

ON LINE SUPPLEMENT

SUPPLEMENTARY METHODS

Subjects

The ASTER trial was a multicentric (n=8) randomized, controlled trial, which showed no statistical difference between aspiration or stent retriever as a frontline thrombectomy approach in patients treated by endovascular treatment in the first 6 hours,.

The Pitié-Salpêtrière registry is a registry of patients treated by EndoVascular Treatment, or IV thrombolysis, or both. For this study, we examined the same study period (2015-2017) as the ASTER trial, (i.e., once the pivotal EVT trials showed a benefit of performing EVT in anterior large vessel occlusion). We selected patients who underwent EVT with or without IV thrombolysis if they had imaging evidence of an occlusion of the intracranial internal carotid artery or the origin (M1) or branches (M2) of the middle cerebral artery to have the same inclusion criteria as the ASTER trial. Key exclusion criteria included cerebral infarction of the posterior circulation and prestroke modified Rankin Scale (mRS) score greater than 2 as well as the general contraindications for thrombolysis and thrombectomy.

To conduct this study, we excluded 19 patients from the ASTER trial with day one DWI-ASPECTS of 10. In total, 319 patients from the ASTER trial and 86 patients from the Pitié-Salpêtrière were merged into a single dataset. Investigators blinded to the clinical data for each database rated *a posteriori* each DWI-ASPECTS region and computed the total score. Indeed, in both cohorts, DWI-ASPECTS was not used as an inclusion or exclusion criteria to treat the patients.

Supplementary Table I. Characteristics of the 8 centers from the ASTER trial and the Pitié-Salpêtrière (PS) registry

Median (IQR)	N	Age (years)	Baseline NIHSS	Baseline DWI-ASPECTS	Day one NIHSS	Day one DWI-ASPECTS
Center 1	93	74 (62-82)	18 (13-22)	7 (5-8)	9 (3-20)	7 (3-8)
Center 2	61	68 (57-79)	15 (8-20)	7 (5-8)	8 (5-18)	5 (3-7)

Center 3	27	73 (64-78)	18 (16-20)	7 (6-9)	7 (5-14)	6 (3-8)
Center 4	26	73 (65-80)	16 (10-19)	7.5 (7-9)	8 (3-14)	4 (2-6)
Center 5	51	69 (56-78)	18 (14-21)	7 (5-8)	10 (2-17)	7 (3-8)
Center 6	16	68 (62-83)	17 (13-18)	7.5 (5-10)	15 (8-18)	5 (4-8)
Center 7	22	72 (62-85)	18 (14-20)	8 (6-9)	5 (2-14)	5.5 (4-8)
Center 8	6	70 (60-79)	17 (8-20)	8 (5-9)	5 (0-14)	6 (3-9)
PS registry	80	62 (51-78)	18 (11-20)	7 (4-8)	12 (5-18)	4 (2-7)

SUPPLEMENTARY RESULTS

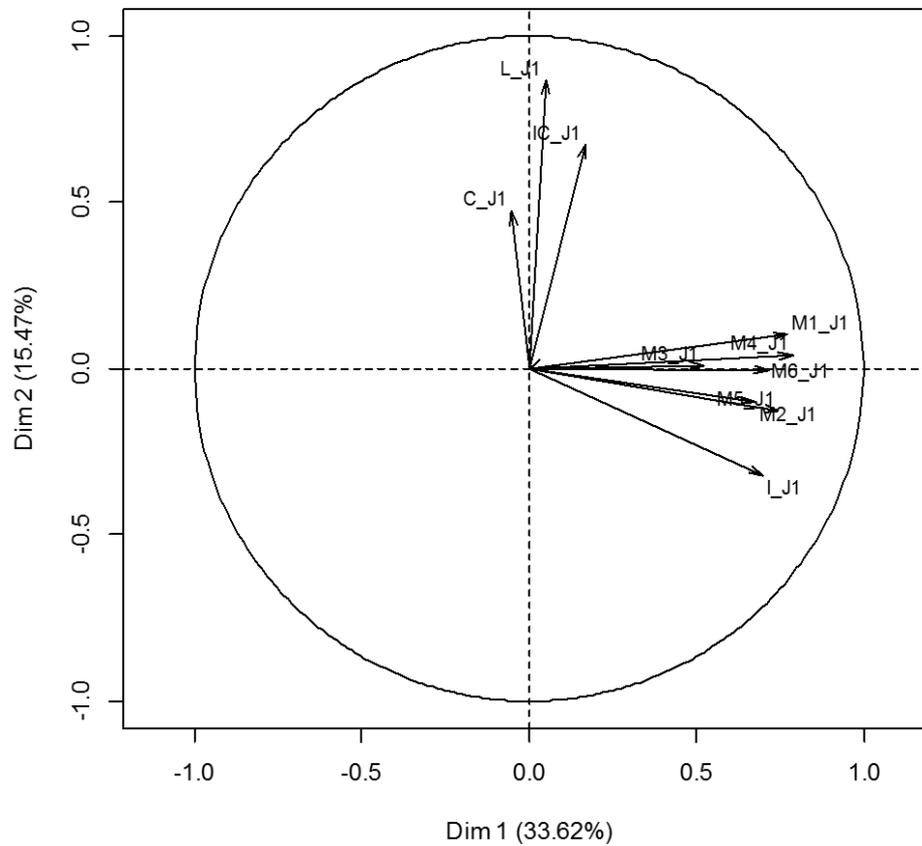
Multicollinearity analysis

The Principal Component Analysis identified (Supplementary Figure I) that damage to deep regions covaried together and that of cortical regions covaried together as well.

Supplementary Figure I. PCA analysis

Variable plot created with principal component analysis (PCA) in the entire cohort. PCA is a tool capable of summarizing the most important linear relationships between variables and computing synthetic variables named components from the original variables. PCA provides a simple graph with visual and geometric representations of the correlation matrix. Here plotted is the damage to the 10 ROIs (C_J1, IC_J1 and L_J1 for the deep territory, and M1_J1 to M6_J1 for the cortical territory) on a plane spanned by the first two components. The first component (horizontal axis) contains all the cortical ROIs and accounts for around 35% of the total variance of the dataset. The second component contains the deep ROIs and accounts for 15% of the variance.

Variables factor map (PCA)

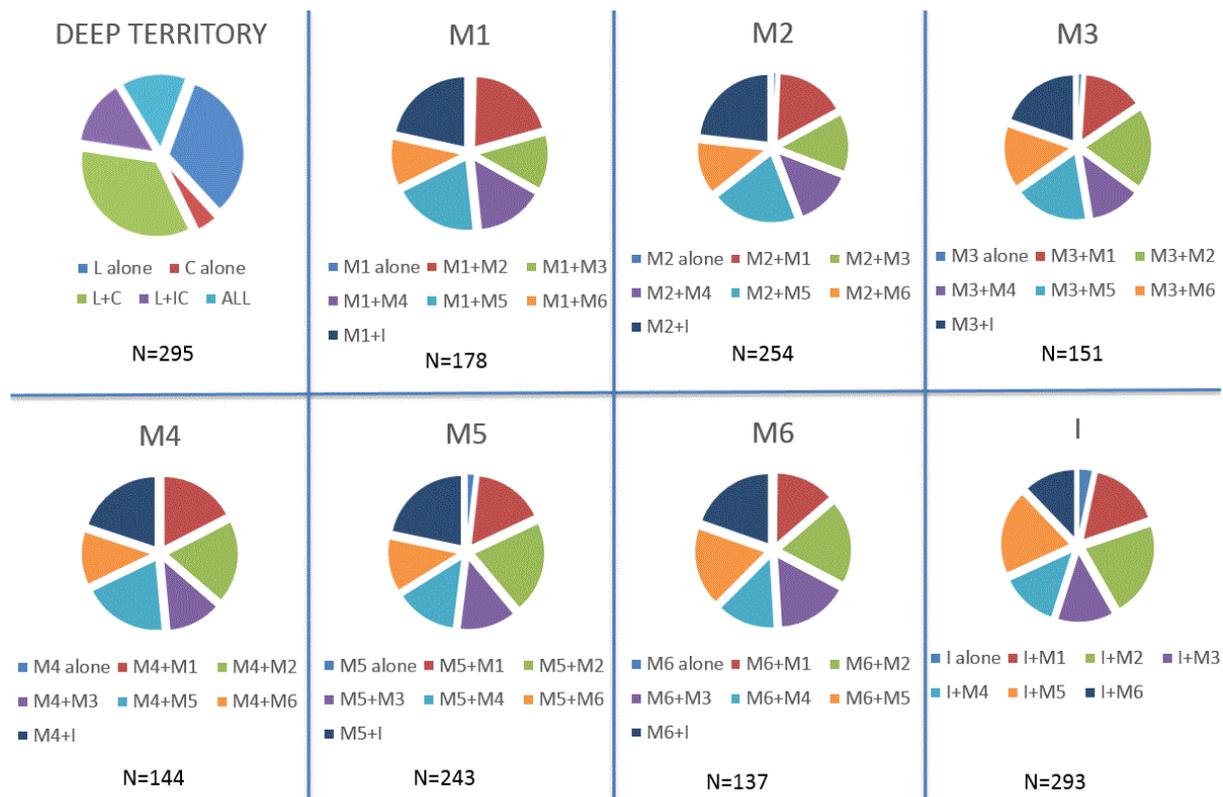


However, the variance inflation factor (VIF) factor and the Condition Index (CI) are reported for each DWI-ASPECTS region in Table I. None of the regions was found to be collinear. However, the total ASPECT score, which depends on the sum of the damaged ROIs was collinear and not entered in the logistic regression model.

	C	IC	L	I	M1	M2	M3	M4	M5	M6	ASPECTS
VIF	1.290	1.299	1.441	1.506	1.959	1.808	1.642	1.833	1.574	1.762	147
CI	2.615	3.774	4.197	4.684	5.332	5.416	5.613	6.688	7.681	8.147	80

Supplementary Figure II.

Pie charts of the relative frequency of damage to each region of the deep territory with the others and each cortical region with one another.



Supplementary Table II. Proportion of DWI reversal in the entire cohort and in left- and right- sided strokes.

The total number of patients was 382 (patients with pre-treatment and follow up MRI). The p-value refers to the comparison between the proportion of DWI reversal between right and left sided strokes.

n (%)	Entire cohort N=382	Left-sided strokes N=184	Right-sided strokes N=198	p-value
C	11 (2.8 %)	6 (3.2 %)	5 (2.5 %)	0.91
IC	10 (2.6 %)	7 (3.8 %)	3 (1.5 %)	0.27
L	12 (3.1 %)	7 (3.8 %)	5 (2.5 %)	0.66
I	16 (4.2 %)	11 (6.0 %)	5 (2.5 %)	0.14
M1	11 (2.8 %)	5 (2.7 %)	6 (3.0 %)	0.89
M2	13 (3.4 %)	6 (3.2 %)	7 (3.5 %)	0.90
M3	13 (3.4 %)	8 (4.3 %)	5 (2.5 %)	0.48
M4	11 (2.8 %)	6 (4.3 %)	5 (2.5 %)	0.48

M5	21 (5.5 %)	12 (6.5 %)	9 (4.5 %)	0.52
M6	17 (4.5 %)	7 (3.8 %)	10 (5.0 %)	0.74
Total score	52 (13.6 %)	24 (13.0 %)	28 (14.1 %)	0.86