Table S1. Baseline characteristics of non-repetitive and repetitive group

	Non-repetitive (*n* = 30)	Repetitive (*n* = 16)	*P*-value
Age	52.13 (14.70)	49.75 (16.39)	0.68
Sex – *n* (%)			
male	26 (87)	14 (88)	0.70
female	4 (13)	2 (12)	
BMI (kg/m^2)	27.71 (5.26)	26.65 (4.52)	0.51
History of HF – *n* (%)			
de novo	3 (10)	1 (6)	0.91
<1 year	3 (10)	2 (13)	0.81
1-5 years	5 (17)	4 (25)	0.77
>5 years	19 (63)	9 (56)	0.64
Rehospitalizations			
<1 month	0.20 (0.41)	0.25 (0.45)	0.79
1-3 months	0.37 (0.72)	0.31 (0.48)	0.90
3-6 months	0.50 (0.68)	0.38 (0.50)	0.71
>6 months	0.83 (1.02)	0.75 (1.00)	0.76
HF etiology – *n* (%)			
ischaemic	9 (30)	6 (38)	0.61
post MI	9 (30)	5 (31)	0.80
hypertensive	6 (20)	2 (13)	0.82
DCM	5 (17)	5 (31)	0.44

post myocarditis	8 (27)	3 (19)	0.81
VHD	4 (13)	4 (25)	0.56
toxin-induced cardiomyopathy	4 (13)	2 (13)	0.70
Concomitant diseases – *n* (%)			
AF	16 (53)	8 (50)	0.83
history of VT/VF	11 (37)	4 (25)	0.64
functional MR	23 (77)	16 (100)	0.04
TR	15 (50)	7 (44)	0.69
T2DM	8 (27)	3 (19)	0.81
AH	11 (37)	6 (38)	0.96
hypercholesterolaemia	12 (40)	6 (38)	0.87
CKD	9 (30)	4 (25)	0.99
COPD	0 (0)	1 (6)	0.75
post stroke/TIA	5 (17)	3 (19)	0.82
Pharmacotherapy – *n* (%)			
ACEI	11 (37)	7 (44)	0.64
ARB	2 (7)	2 (13)	0.93
ACEI/ARB	13 (43)	9 (56)	0.40
ARNI	5 (17)	2 (13)	0.96
beta-blockers	20 (67)	14 (88)	0.13
MRA	18 (60)	15 (94)	0.02
diuretics	22 (73)	13 (81)	0.55
ivabradine	4 (13)	1 (6)	0.81
digoxin	8 (30)	1 (7)	0.18
Simultaneous dobutamine infusion – *n* (%)	18 (60)	12 (75)	0.31
HF symptoms – *n* (%)			
breathlessness	19 (63)	3 (19)	0.01
orthopnoea	19 (63)	13 (81)	0.21
peripheral hypoperfusion	8 (27)	3 (19)	0.81
lung congestion	23 (77)	9 (56)	0.15
hepato-jugular reflux	6 (20)	6 (38)	0.20
peripheral oedema	20 (67)	10 (63)	0.78
third heart sound	3 (10)	2 (13)	0.81

hepatomegaly	10 (33)	10 (63)	0.06
oliguria	11 (37)	8 (50)	0.38
weight gain	17 (57)	8 (50)	0.67
Forrester class – *n* (%)			
warm-dry	7 (23)	8 (50)	0.07
warm-wet	17 (57)	5 (31)	0.18
cold-dry	0 (0)	1 (6)	0.75
cold-wet	6 (20)	2 (13)	0.82
Haemodynamic parameters			
SBP (mmHg)	107.5 (96.0-120.0)	108.5 (100.0-112.5)	0.63
DBP (mmHg)	70.0 (60.0-80.0)	70.0 (61.0-72.0)	0.34
HR (bpm)	81.5 (77.0-91.0)	83.0 (71.0-93.0)	0.69
Laboratory parameters			
NT-proBNP (pg/ml)	3517.5 (1987.0-6564.0)	1531.0 (505.0-3482.0)	0.17
D-dimers (mg/l)	744.00 (1.48-3767.00)	2.26 (0.32-777.45)	0.20
hs-cTnT (ug/l)	0.07 (0.02-1.80)	0.05 (0.02-0.19)	0.88
CK-MB mass (ug/l)	1.75 (1.00-5.30)	2.05 (1.20-2.95)	0.93
haemoglobin (g/dl)	13.40 (1.92)	13.83 (1.87)	0.47
RDW (%)	16.10 (14.60-17.30)	14.90 (13.70-16.70)	0.29
ferritin (g/l)	126.00 (49.00-189.00)	165.00 (59.90-313.00)	0.73
TSAT (%)	12.00 (8.70-16.50)	11.45 (9.65-21.25)	0.82
sodium (mmol/l)	136.00 (131.00-138.60)	136.50 (132.50-137.90)	0.93
potassium (mmol/l)	4.29 (0.83)	4.37 (0.71)	0.71
creatinine (umol/l)	1.32 (0.99-4.56)	1.35 (1.00-2.60)	0.79
eGFR (ml/min/1.73m^2)	62.00 (45.00-87.10)	76.50 (39.45-85.50)	0.84
fasting glucose (mmol/l)	92.00 (78.00-111.00)	89.00 (77.00-100.00)	0.62
CRP (mg/l)	11.10 (4.80-22.00)	9.40 (4.20-12.40)	0.28
TC (mmol/l)	93.85 (59.59)	92.45 (55.38)	0.94
LDL-C (mmol/l)	60.05 (43.62)	57.46 (37.57)	0.85
HDL-C (mmol/l)	21.33 (16.23)	20.41 (13.44)	0.85
TG (mmol/l)	70.50 (50.00-102.00)	65.00 (42.00-87.00)	0.32
bilirubin (mg/dl)	2.60 (1.50-5.85)	2.13 (1.60-5.20)	0.98
ALT (U/l)	29.50 (21.00-42.00)	28.40 (22.50-70.65)	0.97
AST (U/l)	36.00 (24.00-52.00)	32.50 (28.00-46.50)	0.93

Electrocardiographic parameters			
QRS (ms)	116.0 (100.0-150.0)	101.0 (95.0-126.0)	0.14
sinus rhythm – *n* (%)	18 (60)	13 (81)	0.14
LBBB – *n* (%)	6 (21)	1 (6)	0.40
RBBB – *n* (%)	4 (14)	0 (0)	—
VE – *n* (%)	9 (31)	2 (13)	0.31
CRT/BiV – *n* (%)	7 (23)	2 (13)	0.69
Echocardiographic parameters			
LVEF (%)	19.30 (6.81)	21.88 (6.38)	0.21
TAPSE (mm)	13.0 (11.0-15.0)	12.5 (11.0-14.0)	0.86
LVEDD (mm)	71.10 (8.17)	69.33 (9.72)	0.55
LVESD (mm)	62.0 (58.0-69.0)	58.0 (53.0-70.0)	0.22
LVEDV (ml)	263.0 (205.0-320.0)	253.5 (200.0-270.0)	0.41
LVESV (ml)	205.5 (170.0-280.0)	192.0 (174.0-209.0)	0.34
IVC (mm)	24.52 (6.13)	25.20 (5.31)	0.71
SPAP (mmHg)	48.85 (16.07)	52.80 (17.50)	0.48
diastolic disfunction – *n* (%)	1 (3)	1 (7)	0.80
WMA – *n* (%)	11 (38)	8 (53)	0.33
FMR-VCW (mm)	5.28 (1.72)	6.20 (1.97)	0.18
LAV (ml)	43.0 (33.0-67.5)	37.0 (29.0-45.0)	0.36

Data are presented as the number of subjects (*n*) in percentage and mean (SD) or median (Q1-Q3), depending on their distribution

Abbreviations: ACEI – angiotensin converting enzyme inhibitor, AF – atrial fibrillation, AH – arterial hypertension, ARB – angiotensin receptor blocker, ALT – alanine transaminase, ARNI – angiotensin receptor/neprilysin inhibitor, AST – asparagine transaminase, BMI – body mass index, BNP – B-type natriuretic peptide, CK-MB – subunit MB of creatine kinase, CKD – chronic kidney disease, COPD – chronic obstructive pulmonary disease, CRP – C-reactive protein, CRT/BiV – cardiac resynchronization therapy/biventricular stimulation, DBP – diastolic blood pressure, DCM – dilated cardiomyopathy, eGFR – estimated glomerular filtration rate, FMR-VCW – functional mitral regurgitation – vena contracta width, HDL-C – high-density lipoprotein cholesterol, HF – heart failure, HR – heart rate, hs-cTnT – high sensitive cardiac troponin T, IVC – inferior vena cava, LAV – left atrium volume, LBBB – left bundle branch block, LDL-C – low-density lipoprotein cholesterol, LVEDV – left ventricle end-diastolic volume, LVEDD – left ventricle end-diastolic

diameter, LVESD – left ventricle end-systolic diameter, LVESV – left ventricle end-systolic volume, LVEF –

left ventricle ejection fraction, MI – myocardial infarction, MRA – mineralocorticoid receptor antagonist, NT-

proBNP – N-terminal prohormone of B-type natriuretic peptide, RBBB – right bundle branch block, RDW – red

cell distribution width, SBP – systolic blood pressure, SPAP – systolic pulmonary artery pressure, T2DM – type-

2 diabetes mellitus, TAPSE – tricuspid annular plane systolic excursion, TC – total cholesterol, TG –

triglycerides, TIA – transient ischaemia attack, TR – tricuspid regurgitation, TSAT – transferrin saturated with

iron, VE – ventricle extrasystole, VF – ventricular fibrillation, VHD – valvular heart disease, VT – ventricular

tachycardia, WMA – wall movement abnormalities

Table S2. Baseline parameters predicting the composite endpoint in univariate analysis

	Univariate	
	OR (95% CI)	***P*-value**
Rehospitalizations		
<1 month	6.29 (1.16-34.00)	0.03
Pharmacotherapy		

beta-blockers	0.21 (0.05-0.91)	0.04
MRA	0.17 (0.04-0.75)	0.02
diuretics	0.05 (0.01-0.46)	0.01
Simultaneous dobutamine infusion	9.00 (2.27-35.64)	0.002
HF symptoms		
dyspnoea	5.20 (1.48-18.29)	0.01
orthopnoea	5.36 (1.25-23.04)	0.02
Laboratory parameters		
sodium	0.86 (0.74-0.99)	0.03

Abbreviations: see Table S1, CI – confidence interval, OR – odds ratio

Table S3. Symptoms presented in the non-repetitive and repetitive group before the first and

after (the last) levosimendan infusion – differences between time points compared with

McNemar's test

Symptoms – *n* (%)	Non-repetitive (*n* = 30)			Repetitive (*n* = 16)		
	At baseline	After infusion	*P*-value	At baseline	After the last infusion	*P*-value
Breathlessness	11 (52)	5 (24)	0.07	3 (19)	1 (6)	0.62
Orthopnoea	11 (52)	5 (24)	0.04	13 (81)	4 (25)	0.008
Hypoperfusion	5 (24)	5 (24)	0.68	3 (19)	2 (13)	1.00
Lung congestion	16 (72)	8 (36)	0.03	9 (56)	4 (25)	0.13
Hepato-jugular reflux	1 (6)	3 (18)	0.48	6 (38)	0 (0)	1.00
Edema	14 (61)	10 (43)	0.29	10 (63)	3 (19)	0.02
Third heart sound	0 (0)	2 (10)	1.00	2 (13)	0 (0)	1.00
Hepatomegaly	4 (19)	8 (38)	0.29	10 (63)	3 (19)	0.02

Data are presented as a number of subjects (*n*) in percentage

Table S4. Laboratory and electrocardiographic parameters in the non-repetitive and repetitive group before the first and after (the last)

levosimendan infusion

	Non-repetitive (*n* = 30)			Repetitive (*n* = 16)		
	At baseline	After infusion	*P*-value	At baseline	After the last infusion	*P*-value
Laboratory parameters						
NT-proBNP (pg/ml)	3517.5 (1987.0-6564.0)	4250.0 (2122.0-7154.0)	0.26	1531.0 (505.0-3482.0)	2983.0 (652.0-3896.0)	0.78
hs-cTnT (ug/l)	0.07 (0.02-1.80)	0.1 (0.0-0.3)	0.18	0.05 (0.02-0.19)	0.1 (0.0-0.1)	0.31
haemoglobin (g/dl)	13.40 (1.92)	11.97 (2.05)	<0.001	13.67 (1.99)	12.64 (1.70)	0.06
RDW (%)	16.10 (14.60-17.30)	17.6 (16.2-20.7)	<0.001	14.90 (13.70-16.70)	15.1 (13.9-16.0)	0.14
sodium (mmol/l)	136.00 (131.00-138.60)	134.6 (130.5-138.0)	0.12	136.50 (132.50-137.90)	136.0 (132.0-138.9)	0.40
potassium (mmol/l)	4.29 (0.83)	4.60 (0.51)	0.07	4.31 (0.74)	4.12 (0.54)	0.38
creatinine (umol/l)	1.32 (0.99-4.56)	1.2 (1.0-1.9)	0.59	1.35 (1.00-2.60)	1.2 (0.9-1.4)	0.13
eGFR (ml/min/1.73m2)	62.00 (45.00-87.10)	59.0 (41.2-90.0)	0.96	76.50 (39.45-85.50)	66.0 (58.5-80.4)	0.59
CRP (mg/l)	11.10 (4.80-22.00)	28.0 (7.6-70.0)	0.05	9.40 (4.20-12.40)	9.1 (2.0-46.5)	0.95
bilirubin (mg/dl)	2.60 (1.50-5.85)	2.2 (1.2-4.8)	0.31	2.13 (1.60-5.20)	1.9 (0.9-5.5)	0.53
ALT (U/l)	29.50 (21.00-42.00)	31.0 (23.0-55.0)	0.66	28.40 (22.50-70.65)	22.4 (20.0-28.0)	0.79
AST (U/l)	36.00 (24.00-52.00)	25.0 (19.0-54.0)	0.62	32.50 (28.00-46.50)	21.2 (16.0-39.0)	0.46
Electrocardiographic parameters						
sinus rhythm – *n* (%)	18 (60)	16 (53)	0.95	13 (81)	13 (81)	0.68
LBBB – *n* (%)	6 (20)	6 (20)	0.90	1 (6)	2 (13)[a]	1.00

RBBB – *n* (%)	4 (13)	4 (13)	0.94	0 (0)	0 (0)	–
VE – *n* (%)	9 (31)	5 (16)	0.44	2 (13)	1 (7)	0.95

Data are presented as the number of subjects (*n*) in percentage and mean (SD) or median (Q1-Q3), depending on their distribution.

[a] *de novo* LBBB

Abbreviations: see Table S1.

Table S5. Echocardiographic parameters in the repetitive group before the first and before the last levosimendan infusion

	Repetitive (*n* = 16)		
	At baseline	**Before the last infusion**	***P*-value**
Echocardiographic parameters			
LVEF (%)	22.00 (6.58)	22.00 (8.15)	0.45
TAPSE (mm)	12.67 (2.69)	12.64 (2.80)	0.87
LVEDD (mm)	69.14 (10.06)	67.20 (9.41)	0.86
LVESD (mm)	57.0 (53.0-70.0)	55.0 (51.0-69.0)	0.78
LVEDV (ml)	251.67 (95.79)	223.00 (78.90)	0.70
LVESV (ml)	194.00 (81.26)	179.83 (72.37)	0.83
IVC (mm)	25.29 (5.50)	22.20 (4.21)	0.43
SPAP (mmHg)	51.93 (17.82)	48.70 (18.14)	0.93
FMR-VCW (mm)	6.07 (1.98)	5.88 (1.90)	0.94
LAV (ml)	36.5 (27.5-59.0)	41.0 (29.0-143.0)	0.58

Data are presented as mean (SD) or median (Q1-Q3), depending on their distribution

Abbreviations: see Table S1.