Supplemental Table 1: Baseline Characteristics and Clinical Information of Patients with Acute Large Vessel Occlusions

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Case | Age/Sex | Device | Implant to Stroke (days) | Stroke Location | LVO Location | NIHSS | LKW to Stroke (minutes) | INR at time of ischemic stroke | aPTT at time of ischemic stroke | Antithrombotic at the time of ischemic stroke |
| 1 | 65 F | HMII | 25 | Left basal ganglia and insula | L ICA and L M2 | 24 | 20 | 2.2 | 46.6 | Aspirin 324 + Bivalirudin to Warfarin |
| 2 | 73 M | HMII | 8 | Right pons | R vertebral artery | 16 | 1440 | 1.2 | 30.6 | Aspirin 81 + Warfarin |
| 3 | 27 F | HMII | 1 | Right lentiform nuclei and caudate | R M1 and R ICA | 8 | 160 | 1 | 31.1 | Aspirin 81 + Heparin to Warfarin |
| 4 | 61 F | HMII | 12 | Large RMCA territory | R M1 | 18 | 10 | 3.1 | 46.8 | Aspirin 162 + Heparin to Warfarin |
| 5 | 63 F | HMII | 389 | Right insula, right thalamus and midbrain | R M2 | 22 | 135 | 1.6 | 50.4 | Aspirin 325 + Warfarin |
| 6 | 72 M | Heart-Ware | 400 | Left frontal operculum | L M2 | 2 | 5760 | 3 | 25.6 | Aspirin 325 + Warfarin |
| 7 | 52 F | HMII | 603 | Left frontal, left basal ganglia, and left internal capsule | L ICA | 22 | 660 | 7.9 | 44.1 | Aspirin 81 + Warfarin |
| 8 | 58 M | Heart-Ware | 290 | Large RMCA territory | R ICA | 17 | 870 | 1.8 | NA | Aspirin 325 + Warfarin |
| 9 | 59 | HMII | 340 | Large RMCA territory | R M1 | 3 | 62 | 1 | 29.6 | ASAS 325 + Warfarin |
| 10 | 51 | HMII | 595 | Large RMCA territory | R ICA | 20 | 225 | 1.9 | 30.6 | ASAS 325 + Warfarin |
| 11 | 31 | HMII | 139 | Large RMCA territory | R tICA, R M1, and R A1 | 13 | 20 | 2.5 | 26.7 | ASA 81 + Warfarin |
| 12 | 41 | HMII | 213 | Large LMCA territory | L tICA and L M1 | 15 | 815 | 1.1 | 29 | asprin 81 + Warfarin |
| 13 | 46 | HMII | 68 | Bilateral MCA territory | L  tICA | 10 | 35 | 2.2 | 42.2 | aspirin 325 + Warfarin |
| 14 | 64 | HMII | 105 | Large RMCA territory | R M2 | 13 | 294 | 1.2 | 30.3 | aspirin 81 + Dipyridamole 50 |
| 15 | 76 | Heart-Ware | 385 | Small R pre-central gyrus | R M2 | 0 | 120 | 2.4 | 33.5 | warfarin |
| 16 | 68 | HMII | 191 | Large LMCA territory | L MCA | 18 | unknown | 2.2 | unknown | aspirin 162 + warfarin |

LVO: Large vessel occlusion; NIHSS: National Institutes of Health Stroke Scale; LKW: Last known well time; INR: International Normalized Ratio; aPTT: activated partial thromboplastin time; HMII: HeartMate II; ICA: internal carotid artery. tICA: terminal internal carotid artery; MCA: middle cerebral artery; M1: first segment of middle cerebral artery; M2: second segment of middle cerebral artery; A1: first segment middle cerebral artery

Supplemental Table 2: Outcomes for the five patients with LVO undergoing mechanical thrombectomy.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Case | Stroke Year | Occlusion location | Pre-treatment NIH Stroke Scale | Type of intervention | Post-treatment NIH Stroke Scale | LKW to stroke (min) | Final Infarct Volume (cc) | LKW to arterial puncture (min) | TICI Recanalization grade | Mortality at Hospital Discharge |
| 1 | 2009 | Left ICA | 10 | Balloon-mounted stent (failed Merci, Penumbra) | 23 | 35 | 29.3 | 178 | 3 | Deceased |
| 2 | 2010 | Right ICA, M1, A1 | 13 | Penumbra thrombectomy right ICA and M1 + Merci clot retriever for A1 | 11 | 20 | 123.6 | 150 | 3 | Alive |
| 3 | 2012 | Right M1 | 3 | Solitaire: mechanical thrombectomy | 9 | 62 | 5 | 204 | 2b | Alive |
| 4 | 2014 | Right M1 | 18 | Solitaire: mechanical thrombectomy | 17 | 10 | 191 | 99 | 3 | Alive |
| 5 | 2016 | Left MCA | 18 | Unknown, performed at outside facility | 30 | Unknown | 35.2 | Unknown | 3 | Deceased |

NIH: National Institutes of Health; LKW: Last known well; TICI: Thrombolysis in cerebral infarction; ICA: internal carotid artery; M1: first segment of middle cerebral artery; A1: first segment of anterior cerebral artery

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Collateral Grade | Occlusion Site | Thrombectomy Case Number (from Table 2) | Infarct Size (cc) | Median infarct size (collateral grade 3, 2, 1) |
| Full (grade 3) | M2 |  | 0 | 4 |
| M1 |  | 2 |
| ICA |  | 6 |
| ICA |  | 10.3 |
| Partial filling (grade 2) | ICA, M1 |  | 2.9 | 17.2 |
| M2 |  | 3 |
| M1 | Case 3 | 5 |
| ICA | Case 1 | 29.3 |
| M1 |  | 102 |
| M1 | Case 4 | 191 |
| Minimal filling (grade 1) | M1 |  | 45 | 145.8 |
| ICA, M1, A1 | Case 2 | 123.6 |
| ICA, M1 |  | 168 |
| ICA, M2 |  | 171 |
|  |  |  |  | P =0.04 |

Supplemental Table 3: Chart illustrating positive correlation with higher collateral grade and final infarction volume.

Supplemental Figure 1



Supplemental Figure 2.