Supplementary material

Supplementary Table 1: INTERMACS patient profiles

Adult INTERMACS profile	Official description	NYHA functional class	Modifier options
Level 1	Crash and burn	IV	TCS, A
Level 2	Sliding fast on inotropes	IV	TCS, A
Level 3	Stable, depending on inotropes	IV	A, FF
Level 4	Resting symptoms on oral therapy at home	Ambulatory IV	A, FF
Level 5	Housebound	Ambulatory IV	A, FF
Level 6	Walking wounded	IIIB	A, FF
Level 7	Advanced class III	III	A

NYHA: New York Heart Association; TCS: temporary circulatory support; A: arrhythmia; FF: Frequent Flyer.

Supplementary Table 2: Markers and risk scores specifically for post-left ventricular assist device implant right ventricular failure

Recommendation	Class	Level	References
Imaging risk markers for post-LVAD RV failure include RVEDD, RV short/long axis ratio; RVEDD/LVEDD, RA diameter, RVFAC %, RV ejection time, RV free wall and global strain, RV E/e', TAPSE, TR, TV annulus dimension, RV volume, timing interval between the onset and the cessation of tricuspid regurgitation flow corrected for heart rate (TRDc), sPAP, central venous pressure, LVEDD, LVESD, LA volume, LA diameter/LVEDD ratio.	IIa	B	[160, 162, 514-519]
Haemodynamic risk markers for post-LVAD RV failure include RVSWI, TPG, pulmonary vascular resistance, PAPi, PA compliance index, CI, SBP	IIa	B	[55, 520, 521]
Risk scores for post-LVAD RV failure include the Berlin Score, the Michigan RV failure risk score, the Penn RVAD risk score, the Utah RV risk score, the Kormos risk score, the Pittsburgh decision tree, the CRITT score, and the Pittsburgh Bayesian model, but in general they have poor discrimination.	IIa	B	[160, 164, 176, 178, 469, 512, 522-524]

RV**:** right ventricular; LVAD: left ventricular assist device; RVEDD: right ventricular end diastolic diameter; LVEDD: left ventricular end-diastolic diameter; RA: right atrium; RVFAC: right ventricular fractional area change; TAPSE: tricuspid annular plane systolic excursion; TR: tricuspid regurgitation: ; TV: tricuspid valve; sPAP: systolic pulmonary artery pressure; LVESD: left ventricular end-systolic diameter; LA: left atrium; RVSWI: right ventricular stroke work index; TPG: transpulmonary gradient; PAPi: pulmonary artery pulsatility index; PA: pulmonary artery; CI: cardiac index; SBP: systolic blood pressure

Supplementary Table 3: Major risk factors and their predictive values for right ventricular failure after implantation of a left ventricular assist device [77]

Variable [units]	Components of the combined variables	Cut-off value	AUC	Predictive value (%)	
			(95% CI)	Positive	Negative
CVP/PCWP [166, 178]	Central venous pressure/pulmonary capillary wedge pressure	0.63	0.81 (0.68-0.96)	64.5	53.3
PSSrL*ΔPRV-RA [mmHg/s] [158]	Peak systolic longitudinal strain rate; Pressure gradient between RV and RA	24	0.98 (0.97-0.99)	97 (84-99)	87 (77-93)
Michigan RVFRS +PSLRV [162]	Michigan RVF risk score components + RV peak longitudinal strain	-	0.77	-	-
CRITT score for BiVAD need [512]	CVP >15; severe RV dysfunction, preoperative intubation, severe tricuspid regurgitation; tachycardia >100	≤1 ≥4	0.80 (0.72- .88)	- 80*	93.1 -
Total RVF score for BiVAD need [166]	CVP/PCWP >0.5; BSA ≤1.4 m²; BnP ≥1200 pg/ml; LVEDD ≥62 mm; preoperative haemofiltration	20*	0.91 (0.80-1.00)	-	-
Modified LV echocardiogram for RVF score [519]	LVEDD; LVEF; LAD/LVEDD; SWIRV; bilirubin (serum); albumin (serum)	≤3 ≥7	0.79	- 93.4	97.1 -

AUC: area under the curve; RVF: right ventricular failure; CVP: central venous pressure; PSSrL: peak systolic longitudinal strain rate; RV: right ventricle; RA: right atrium; RVFRS: right ventricular failure risk score   ; PCWP: pulmonary capillary wedge pressure; BnP: brain natriuretic peptide; BiVAD: biventricular assist device; BSA: body surface area; LVEDD: left ventricular end-diastolic diameter; LVEF: left ventricular ejection fraction; LAD: left atrial diameter; SWI: stroke work index.

* 80% sensitivity and 80% specificity for prediction of RVF.

Supplementary Table 4: Selected echocardiographic parameters indicating poor right ventricular function [77]

Variable	Cut-off value	Ref
Right ventricular end-diastolic short/long axis ratio	≥0.6	[160] [158]
Right ventricular ejection fraction	<34 %	[158]
Severe right ventricular dysfunction	-	[164, 512, 522]
TAPSE (tricuspid annulus peak systolic excursion)	<14 mm	[158, 162]
TAPSm (tricuspid lateral annulus peak systolic wall motion velocity)	<8 cm/s	[158]
PSSL (lateral right ventricular peak longitudinal strain)	<-9.6 %	[162]
PSSrL (peak systolic longitudinal strain rate)	<0.6 s	[158]
LVEDD (left ventricular end-diastolic diameter)	≤62 mm	[166]
TR (tricuspid regurgitation severity) [degree]	≥2	[158, 160, 162, 512]
Right ventricle/left ventricle end-diastolic diameter ratio	≥0.75	[525]
TRDc (tricuspid regurgitation flow time corrected for heart rate)	<461	[516]

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