8
Atrial flutter, n (%)	18 (12.2)	0 (0)	0.2
Other SVT, n (%)	5 (3.4)	1 (9.1)	0.3
Ablation, n (%)	23 (15.7)	3 (27.3)	0.3
PVI	23 (15.7)	3 (27.3)	0.01
AVN	7 (4.8)	1 (9.1)	0.5
CTI	5 (3.4)	0 (0)	0.5
VT	6 (4.1)	1 (9.1)	0.4
VEBs	1 (0.7)	0 (0)	0.8
AVNRT	1 (0.7)	0 (0)	0.8

Abbreviations: see [Table S1](#)