ONLINE SUPPLEMENT

The role of acute lesion topography in initial ischemic stroke severity and long-term functional outcomes

Table I: Distribution of the cluster in the left hemisphere as a percentage of the region of interest (ROI) in regions that have a maximum power of at least 50% in either left or right hemisphere at alpha=0.001 across 490 subjects. **Volume = acute DWI lesion volume*

	Maximum Power %	NIH	NIH age+sex	NIH age+sex +volume*	mRS	mRS age+sex	mRS age+sex +volume*
Amygdala	71	30	30	10	28	28	1
Angular Gyrus	74	34	33	0	7	2	0
Anterior Corona Radiata	86	47	47	3	45	37	0
Anterior Limb of the Internal Capsule	82	84	84	46	81	82	4
Body of the corpus callosum	39	2	2	0	2	2	0
Caudate	74	34	35	10	20	30	0
Central Opercular Cortex	80	91	91	10	80	82	1
Cerebral Peduncle	51	0	0	0	0	0	0
External Capsule	95	98	98	70	98	96	8
Fornix	71	31	32	3	15	21	0
Frontal Operculum Cortex	74	90	90	15	67	53	0
Frontal Orbital Cortex	55	30	30	1	27	17	0
Frontal Pole	39	4	4	0	2	0	0
Genu of the corpus callosum	35	0	0	0	0	0	0
Heschl's	62	78	77	0	20	27	0

	Maximum Power %	NIH	NIH age+sex	NIH age+sex +volume*	mRS	mRS age+sex	mRS age+sex +volume*
Gyrus							
Inferior Frontal Gyrus pars opercularis	68	80	80	8	47	25	0
Inferior Frontal Gyrus pars triangularis	51	70	70	0	39	6	0
Insula	91	76	76	23	65	67	0
Lateral Occipital Cortex Inferior Division	55	6	5	0	1	1	0
Lateral Occipital Cortex Superior Division	65	11	10	0	3	2	0
Middle Frontal Gyrus	58	41	41	0	26	9	0
Middle Temporal Gyrus Anterior Division	31	4	4	0	0	0	0
Middle Temporal Gyrus Posterior Division	47	11	6	0	0	0	0
Middle Temporal Gyrus Temporo-occipital part	68	41	40	0	8	9	0
Pallidum	87	71	71	29	64	68	0

	Maximum Power %	NIH	NIH age+sex	NIH age+sex +volume*	mRS	mRS age+sex	mRS age+sex +volume*
Parietal Operculum Cortex	80	98	98	0	58	53	0
Planum Polare	55	18	17	0	10	10	0
Planum Temporale	74	48	51	0	2	2	0
Postcentral Gyrus	74	33	33	2	32	32	1
Posterior corona radiata	86	58	57	2	51	47	8
Posterior Limb of the Internal Capsule	95	74	74	37	66	64	8
Posterior thalamic radiation	71	22	21	0	9	6	0
Precentral Gyrus	76	29	29	5	19	14	0
Putamen	93	91	91	52	86	88	3
Retrolenticular part of the internal capsule	92	83	84	4	50	52	0
Sagittal stratum	80	16	14	0	13	12	0
Superior corona radiata	93	85	85	37	85	83	9
Superior fronto-occipital fasciculus	78	100	100	73	100	100	15
Superior longitudinal fasciculus	88	92	91	6	80	78	12
Superior	55	25	24	0	16	12	0

	Maximum Power %	NIH	NIH age+sex	NIH age+sex +volume*	mRS	mRS age+sex	mRS age+sex +volume*
Parietal lobule							
Superior Temporal Gyrus Anterior Division	31	19	19	0	0	0	0
Superior Temporal Gyrus Posterior Division	71	18	15	0	0	0	0
Supramarginal Gyrus Anterior Division	82	73	73	0	64	60	0
Supramarginal Gyrus Posterior Division	80	53	52	0	30	20	0
Temporal Pole	31	0	0	0	0	0	0
Thalamus	62	1	1	0	1	1	0
Uncinate fasciculus	82	87	87	18	86	87	7
Unclassified cerebral cortex	80	11	10	1	6	5	0
Unclassified white matter	93	35	34	2	28	23	1

Table II: Distribution of the cluster in the right hemisphere as a percentage of the region of interest (ROI) in regions that have a maximum power of at least 50% in either left or right hemisphere at alpha=0.001 across 490 subjects.

	Maximum Power %	NIH	NIH age+sex	mRS	mRS age+sex
Amygdala	92	20	20	1	6
Angular Gyrus	76	21	29	6	16
Anterior Corona Radiata	97	72	72	37	50
Anterior Limb of the Internal Capsule	97	83	84	9	28
Body of the corpus callosum	68	11	11	7	8
Caudate	90	56	60	3	15
Central Opercular Cortex	95	99	100	14	52
Cerebral Peduncle	15	0	0	0	0
External Capsule	100	99	100	15	51
Fornix	80	18	20	0	0
Frontal Operculum Cortex	88	96	98	7	18
Frontal Orbital Cortex	71	45	45	17	21
Frontal Pole	62	8	8	2	3
Genu of the corpus callosum	65	7	7	6	6
Heschl's Gyrus	78	92	96	8	39
Inferior Frontal Gyrus pars opercularis	86	89	90	33	42
Inferior Frontal Gyrus pars triangularis	71	79	79	34	48
Insula	98	89	93	7	32
Lateral Occipital Cortex Inferior Division	68	0	0	0	0
Lateral Occipital Cortex Superior Division	68	0	0	0	0
Middle Frontal Gyrus	68	44	45	26	31
Middle Temporal Gyrus Anterior Division	65	51	51	0	0

	Maximum Power %	NIH	NIH age+sex	mRS	mRS age+sex
Middle Temporal Gyrus Posterior Division	68	57	62	0	0
Middle Temporal Gyrus Temporo-occipital part	76	8	10	0	0
Pallidum	96	55	59	0	17
Parietal Operculum Cortex	87	82	88	13	51
Planum Polare	80	85	95	0	15
Planum Temporale	78	81	86	18	45
Postcentral Gyrus	84	23	26	4	8
Posterior corona radiata	90	13	13	12	13
Posterior Limb of the Internal Capsule	100	50	54	8	20
Posterior thalamic radiation	74	0	2	0	0
Precentral Gyrus	84	38	38	14	14
Putamen	100	94	94	7	46
Retrolenticular part of the internal capsule	98	43	49	6	18
Sagittal stratum	78	19	25	0	0
Superior corona radiata	99	85	84	51	68
Superior fronto-occipital fasciculus	96	100	100	5	37
Superior longitudinal fasciculus	98	59	59	32	40
Superior Parietal lobule	43	0	0	0	0
Superior Temporal Gyrus Anterior Division	71	87	89	0	7
Superior Temporal Gyrus Posterior Division	76	60	67	1	3
Supramarginal Gyrus Anterior Division	82	28	36	2	15
Supramarginal Gyrus Posterior Division	82	33	39	6	24

	Maximum Power %	NIH	NIH age+sex	mRS	mRS age+sex
Temporal Pole	68	20	21	0	2
Thalamus	58	0	0	0	0
Uncinate fasciculus	95	100	100	18	52
Unclassified cerebral cortex	95	15	17	2	4
Unclassified white matter	100	32	33	9	14

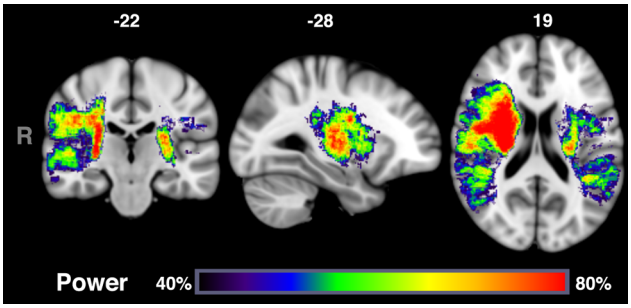

Figure I: Power maps for alpha=0.001 for 40 to 80% power in the subset of patients who were alive at 3 to 6 months (N=439).

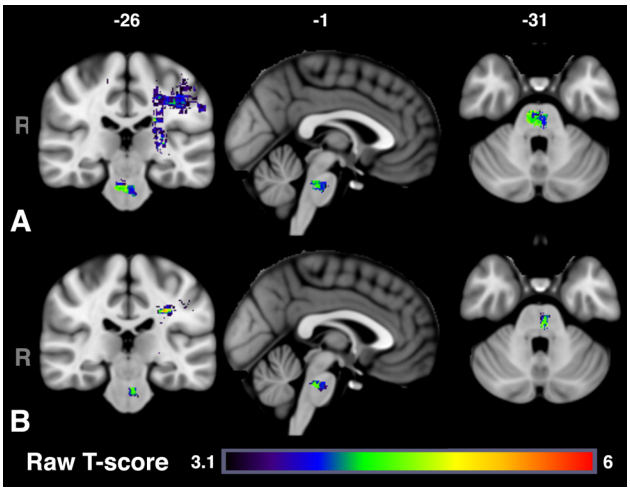

Figure II. Uncorrected T-maps with voxel-wise threshold of P<0.001 using sex, age and lesion volume as covariates for (A) admission NIHSS scores and (B) follow-up mRS scores show a region in the brain-stem to also be associated more with more severe stroke symptoms at presentation and greater long-term disability. After correction for multiple comparisons, this cluster did not meet statistical significance (P>0.05).