Supplementary Table S1: Longitudinal data of inflow cannula angle from first standing to 6 and 12 months post-implantation*

IC angle (°) median (IQR) or mean±SD	**First standing** POD: 33.5 (41.0) days	**6 months** POD: 187.0 (36.0) days	**12 months** POD: 354.0 (54.5) days	**p-value**
All patients (n=23)	13.4 (11.4)	10.5 (10.4)	10.5 (12.4)	0.96
No stroke (n=18)	11.9±10.4	11.8±10.7	11.8±11.1	0.99
Ischemic stroke (n=3)	-3.9±13.6	-8.2±13.7	-7.0±15.8	0.77
Intracranial Hemorrhage (n=4)	11.4 (25.8)	10.5 (25.7)	11.6 (27.8)	0.47
Absolute change in IC angle (°) median (IQR) or mean±SD	**First standing to 6 months**	**6 to 12 months**	**First standing to 12 months**	**p-value**
All patients (n=23)	0.5 (4.2)	0.1 (5.3)	0.1 (9.1)	0.74
No stroke (n=18)	-0.07±4.3	-0.02±3.6	-0.09±5.2	0.99
Ischemic stroke (n=3)	-4.3±10.6	1.2±3.1	-3.0±13.7	0.50
Intracranial Hemorrhage (n=4)	1.7±3.3	3.1±3.1	4.9±5.9	0.19

*Only patients with 3 appropriate X-rays and measurable inflow cannula were included in this sub-analysis

IC, inflow cannula; POD, postoperative day

Supplementary Table S2: Baseline demographics, hemodynamic and laboratory parameters stratified by inflow cannula angle <10° vs. >10°

n (%), median (IQR) or mean±SD	**IC angle <10° (n=15)**	**IC angle >10° (n=20)**	**p-value**
Patient characteristics			
Sex (female)	3 (13.3)	1 (5.0)	0.56
Age at implant (years)	63.3±7.0	62.2±9.1	0.69
BMI (kg/m^2)	28.1±6.2	29.7±4.3	0.36
INTERMACS level			0.95
1	3 (20.0)	4 (20.0)	
2	2 (13.3)	1 (5.0)	
3	2 (13.3)	4 (20.0)	
4–7	8 (53.0)	11 (55.0)	
Cardiomyopathy			0.48
Ischemic	8 (53.3)	12 (60.0)	
Dilated	7 (46.7)	8 (40.0)	
Strategy			0.77
Destination therapy	7 (46.7)	7 (35.0)	
Bridge to transplantation	3 (20.0)	6 (30.0)	
Bridge to candidacy	5 (33.3)	7 (35.0)	
Implantation technique, minimal invasive	4 (26.7)	5 (25.0)	0.91
Intraoperative bypass support			1.00
HLM	14 (93.3)	19 (95.0)	
Off pump	1 (6.7)	1 (6.7)	
Prae ECLS	3 (20.0)	4 (20.0)	1.00
Stroke history	1 (6.7)	6 (31.6)	0.10
Diabetes	5 (35.7)	6 (30.0)	0.73
Hypertension	6 (42.9)	14 (73.7)	0.15
Atrial fibrillation	9 (60.0)	12 (63.2)	0.85
Laboratory parameters			
Hemoglobin (g/dl)	10.5±1.5	11.0±1.1	0.23
Lactate dehydrogenase (U/l)	251.1±74.3	251.1±53.4	0.99
Total bilirubin (mg/dl)	0.5 (0.4)	0.6 (0.3)	0.83
Serum creatinine (mg/dl)	1.2 (0.4)	0.9 (0.5)	0.22
C-reactive protein (mg/dl)	4.2 (7.7)	1.7 (2.1)	0.14
Leucocytes (g/dl)	9.3±3.0	7.5±2.3	0.06
INR	2.4±0.4	2.3±0.4	0.81
NT-proBNP (pg/mL)	2245.0 (2645.5)	2052.0 (1730.0)	0.31
Hemodynamic parameters			
Pump speed (rpm)	5535±322	5370±263	0.11
Central venous pressure (mmHg)	13.1±2.8	10.9±2.4	0.02
Mean pulmonary artery pressure (mmHg)	29.7±10.1	29.2±6.4	0.87
Pulmonary capillary wedge pressure (mmHg)	18.0 (5.0)	13.0 (5.0)	0.23
Mean arterial blood pressure (mmHg)	76.5 (14.7)	75.0 (7.0)	0.56
Cardiac index (l/min/m^2)	2.1±0.3	2.2±0.1	0.63

Hemodynamic parameters were obtained before discharge from the intensive care unit during index hospitalization in 28 patients (n=10 IC angle <10° and n=18 IC angle >10°); Laboratory parameters assessed at the time of the first standing X-ray.

BMI, body mass index; INTERMACS, Interagency Registry for Mechanically Assisted Circulatory Support; HLM, heart lung machine; ECLS, extracorporeal life support; IC, inflow cannula; INR, International Normalized Ratio; NT-proBNP, N-terminal pro-brain natriuretic peptide

Supplementary Table S3: Individual and overall clinical parameters at the day of ischemic stroke

Clinical parameters at the day of ischemic stroke	**Patient #1**	**Patient #2**	**Patient #3**	**Patient #4**	**Patient #5**	**Patient #6**	**Patient #7**	**Patient #8**	**All patients (n=8)** n (%), median (IQR) or mean±SD
POD event	40	207	463	355	97	18	27	222	178.6±164.5
Device position parameters									
POD first standing X-ray (days)	61	47	36	76	32	11	36	32	41.4±19.9
IC angle (°)	7.9	4.1	-18.3	8.8	-12.1	9.7	-2.3	not visible	4.1 (20.9)
Anticoagulation therapy									
Regime at the event	Heparin	VKA	Heparin + VKA (bridging)	Heparin	VKA	VKA	Heparin	LMWH	3 (37.5) Heparin 1 (12.5) Heparin+VKA 3 (37.5) VKA 1 (12.5) LMWH
Previous sub-therapeutic anticoagulation*	no	no	no	yes	unknown	no	no	no	6 (75.0) no 1 (12.5) yes 1 (12.5) unknown
ASA daily dose at the event (mg)	100	100	100	100	100	100	100	100	100±0.0
Previous modification of ASA therapy	no	no	no	no	no	no	no	no	8 (100) no
Laboratory parameters									
Hemoglobin (g/dl)	8.9	12.3	9.7	8.4	n.a.	11.7	9.9	9.5	10.1±1.4
Lactate dehydrogenase (U/l)	515	273	189	n.a.	n.a.	243	220	273	285.5±47.7
Total bilirubin (mg/dl)	0.7	0.5	0.8	1.8	n.a.	0.8	0.3	0.8	0.8±0.5
Serum creatinine (mg/dl)	3.2	1.3	0.9	4.0	n.a.	1.1	0.7	1.7	1.8±1.3
C-reactive protein (mg/dl)	8.1	26.6	3.4	31.9	n.a.	7.1	9.6	7.0	8.1 (19.6)
Leucocytes (g/dl)	6.9	15.6	8.5	13.9	n.a.	7.3	7.3	15.9	11.2±4.9
INR	n.a.	2.0	1.9	1.9	n.a.	2.1	n.a.	n.a.	2.0±0.1
aPTT (sec)	64.5	n.a.	56.0	51.7	n.a.	49.5	49.2	n.a.	54.2±6.4
NT-proBNP (pg/mL)	1843	5888	12680	n.a.	n.a.	1454	2245	4276	4731±4242
Hemodynamic parameters									
Mean arterial blood pressure (mmHg)	80	70	70	65	88	79	89	90	78.9±9.7
Adverse events									
Previous adverse events	no	Major infection	GIB	Major infection	no	RHF	no	GIB, major infection	3 (37.5) no 5 (62.5) yes
Previous readmissons	no	no	yes	no	no	yes	no	yes	5 (62.5) no 3 (37.5) yes

*Based on regime at the event any INR<2, aPTT<45sec or anti-Xa<0.2 IU one week preceding the event was considered sub-therapeutic

POD, postoperative day; IC, inflow cannula; aPTT, activated Partial Thromboplastin Time; ASA, acetylicylic acid; n.a., not available; LMWH, low-molecular weight heparin (enoxaparin); VKA, vitamin K antagonist; GIB, gastrointestinal bleeding; RHF, right heart failure