

SUPPLEMENTAL MATERIAL

Supplemental Methods

Data S1. Search string.

((mechanical thrombectomy ischemic stroke [Title/Abstract]) OR (endovascular thrombectomy ischemic stroke [Title/Abstract])) OR (large vessel occlusion [Title/Abstract]) AND ((ischemic heart disease [Title/Abstract]) OR (Percutaneous Coronary Intervention [Title/Abstract]) OR (heart failure [Title/Abstract]) OR (endocarditis [Title/Abstract]) OR (infective endocarditis [Title/Abstract]) OR (cardiac tumors [Title/Abstract]) OR (atrial myxoma [Title/Abstract]) OR(TAVI[Title/Abstract]) OR (Transcatheter Aortic Valve Implantation [Title/Abstract]) OR (atrial fibrillation[Title/Abstract]) OR (atrial flutter [Title/Abstract]) OR (cardiac arrest[Title/Abstract]) OR (aortic dissection[Title/Abstract]) OR (aortic aneurysm[Title/Abstract]) OR (congenital heart disease [Title/Abstract]) OR (heart valve disease[Title/Abstract]) OR (heart arrhythmia [Title/Abstract]) OR (cardiac surgery [Title/Abstract]))).

Table S1. Left ventricular assist device and total artificial heart and mechanical thrombectomy.

Reference	Study type	Total number of patients*	Age (yo)	Number of patients treated with MT (%)	Patients with mRS 0-2 at 90 days (%)	Patients with mRs of 6 at 90 days (%)	Patients with sICH (%)	Patients with successful recanalisation (mTICI 2b-3) (%)	Summary of study findings
Al-Mufti et al. 2016 ¹²⁴	Case series	5	mean 61 (range: 21-65)	5 (100.0%)	2 (40.0%)	2 (40.0%)	NA	2 (40.0%)	MT may be safe and improve clinical outcomes in patients with LVAD
Kawamura et al. 2022 ¹²⁵	Case series	9	mean 52 (range: 27-60)	9 (100.0%)	6 (66.7%)	1 (11.1%)	0 (0.0%)	8 (88.9%)	MT may be safe and effective in patients with LVAD
Le Picault et al. 2021 ¹²⁶	Case report	2	44 and 35	2 (100.0%)	2 (100.0%)	0 (0.0%)	0 (0.0%)	2 (100.0%)	MT may be safe and effective in patients with LVAD
Rice et al. 2018 ¹²⁷	Observational study	16	mean 56.7 (range: 27-76)	5 (31.0%)	NA	2 (40.0%)	NA	5 (100.0%)	MT may be safe and effective in patients with LVAD
Rettenmaier et al. 2020 ¹²⁸	Observational study	19	mean 55.8	8 (42.1%)	NA	NA	4/19 (21.1%)	8 (100.0%)	MT may be safe and

			(±sd: 12.0)				(not specifically assessed in patients with MT)		effective in patients with LVAD
Ryu et al. 2018 ¹²⁹	Literature review and case series	13	mean 43.8 (range: 8-69)	13 (100%)	6/11 (54.5%)	1/11 (9.1%)	NA	4/4 (100%)	MT may be safe and effective in patients with LVAD
Whitaker- Lea et al. 2020 ¹³⁰	Retrospective observational single-center cohort study	31	NA	4 (12.9%)	NA	NA	NA	NA	Neurologic complications are frequent after LVAD implantation
Hak et al. 2021 ¹³¹	Case report	1	14	1 (100%)	1 (100%)	0 (0%)	0 (0%)	1 (100%)	MT may be safe and effective in pediatric patients with LVAD
Suzuki et al. 2021 ¹³²	Case series	12	NA	4 (33.3%)	NA	1 (25%)	1 (25%)	4 (100%)	MT may be safe and effective in patients with LVAD
Ibeh et al. 2023 ¹³³	Retrospective observational multicenter cohort study	1,633,234 AIS patients of which 794 (0.05%)	no LVAD: mean 70.4 (±sd: 15.1)	no LVAD: 1% LVAD: 4%*	NA	(only intra- hospital mortality data available as aOR)	NA	NA	higher mortality rates after MT in AIS patients with post-

		with LVAD	LVAD: mean 57.7 (±sd: 15.3)*			pre-existing LVAD vs. no LVAD: aOR=1.06 (95%CI=0.29-3.91) post-operative LVAD vs. no LVAD: aOR=8.66 (95%CI=1.46-51.3)*			operative LVAD, but not with pre-existing LVAD, vs. patients without LVAD
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aOR: adjusted odds ratio; LVAD: left-ventricular assist device; MT: mechanical thrombectomy; sd: standard deviation; mRS: modified Rankin Scale; sICH: symptomatic intracranial haemorrhage; mTICI: modified Treatment in Cerebral Ischemia score.

*otherwise differently specified, it indicates the n. of patients with acute ischemic stroke and LVAD.

Table S2. Congenital heart disease and mechanical thrombectomy.

Reference	Study type	Total number of patients	Age (yo)	Number of patients treated with MT (%)	Patients with mRS 0-2 at 90 days (%)	Patients with mRS of 6 at 90 days (%)	Patients with sICH (%)	Patients with successful recanalisation (mTICI 2b-3) (%)	Summary of study findings
Lu et al. 2020 ¹³⁶	Case report	1	38	1 (100.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	1 (100.0%)	MT may be safe and effective in adult patients with CHD
Souto et al. 2019 ¹³⁷	Case report	1	4	1 (100.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	1 (100.0%)	MT may be safe and effective in pediatric patients with CHD
Gerstl et al. 2016 ¹³⁸	Case report	1	3	1 (100.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	1 (100.0%)	MT may be safe and effective in pediatric patients with CHD
Nasr et al. 2021 ¹³⁹	Case report	1	2	1 (100.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	1 (100.0%)	MT may be safe and effective in pediatric patients with CHD

MT: mechanical thrombectomy; mRS: modified Rankin Scale; sICH: symptomatic intracranial haemorrhage; mTICI: modified Treatment in Cerebral Ischemia score.

Table S3. Cardiac tumours and mechanical thrombectomy.

Reference	Study type	Total number of patients	Age (yo)	Number of patients treated with MT (%)	Patients with mRS 0-2 at 90 days (%)	Patients with mRs of 6 at 90 days (%)	Patients with sICH (%)	Patients with successful recanalisation (mTICI 2b-3) (%)	Summary of study findings
Bedoya et al. 2021 ¹⁴⁶	Case report	1	43	1 (100%)	NA	NA	0 (0%)	1 (100%)	MT may be safe and improve clinical outcomes in AIS patients with CATs
Garcia-Ptacek et al. 2014 ¹⁴⁷	Case report	2	34 and 45	2 (100%)	1 (50%)	0 (0%)	0 (0%)	1 (50%)	MT may be safe and improve clinical outcomes in AIS patients with CATs
Santos et al. 2014 ¹⁴⁸	Case report	1	34	1 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	MT may be safe and improve clinical outcomes in AIS patients with CATs

Stefanou et al. 2018 ¹⁴⁹	Retrospective cohort study	8	mean 61.7 (±sd: 17.5)	1 (12.5%)	1 (100%)	0 (0%)	0 (0%)	1 (100%)	MT may be safe and improve clinical outcomes in AIS patients with CATs
Tadi et al. 2019 ¹⁵⁰	Case report	1	23	1 (100%)	1 (100%)	0 (0%)	0 (0%)	1 (100%)	MT may be safe and improve clinical outcomes in AIS patients with CATs
Tejada et al. 2014 ¹⁵¹	Case report	1	64	1 (100%)	1 (100%)	0 (0%)	1 (100%)	1 (100%)	MT may be safe and improve clinical outcomes in AIS patients with CATs
Van de Wijngaard et al. 2014 ¹⁵²	Case report	1	14	1 (100%)	1 (100%)	0 (0%)	0 (0%)	1 (100%)	MT may be safe and improve clinical outcomes in AIS patients with CATs

Vega et al. 2015 ¹⁵³	Case report	1	11	1 (100%)	1 (100%)	0 (0%)	0 (0%)	0 (0%)	MT may be safe and improve clinical outcomes in AIS patients with CATs
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AIS: acute ischemic stroke; CATs: cardiac tumors; MT: mechanical thrombectomy; mRS: modified Rankin Scale; sICH: symptomatic intracranial haemorrhage; mTICI: modified Treatment in Cerebral Ischemia score.

Table S4. Cardiac surgery and mechanical thrombectomy.

Reference	Study type	Total number of patients	Age (yo)	Number of patients treated with MT (%)	Patients with mRS 0-2 at 90 days (%)	Patients with mRs of 6 at 90 days (%)	Patients with sICH (%)	Patients with successful recanalisation (mTICI 2b-3) (%)	Summary of study findings
Moazami et al. 2001 ¹⁶⁵	Observational	13	69 (±sd:5)	13 (100%) Intraarterial thrombolysis	NA	NA	0	TIMI grade 3 1 patient; TIMI grade 2 in 6 patients	Intraarterial thrombolysis appears safe post cardiac surgery
Joy et al. 2022 ¹⁶⁶	Case report	1	34	1 Intraarterial thrombolysis	1	0	0	1	Intraarterial thrombolysis appears safe and effective post cardiac surgery
Fukuda et al. 2003 ¹⁶⁷	Case series	5	57; 77; 58;64;71	5 (100%) Intraarterial thrombolysis	NA	0	0	3 (60%)	Intraarterial thrombolysis appears safe and effective post cardiac surgery
Gupta et al. 2022 ⁵⁸	Case series	5 patients with AIS following CS	mean 73.1 (range: 54-88)	5 (100.0%)	1 (20.0%)	1 (20.0%)	0 (0.0%)	2 (40.0%)	MT is safe and effective in patients with AIS following CS
Sheriff et al. 2019 ¹⁵⁶	Retrospective cohort study	7 patients with AIS	mean 58.7	7 (100.0)	3 (42.9)	1 (14.3)	2 (28.6)	4 (57.1)	MT may be safe and

		following CS	(range: 37-70)						effective in patients with AIS following CS
Wilkinson et al. 2021 ¹⁵⁹	Retrospective cohort study	163 patients with AIS following CS of which 15 (9.2%) with LVO	no LVO: mean 63.7 (±sd: 14) LVO without MT: mean 68.0 (±sd: 7.4) LVO with MT: mean 70.0 (±sd: 13.2)	6/15 (40.0)	LVO without MT: 0/9 (0.0%) LVO with MT: 4/6 (66.7%)	LVO without MT: 4/9 (44.4%) LVO with MT: 0/6 (0.0%)	LVO with MT: 1/6 (16.7%)	NA	MT improves the clinical outcomes of LVO AIS following CS
Al-Khawaldeh et al. 2015 ¹⁶⁰	Case report	1	52	1	1 (100%)	0 (0%)	0 (0%)	1 (100%)	MT may improve the clinical outcomes of LVO AIS following CS
Madeira et al. 2016 ⁷⁶	Case report	3	72, 20 and 42	3 (100%)	3 (100%)	0 (0%)	0 (0%)	3 (100%)	MT may improve the clinical

									outcomes of LVO AIS following CS
Haider al et a. 2017 ¹⁶¹	Case report	2	52 and 75	2 (100%)	NA	NA	0 (0%)	2 (100%)	MT may improve the clinical outcomes of LVO AIS following CS
Fitzgerald et al. 2019 ¹⁶²	Case report	1	79	1	NA	NA	0 (0%)	1 (100%)	MT may improve the clinical outcomes of LVO AIS following CS
Thomas et al. 2017 ¹⁶³	Case report	1	69	1	1 (100%)	0 (0%)	0 (0%)	1 (100%)	MT may improve the clinical outcomes of LVO AIS following CS
Laimoud et al. 2022 ¹⁵⁷	Retrospective cohort study	31 patients with AIS following CABG	mean 66 (range: 54-75)	2 (6.5%)	NA	NA	NA	NA	higher mortality rates in patients with vs. without AIS

									following CABG
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CABG: coronary artery bypass grafting; MT: mechanical thrombectomy; modified Rankin Scale; sICH: symptomatic intracranial haemorrhage; mTICI: modified Treatment in Cerebral Ischemia score.