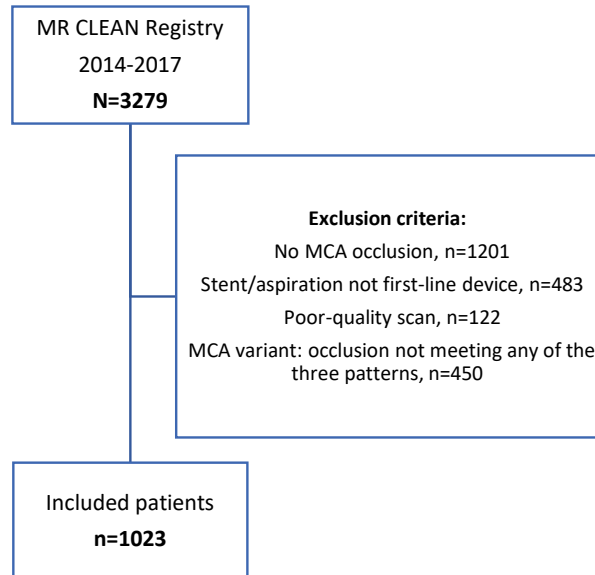


Supplementary material

Supplemental Material, Figure S1: Patient inclusion flow chart. In total, 3279 patients were presented in the hospital between 2014-2017. Among these, 1201 patients had an occlusion other than an MCA occlusion; 483 patients did not undergo EVT with a stent-retriever or aspiration device as a first-line approach; 122 had poor quality CTA scans; and 450 patients did not satisfy any of the three MCA occlusion patterns definitions. The abbreviations stand for: EVT, endovascular treatment; MCA, middle cerebral artery.

Supplemental Material, Table S1: MCA occlusion patterns for all 1023 patients. The occlusion patterns include MCA main stem, single branch, and double branch occlusions, as shown in Figure 1C.

| Main stem occlusions, n=370 | | | | |
|--|------------------|-----------|-------------|-------------------|
| Number of patients | Occluded segment | | | |
| | Proximal M1 | Distal M1 | Temporal M2 | Frontoparietal M2 |
| 47 | 1 | 0 | 0 | 0 |
| 182 | 0 | 1 | 0 | 0 |
| 141 | 1 | 1 | 0 | 0 |
| Single branch occlusions, n=151 | | | | |
| Number of patients | Occluded segment | | | |
| | Proximal M1 | Distal M1 | Temporal M2 | Frontoparietal M2 |
| 36 | 0 | 1 | 1 | 0 |
| 69 | 0 | 1 | 0 | 1 |
| 27 | 1 | 1 | 1 | 0 |
| 19 | 1 | 1 | 0 | 1 |
| Double branch occlusions, n=502 | | | | |
| Number of patients | Occluded segment | | | |
| | Proximal M1 | Distal M1 | Temporal M2 | Frontoparietal M2 |
| 348 | 0 | 1 | 1 | 1 |
| 154 | 1 | 1 | 1 | 1 |

With 4 possible occlusion segments (proximal M1, distal M1, temporal M2 and frontoparietal M2), there are 16 possible combinations for the occlusion patterns. Some combinations are removed: 0000, non-occlusion; 1001, 1010 and 1011, non-continuous occlusions; 0010, 0001 and 0011, single and double branch occlusion patterns that do not include an M1 segment.

Supplemental Material, Table S2: Patient functional outcome.

| Patient outcome | Main stem, n=370 | Single branch, n=151 | Double branch, n=502 | p-value |
|---|---------------------|----------------------------|----------------------------|-----------------|
| NIHSS _{FU} ^α – median (IQR) | 7 (2-15) | 11 (4-17) | 9 (4-16) | <0.01 |
| ΔNIHSS ^β – median (IQR) | -6 (-11-(-1)) | -4 (-9-0) | -5 (-10-0) | 0.20 |
| mRS at 90 days – no./total (%) | | | | 0.58 |
| 0 | 26/350 (7) | 7/139 (5) | 25/466 (5) | |
| 1 | 69/350 (20) | 22/139 (16) | 79/466 (17) | |
| 2 | 81/350 (23) | 26/139 (19) | 103/466 (22) | |
| 3 | 37/350 (11) | 17/139 (12) | 66/466 (14) | |
| 4 | 38/350 (11) | 17/139 (12) | 50/466 (11) | |
| 5 | 18/350 (5) | 14/139 (10) | 28/466 (6) | |
| 6 | 81/350 (23) | 36/139 (26) | 115/466 (25) | |
| sICH – no./total (%) | 22/370 (6) | 3/151 (2) | 20/502 (4) | 0.11 |

Missing values: ^α94, and ^β96.

ΔNIHSS, change in NIHSS score at 24-48h compared to baseline; NIHSS, National Institute of Health Stroke Scale; sICH, symptomatic intracranial hemorrhage.

Supplemental Material, Table S3: Subgroup analysis of NIHSS_{FU}, stratified by median age of the study population.

| Subgroup I: age ≤ 72 years | Main stem, n=213 | Single branch, n=66 | Double branch, n=241 | p-value |
|---|-------------------------|----------------------------|-----------------------------|----------------|
| NIHSS _{FU} ^α – median (IQR) | 7 (2-12) | 7 (3-15) | 7 (3-13) | 0.46 |
| Subgroup II: age >72 years | Main stem, n=157 | Single branch, n=85 | Double branch, n=261 | |
| NIHSS _{FU} ^β – median (IQR) | 8 (3-16) | 13 (6-18) | 11 (5-17) | 0.03 |

Missing values: ^α45, and ^β49.

FU, follow-up; IQR, interquartile range; NIHSS, National Institute of Health Stroke Scale.

Subgroup analysis: first-line EVT approach

Supplemental Material, Table S4: Subgroup analysis: patients treated with a stent-retriever as first-line device (n=750). Baseline characteristics, EVT outcomes, and functional outcomes of the three occlusion pattern groups.

| Baseline characteristics | Main stem, n=268 | Single branch, n=114 | Double branch, n=368 | p-value |
|---|---------------------|----------------------|----------------------|-----------------|
| Age – median (IQR) | 70 (59-79) | 73 (62-82) | 72 (63-80) | 0.11 |
| Sex, female – no./total (%) | 123/268 (46) | 52/114 (46) | 181/368 (49) | 0.65 |
| Medical history – no./total (%) | | | | |
| Previous stroke | 45/268 (17) | 22/113 (19) | 72/366 (20) | 0.63 |
| Diabetes mellitus | 48/267 (18) | 11/113 (10) | 62/366 (17) | 0.12 |
| Hypertension | 130/264 (49) | 61/111 (55) | 203/362 (56) | 0.23 |
| Atrial fibrillation | 62/267 (23) | 31/112 (28) | 104/366 (28) | 0.33 |
| Pre-stroke mRS – no./total (%) | | | | 0.35 |
| 0 | 182/265 (69) | 69/113 (61) | 235/360 (65) | |
| 1 | 36/265 (14) | 19/113 (17) | 47/360 (13) | |
| 2 | 20/265 (7) | 5/113 (4) | 27/360 (8) | |
| ≥3 | 27/265 (10) | 20/113 (18) | 51/360 (14) | |
| Systolic blood pressure ^α [mmHg] – median (IQR) | 147 (128-164) | 148 (130-165) | 148 (130-162) | 0.64 |
| Diastolic blood pressure ^β [mmHg] – median (IQR) | 80 (70-90) | 80 (70-94) | 80 (70-90) | 0.96 |
| NIHSS _{BL} ^γ – median (IQR) | 15 (10-19) | 15 (12-19) | 15 (12-19) | 0.32 |
| ASPECTS _{BL} ^δ – median (IQR) | 9 (8-10) | 9 (8-10) | 9 (7-10) | 0.89 |
| CS – no./total (%) | | | | <0.01 |
| 0 | 5/257 (2) | 0/113 (0) | 18/361 (5) | |
| 1 | 54/257 (21) | 41/113 (36) | 131/361 (36) | |
| 2 | 100/257 (39) | 61/113 (54) | 164/361 (45) | |
| 3 | 98/257 (38) | 11/113 (10) | 48/361 (13) | |
| CBS | 8 (6-8) | 7 (5-7) | 6 (4-6) | <0.01 |
| Treatment and workflow | | | | |
| IVT – no./total (%) | 201/268 (75) | 81/114 (71) | 259/368 (70) | 0.47 |
| Transferred patients – no./total (%) | 137/268 (51) | 67/114 (59) | 200/368 (54) | 0.38 |
| Stroke onset* to first | 56 (38-108) | 52 (40-105) | 58 (40-103) | 0.97 |

| | | | | |
|--|-----------------------------|---------------------------------|---------------------------------|----------------|
| hospital presentation ^ε [min] – median (IQR) | | | | |
| Hospital presentation to IVT [min] ^ζ – median (IQR) | 24 (19-30) | 24 (19-35) | 22 (17-33) | 0.35 |
| Stroke onset to groin puncture [min] – median (IQR) | 197 (150-260) | 217 (162-276) | 195 (149-260) | 0.12 |
| EVT outcomes | Main stem, n=268 | Single branch, n=114 | Double branch, n=368 | p-value |
| Procedural time ^η [min] – median (IQR) | 58 (40-85) | 60 (40-89) | 62 (44-88) | 0.54 |
| Retrieval attempts – no./total (%) | | | | 0.36 |
| 1 | 104/253 (41) | 49/109 (45) | 126/351 (36) | |
| 2 | 55/253 (22) | 18/109 (17) | 98/351 (28) | |
| 3 | 46/253 (18) | 20/109 (18) | 60/351 (17) | |
| 4 | 25/253 (10) | 9/109 (8) | 29/351 (8) | |
| ≥5 | 23/253 (9) | 13/109 (13) | 38/351 (11) | |
| eTICI scores – no./total (%) | | | | 0.42 |
| 0 | 20/266 (8) | 11/112 (10) | 30/362 (8) | |
| 1 | 12/266 (5) | 7/112 (6) | 8/362 (2) | |
| 2A | 47/266 (18) | 22/112 (20) | 82/362 (23) | |
| 2B | 59/266 (22) | 21/112 (19) | 80/362 (22) | |
| 2C | 30/266 (11) | 10/112 (9) | 47/362 (13) | |
| 3 | 98/266 (37) | 41/112 (36) | 115/362 (32) | |
| ENT – no./total (%) | 10/244 (4) | 5/102 (5) | 21/336 (6) | 0.51 |
| Patient outcome | Main stem, n=268 | Single branch, n=114 | Double branch, n=368 | p-value |
| NIHSS _{FU} ^θ – median (IQR) | 7 (2-15) | 10 (4-17) | 9 (4-15) | 0.02 |
| ΔNIHSS ^ι – median (IQR) | -6 (-11-(-2)) | -4 (-9-0) | -5 (-10-0) | 0.19 |
| mRS at 90 days – no./total (%) | | | | 0.73 |
| 0 | 19/255 (8) | 6/106 (6) | 17/345 (5) | |
| 1 | 53/255 (21) | 13/106 (12) | 60/345 (17) | |

| | | | | |
|----------------------|-------------------|------------------|-------------------|-------------|
| 2 | 57/255 (22) | 21/106 (20) | 74/345 (21) | |
| 3 | 29/255 (11) | 15/106 (14) | 49/345 (14) | |
| 4 | 26/255 (10) | 14/106 (13) | 40/345 (12) | |
| 5 | 14/255 (6) | 10/106 (9) | 23/345 (7) | |
| 6 | 57/255 (22) | 27/106 (26) | 82/345 (24) | |
| sICH – no./total (%) | 17/268 (6) | 2/114 (2) | 10/368 (3) | 0.04 |

Missing values: ^α13, ^β18, ^γ8, ^δ1, ^ε112, ^ζ305, ^η59, ^θ59, and ^ι60.

*Time of stroke onset was defined as the time of witnessed symptom onset or, if unknown, as the time the patient was last seen well.

ΔNIHSS, change in NIHSS score at 24-48h compared to baseline; ASPECTS, Alberta Stroke Programme Early CT Score; BL, baseline; CBS, clot burden score; CS, collateral score; CT, computed tomography; ENT, embolization to new (previously unaffected) vascular territory; eTICI, expanded thrombolysis in cerebral infarction; EVT, endovascular treatment; IQR, interquartile range; IVT, intravenous treatment with alteplase; mRS, modified Rankin Scale; NIHSS, National Institute of Health Stroke Scale; sICH, symptomatic intracranial hemorrhage.

Supplemental Material, Table S5: Subgroup analysis: patients treated with aspiration as first-line device (n=273). Baseline characteristics, EVT outcomes, and functional outcomes of the three occlusion pattern groups.

| Baseline characteristics | Main stem, n=102 | Single branch, n=37 | Double branch, n=134 | p-value |
|---|----------------------|----------------------|----------------------|-----------------|
| Age – median (IQR) | 69 (58-79) | 76 (61-82) | 74 (63-79) | 0.28 |
| Sex, female – no./total (%) | 51/102 (50) | 21/37 (57) | 74/134 (55) | 0.66 |
| Medical history – no./total (%) | | | | |
| Previous stroke | 15/100 (15) | 5/36 (14) | 21/134 (16) | 0.96 |
| Diabetes mellitus | 15/102 (15) | 7/37 (19) | 25/134 (19) | 0.70 |
| Hypertension | 55/100 (55) | 22/36 (61) | 71/133 (53) | 0.71 |
| Atrial fibrillation | 25/100 (25) | 6/35 (17) | 28/133 (21) | 0.58 |
| Pre-stroke mRS – no./total (%) | | | | 0.67 |
| 0 | 61/98 (62) | 22/34 (65) | 92/131 (70) | |
| 1 | 21/98 (22) | 6/34 (17) | 16/131 (12) | |
| 2 | 6/98 (6) | 3/34 (9) | 8/131 (6) | |
| ≥3 | 10/98 (10) | 3/34 (9) | 15/131 (12) | |
| Systolic blood pressure ^α [mmHg] – median (IQR) | 156 (136-178) | 149 (131-160) | 145 (127-164) | 0.04 |
| Diastolic blood pressure ^α [mmHg] – median (IQR) | 85 (77-95) | 80 (70-88) | 80 (70-90) | <0.01 |
| NIHSS _{BL} ^β – median (IQR) | 15 (11-18) | 16 (11-21) | 16 (11-21) | 0.31 |
| ASPECTS _{BL} – no./total (%) | 9 (7-10) | 9 (8-10) | 9 (7-10) | 0.52 |

| | | | | |
|---|-------------------------|----------------------------|-----------------------------|-----------------|
| CS – no./total (%) | | | | <0.01 |
| 0 | 3/101 (3) | 0/37 (0) | 10/131 (8) | |
| 1 | 21/101 (21) | 15/37 (41) | 48/131 (37) | |
| 2 | 43/101 (43) | 19/37 (51) | 45/131 (34) | |
| 3 | 34/101 (34) | 3/37 (8) | 28/131 (21) | |
| CBS | 8 (6-8) | 7 (5-7) | 6 (4-6) | <0.01 |
| Treatment and workflow | | | | |
| IVT – no./total (%) | 76/102 (75) | 31/37 (84) | 106/134 (79) | 0.07 |
| Transferred patients – no./total (%) | 54/102 (53) | 22/37 (59) | 81/134 (60) | 0.50 |
| Stroke onset to first hospital presentation ^γ [min] – median (IQR) | 52 (35-75) | 62 (49-95) | 55 (33-94) | 0.45 |
| Hospital presentation to IVT ^δ [min] – median (IQR) | 30 (20-37) | 20 (17-27) | 26 (20-34) | 0.04 |
| Stroke onset to groin puncture [min] – median (IQR) | 182 (145-244) | 185 (148-235) | 182 (139-246) | 0.77 |
| EVT outcomes | Main stem, n=102 | Single branch, n=37 | Double branch, n=134 | p-value |
| Procedural time ^ε [min] – median (IQR) | 50 (30-67) | 46 (34-88) | 42 (31-68) | 0.53 |
| Retrieval attempts – no./total (%) | | | | 0.23 |
| 1 | 42/90 (47) | 18/35 (51) | 68/125 (54) | |
| 2 | 13/90 (14) | 10/35 (29) | 29/125 (23) | |
| 3 | 15/90 (17) | 4/35 (11) | 12/125 (10) | |
| 4 | 8/90 (9) | 1/35 (3) | 5/125 (4) | |
| ≥5 | 12/90 (13) | 2/35 (6) | 11/125 (9) | |
| eTICI scores – no./total (%) | | | | 0.32 |
| 0 | 7/96 (7) | 3/36 (8) | 5/132 (4) | |
| 1 | 2/96 (2) | 0/36 (0) | 0/132 (0) | |
| 2A | 25/96 (26) | 8/36 (22) | 23/132 (17) | |
| 2B | 14/96 (15) | 10/36 (28) | 27/132 (21) | |

| | | | | |
|---|-----------------------------|--------------------------------|-------------------------------------|----------------|
| 2C | 13/96 (14) | 4/36 (11) | 20/132 (15) | |
| 3 | 35/96 (36) | 11/36 (31) | 57/132 (43) | |
| ENT – no./total (%) | 1/92 (1) | 1/36 (3) | 1/129 (1) | 0.61 |
| Patient outcome | Main stem, n=102 | Single branch, n=37 | Double branch, n=134 | p-value |
| NIHSS _{FU} ^ζ – median (IQR) | 8 (3-14) | 11 (5-17) | 9 (4-17) | 0.45 |
| ΔNIHSS ^η – median (IQR) | -6 (-9-(-1)) | -4 (-10-1) | -4 (-11-0) | 0.84 |
| mRS at 90 days – no./total (%) | | | | 0.54 |
| 0 | 7/95 (8) | 1/33 (3) | 8/121 (7) | |
| 1 | 16/95 (17) | 9/33 (27) | 19/121 (16) | |
| 2 | 24/95 (25) | 5/33 (16) | 29/121 (24) | |
| 3 | 8/95 (8) | 2/33 (6) | 17/121 (14) | |
| 4 | 12/95 (13) | 3/33 (9) | 10/121 (8) | |
| 5 | 4/95 (4) | 4/33 (12) | 5/121 (4) | |
| 6 | 24/95 (25) | 9/33 (27) | 33/121 (27) | |
| sICH – no./total (%) | 5/102 (5) | 1/37 (3) | 10/134 (7) | 0.48 |

Missing values: ^α13, ^β5, ^γ73, ^δ124, ^ε12, ^ζ35, and ^η36.

*Time of stroke onset was defined as the time of witnessed symptom onset or, if unknown, as the time the patient was last seen well.

ΔNIHSS, change in NIHSS score at 24-48h compared to baseline; ASPECTS, Alberta Stroke Programme Early CT Score; BL, baseline; CBS, clot burden score; CS, collateral score; CT, computed tomography; ENT, embolization to new (previously unaffected) vascular territory; eTICI, expanded thrombolysis in cerebral infarction; EVT, endovascular treatment; IQR, interquartile range; IVT, intravenous treatment with alteplase; mRS, modified Rankin Scale; NIHSS, National Institute of Health Stroke Scale; sICH, symptomatic intracranial hemorrhage.

Impact of proximal M1 occlusions

Supplemental Material, Table S6: Subgroup analysis: impact of proximal M1 segments on main stem occlusions (n=370). Baseline characteristics, EVT outcomes, and functional outcomes for patients with an occluded vs. non-occluded proximal M1 segment.

| Main stem Baseline characteristics | Occluded proximal M1, n=188 | Non-occluded proximal M1, n=182 | p-value |
|--|-----------------------------------|---------------------------------------|-----------------|
| Age – median (IQR) | 70 (59-81) | 69 (59-79) | 0.37 |
| Sex, female – no./total (%) | 83/188 (44) | 91/182 (50) | 0.26 |
| Medical history – no./total (%) | | | |
| Previous stroke | 30/187 (16) | 30/181 (17) | 0.89 |
| Diabetes mellitus | 32/187 (17) | 31/182 (17) | 0.98 |
| Hypertension | 98/187 (52) | 87/177 (49) | 0.54 |
| Atrial fibrillation | 44/187 (24) | 43/180 (24) | 0.94 |
| Pre-stroke mRS – no./total (%) | | | 0.09 |
| 0 | 122/184 (66) | 121/179 (68) | |
| 1 | 31/184 (17) | 26/179 (14) | |
| 2 | 8/184 (4) | 18/179 (10) | |
| ≥3 | 23/184 (13) | 14/179 (8) | |
| Systolic blood pressure ^α [mmHg] – median (IQR) | 150 (131-170) | 149 (129-164) | 0.20 |
| Diastolic blood pressure ^β [mmHg] – median (IQR) | 83 (75-93) | 80 (70-90) | 0.05 |
| NIHSS _{BL} ^γ – median (IQR) | 16 (12-20) | 14 (10-17) | <0.01 |
| ASPECTS _{BL} ^δ – median (IQR) | 9 (7-10) | 9 (8-10) | <0.01 |
| CS – no./total (%) | | | 0.47 |
| 0 | 5/181 (3) | 3/177 (2) | |
| 1 | 41/181 (23) | 34/177 (19) | |
| 2 | 75/181 (41) | 68/177 (38) | |
| 3 | 60/181 (33) | 72/177 (41) | |
| Treatment and workflow | | | |
| IVT – no./total (%) | 143/188 (76) | 134/182 (74) | 0.59 |
| Transferred patients – no./total (%) | 105/188 (56) | 86/182 (47) | 0.10 |
| Stroke onset* to first hospital presentation ^ε [min] – median (IQR) | 55 (39-104) | 54 (37-105) | 0.65 |
| Hospital presentation to IVT [min] ^ζ – median (IQR) | 24 (18-30) | 25 (20-35) | 0.07 |
| Stroke onset to groin puncture [min] – median (IQR) | 200 (151-255) | 190 (145-256) | 0.58 |
| Main stem EVT outcomes | | | |
| Procedural time ^η [min] – median (IQR) | 59 (40-78) | 50 (35-80) | 0.46 |

| | | | |
|---|------------------------------------|--|----------------|
| Retrieval attempts – no./total (%) | | | 0.48 |
| 1 | 72/174 (41) | 74/169 (44) | |
| 2 | 31/174 (18) | 37/169 (22) | |
| 3 | 36/174 (21) | 25/169 (15) | |
| 4 | 19/174 (11) | 14/169 (8) | |
| ≥5 | 16/174 (9) | 19/169 (11) | |
| eTICI scores – no./total (%) | | | 0.23 |
| 0 | 14/186 (8) | 13/176 (8) | |
| 1 | 9/186 (5) | 5/176 (3) | |
| 2A | 28/186 (15) | 44/176 (25) | |
| 2B | 41/186 (22) | 32/176 (18) | |
| 2C | 25/186 (13) | 18/176 (10) | |
| 3 | 69/186 (37) | 64/176 (36) | |
| ENT – no./total (%) | 6/173 (4) | 5/163 (3) | 0.84 |
| Main stem Patient outcome | Occluded proximal M1, n=188 | Non-occluded proximal M1, n=182 | p-value |
| NIHSS _{FU} ⁰ – median (IQR) | 8 (2-15) | 6 (2-14) | 0.17 |
| ΔNIHSS ⁰ – median (IQR) | -6 (-11-(-2)) | -5 (-10-(-1)) | 0.20 |
| mRS at 90 days – no./total (%) | | | 0.25 |
| 0 | 14/176 (8) | 12/174 (7) | |
| 1 | 28/176 (16) | 41/174 (24) | |
| 2 | 37/176 (21) | 44/174 (25) | |
| 3 | 22/176 (12) | 15/174 (9) | |
| 4 | 22/176 (13) | 16/174 (9) | |
| 5 | 7/176 (4) | 11/174 (6) | |
| 6 | 46/176 (26) | 35/174 (20) | |
| sICH – no./total (%) | 14/188 (7) | 8/182 (4) | 0.22 |

Missing values: ^α10, ^β12, ^γ4, ^δ1, ^ε58, ^ζ143, ^η30, and ^θ40.

*Time of stroke onset was defined as the time of witnessed symptom onset or, if unknown, as the time the patient was last seen well.

ΔNIHSS, change in NIHSS score at 24-48h compared to baseline; ASPECTS, Alberta Stroke Programme Early CT Score; BL, baseline; CS, collateral score; CT, computed tomography; ENT, embolization to new (previously unaffected) vascular territory; eTICI, expanded thrombolysis in cerebral infarction; EVT, endovascular treatment; IQR, interquartile range; IVT, intravenous treatment with alteplase; mRS, modified Rankin Scale; NIHSS, National Institute of Health Stroke Scale; sICH, symptomatic intracranial hemorrhage.

Supplemental Material, Table S7: Subgroup analysis: impact of proximal M1 segments on single branch occlusions (n=151). Baseline characteristics, EVT outcomes, and functional outcomes for patients with an occluded vs. non-occluded proximal M1 segment.

| Single branch Baseline characteristics | Occluded proximal M1, n=46 | Non-occluded proximal M1, n=105 | p-value |
|---|-----------------------------------|--|----------------|
| Age – median (IQR) | 73 (60-80) | 74 (64-83) | 0.31 |
| Sex, female – no./total (%) | 20/46 (44) | 53/105 (51) | 0.43 |
| Medical history – no./total (%) | | | |

| | | | |
|--|-----------------------------------|--|----------------|
| Previous stroke | 10/44 (23) | 17/105 (16) | 0.35 |
| Diabetes mellitus | 4/45 (9) | 14/105 (13) | 0.44 |
| Hypertension | 23/43 (54) | 60/104 (58) | 0.64 |
| Atrial fibrillation | 6/44 (14) | 31/103 (30) | 0.04 |
| Pre-stroke mRS – no./total (%) | | | 0.28 |
| 0 | 31/46 (67) | 60/101 (59) | |
| 1 | 7/46 (15) | 18/101 (18) | |
| 2 | 4/46 (9) | 4/101 (4) | |
| ≥3 | 4/46 (9) | 19/101 (19) | |
| Systolic blood pressure ^α [mmHg] – median (IQR) | 146 (130-165) | 149 (131-164) | 0.85 |
| Diastolic blood pressure ^α [mmHg] – median (IQR) | 80 (70-90) | 80 (70-90) | 0.99 |
| NIHSS _{BL} ^β – median (IQR) | 17 (14-20) | 15 (12-18) | 0.03 |
| ASPECTS _{BL} – median (IQR) | 9 (7-10) | 9 (8-10) | 0.51 |
| CS – no./total (%) | | | 0.54 |
| 0 | 0/45 (0) | 0/105 (0) | |
| 1 | 16/45 (36) | 40/105 (38) | |
| 2 | 23/45 (51) | 57/105 (54) | |
| 3 | 6/45 (13) | 8/105 (8) | |
| Treatment and workflow | | | |
| IVT – no./total (%) | 34/46 (74) | 78/105 (74) | 0.79 |
| Transferred patients – no./total (%) | 29/46 (63) | 60/105 (57) | 0.50 |
| Stroke onset* to first hospital presentation ^γ [min] – median (IQR) | 59 (45-95) | 55 (40-110) | 0.83 |
| Hospital presentation to IVT [min] ^δ – median (IQR) | 23 (16-33) | 24 (18-33) | 0.81 |
| Stroke onset to groin puncture [min] – median (IQR) | 195 (155-263) | 210 (161-283) | 0.25 |
| Single branch EVT outcomes | Occluded proximal M1, n=46 | Non-occluded proximal M1, n=105 | p-value |
| Procedural time ^ε [min] – median (IQR) | 60 (35-85) | 56 (40-90) | 0.69 |
| Retrieval attempts – no./total (%) | | | 0.92 |
| 1 | 18/43 (42) | 49/101 (49) | |
| 2 | 10/43 (23) | 18/101 (18) | |
| 3 | 8/43 (19) | 16/101 (16) | |
| 4 | 3/43 (7) | 7/101 (7) | |
| ≥5 | 4/43 (9) | 11/101 (11) | |
| eTICI scores – no./total (%) | | | 0.05 |
| 0 | 5/44 (12) | 9/104 (9) | |
| 1 | 5/44 (11) | 2/104 (2) | |
| 2A | 4/44 (9) | 26/104 (25) | |

| | | | |
|---|---|--|----------------|
| 2B | 11/44 (25) | 20/104 (19) | |
| 2C | 5/44 (11) | 9/104 (9) | |
| 3 | 14/44 (32) | 38/104 (36) | |
| ENT – no./total (%) | 1/42 (2) | 5/96 (5) | 0.45 |
| Single branch Patient outcome | Occluded proximal M1, n=46 | Non-occluded proximal M1, n=105 | p-value |
| NIHSS _{FU} ^ζ – median (IQR) | 10 (5-16) | 11 (4-17) | 0.77 |
| ΔNIHSS ^η – median (IQR) | -7 (-11-(-1)) | -4 (-9-0) | 0.07 |
| mRS at 90 days – no./total (%) | | | 0.80 |
| 0 | 2/42 (5) | 5/97 (5) | |
| 1 | 8/42 (19) | 14/97 (14) | |
| 2 | 8/42 (19) | 18/97 (19) | |
| 3 | 4/42 (10) | 13/97 (14) | |
| 4 | 3/42 (7) | 14/97 (14) | |
| 5 | 6/42 (14) | 8/97 (8) | |
| 6 | 11/42 (26) | 25/97 (26) | |
| sICH – no./total (%) | 1/146 (2) | 2/105 (2) | 0.91 |

Missing values: ^α2, ^β5, ^γ30, ^δ68, ^ε4, ^ζ13, and ^η14.

*Time of stroke onset was defined as the time of witnessed symptom onset or, if unknown, as the time the patient was last seen well.

ΔNIHSS, change in NIHSS score at 24-48h compared to baseline; ASPECTS, Alberta Stroke Programme Early CT Score; BL, baseline; CS, collateral score; CT, computed tomography; ENT, embolization to new (previously unaffected) vascular territory; eTICI, expanded thrombolysis in cerebral infarction; EVT, endovascular treatment; IQR, interquartile range; IVT, intravenous treatment with alteplase; mRS, modified Rankin Scale; NIHSS, National Institute of Health Stroke Scale; sICH, symptomatic intracranial hemorrhage.

Supplemental Material, Table S8: Subgroup analysis: impact of proximal M1 segments on double branch occlusions (n=502). Baseline characteristics, EVT outcomes, and functional outcomes for patients with an occluded vs. non-occluded proximal M1 segment.

| Double branch Baseline characteristics | Occluded proximal M1, n=154 | Non-occluded proximal M1, n=348 | p-value |
|---|--|--|----------------|
| Age – median (IQR) | 72 (64-80) | 73 (62-80) | 0.52 |
| Sex, female – no./total (%) | 82/154 (53) | 173/348 (50) | 0.47 |
| Medical history – no./total (%) | | | |
| Previous stroke | 31/154 (20) | 62/346 (18) | 0.56 |
| Diabetes mellitus | 28/154 (18) | 59/346 (17) | 0.76 |
| Hypertension | 88/152 (58) | 186/343 (54) | 0.45 |
| Atrial fibrillation | 36/153 (24) | 96/346 (28) | 0.33 |
| Pre-stroke mRS – no./total (%) | | | 0.16 |
| 0 | 107/149 (72) | 220/342 (64) | |
| 1 | 12/149 (8) | 51/342 (15) | |
| 2 | 12/149 (8) | 23/342 (7) | |
| ≥3 | 18/149 (12) | 48/342 (14) | |

| | | | |
|--|------------------------------------|--|-----------------|
| Systolic blood pressure ^α [mmHg] – median (IQR) | 150 (135-165) | 144 (127-160) | 0.02 |
| Diastolic blood pressure ^β [mmHg] – median (IQR) | 81 (70-90) | 80 (72-90) | 0.38 |
| NIHSS _{BL} ^γ – median (IQR) | 17 (13-20) | 15 (11-19) | <0.01 |
| ASPECTS _{BL} – median (IQR) | 9 (7-10) | 9 (8-10) | <0.01 |
| CS – no./total (%) | | | 0.13 |
| 0 | 9/148 (6) | 19/344 (6) | |
| 1 | 65/148 (44) | 114/344 (33) | |
| 2 | 54/148 (37) | 155/344 (45) | |
| 3 | 20/148 (13) | 56/344 (16) | |
| Treatment and workflow | | | |
| IVT – no./total (%) | 117/154 (76) | 248/348 (71) | 0.43 |
| Transferred patients – no./total (%) | 86/154 (56) | 195/348 (56) | 0.97 |
| Stroke onset* to first hospital presentation ^δ [min] – median (IQR) | 59 (40-110) | 56 (37-99) | 0.45 |
| Hospital presentation to IVT [min] ^ε – median (IQR) | 22 (19-34) | 24 (17-33) | 0.87 |
| Stroke onset to groin puncture [min] – median (IQR) | 193 (147-246) | 192 (147-260) | 0.69 |
| Double branch EVT outcomes | Occluded proximal M1, n=154 | Non-occluded proximal M1, n=348 | p-value |
| Procedural time ^ζ [min] – median (IQR) | 55 (35-85) | 57 (40-83) | 0.59 |
| Retrieval attempts – no./total (%) | | | 0.72 |
| 1 | 64/148 (43) | 130/328 (40) | |
| 2 | 37/148 (25) | 90/328 (27) | |
| 3 | 19/148 (13) | 53/328 (16) | |
| 4 | 10/148 (7) | 24/328 (7) | |
| ≥5 | 18/148 (12) | 31/328 (10) | |
| eTICI scores – no./total (%) | | | 0.04 |
| 0 | 13/153 (9) | 22/341 (7) | |
| 1 | 4/153 (3) | 4/341 (1) | |
| 2A | 19/153 (12) | 86/341 (25) | |
| 2B | 34/153 (22) | 73/341 (21) | |
| 2C | 24/153 (16) | 43/341 (13) | |
| 3 | 59/153 (39) | 113/341 (33) | |
| ENT – no./total (%) | 7/145 (5) | 15/320 (5) | 0.95 |
| Double branch Patient outcome | Occluded proximal M1, n=154 | Non-occluded proximal M1, n=348 | p-value |
| NIHSS _{FU} ^η – median (IQR) | 11 (5-17) | 8 (3-15) | 0.01 |
| ΔNIHSS ^θ – median (IQR) | -5 (-10-0) | -5 (-10-(-1)) | 0.90 |

| | | | |
|--------------------------------|-------------|-------------|------|
| mRS at 90 days – no./total (%) | | | 0.17 |
| 0 | 2/144 (1) | 23/322(7) | |
| 1 | 24/144 (17) | 55/322 (17) | |
| 2 | 28/144 (19) | 75/322 (23) | |
| 3 | 21/144 (15) | 45/322 (14) | |
| 4 | 19/144 (13) | 31/322 (10) | |
| 5 | 10/144 (7) | 18/322 (6) | |
| 6 | 40/144 (28) | 75/322 (23) | |
| sICH – no./total (%) | 9/154 (6) | 11/348 (3) | 0.16 |

Missing values: ^α14, ^β17, ^γ4, ^δ97, ^ε218, ^ζ37, ^η41, and ^θ42.

*Time of stroke onset was defined as the time of witnessed symptom onset or, if unknown, as the time the patient was last seen well.

ΔNIHSS, change in NIHSS score at 24-48h compared to baseline; ASPECTS, Alberta Stroke Programme Early CT Score; BL, baseline; CS, collateral score; CT, computed tomography; ENT, embolization to new (previously unaffected) vascular territory; eTICI, expanded thrombolysis in cerebral infarction; EVT, endovascular treatment; IQR, interquartile range; IVT, intravenous treatment with alteplase; mRS, modified Rankin Scale; NIHSS, National Institute of Health Stroke Scale; sICH, symptomatic intracranial hemorrhage.

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