Online Supplemental Data

FIGURES

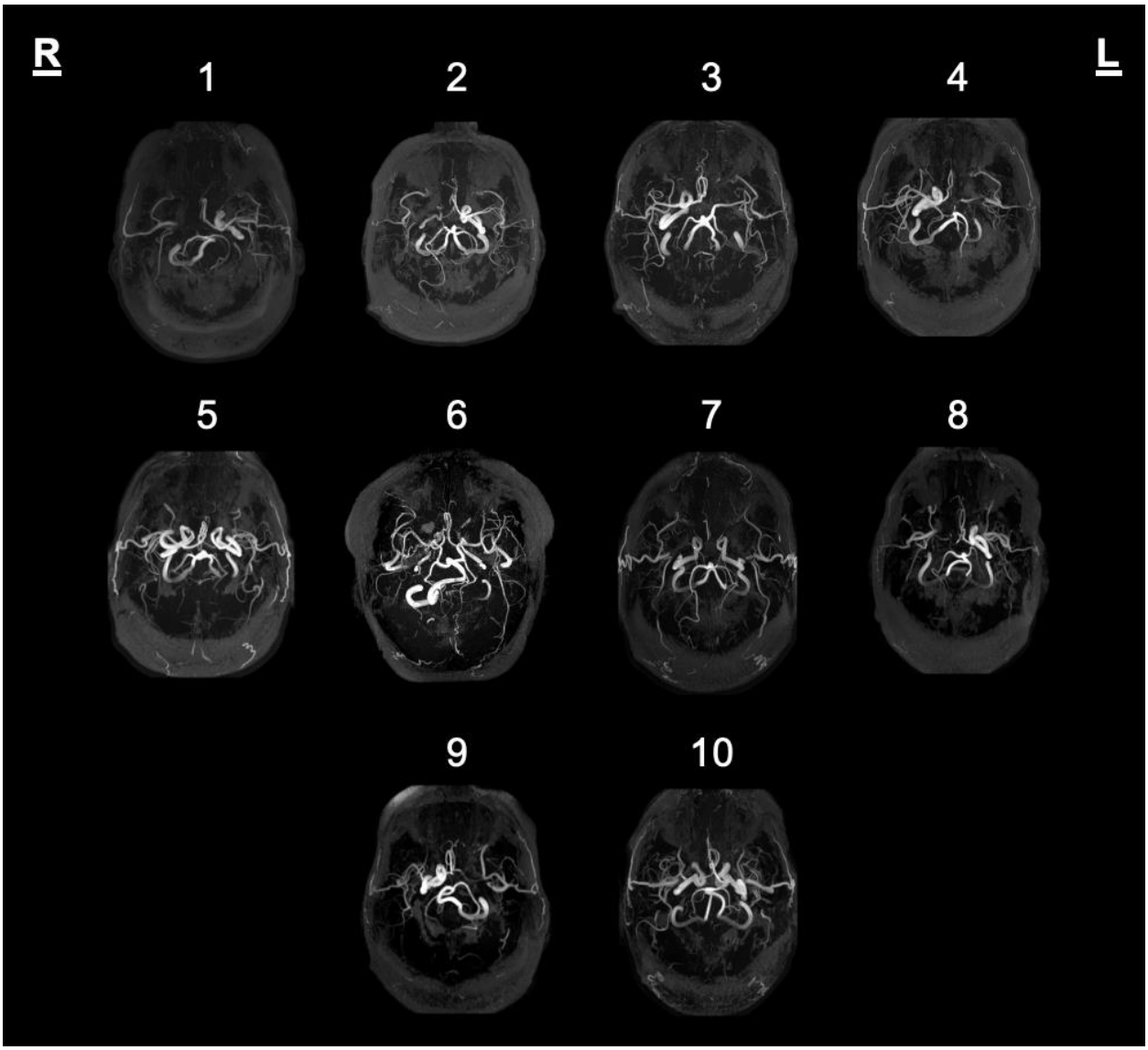

Figure 1. Axial time-of-flight MRA for all study patients.

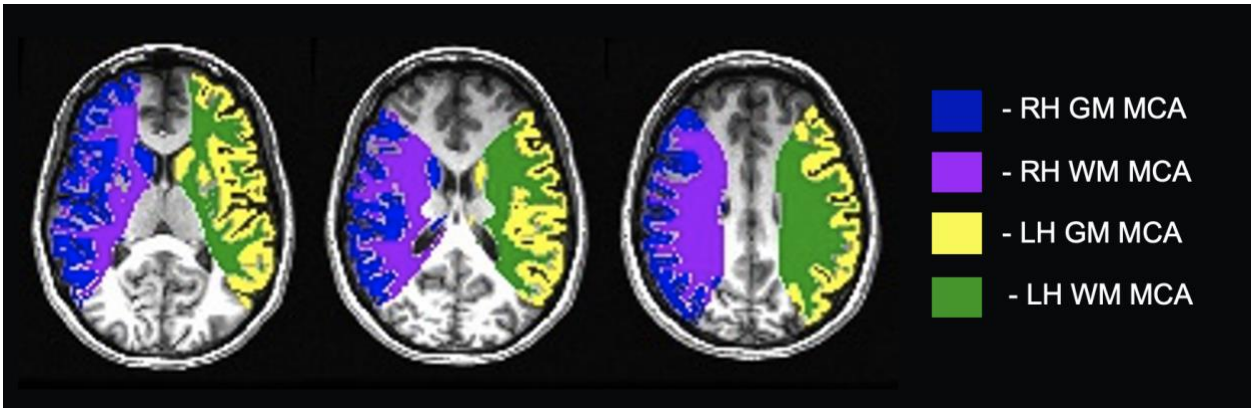

Figure 2. The axial view of the manually delineated gray matter, white matter, left hemisphere and right hemisphere of the MCA territory.

TABLES

Table 1. Participant demographics and clinical notes. Please refer to Figure 1 for MRA images of all patients.

Participant ID	Age	Sex	Clinical Notes
1	71	M	Right ICA occlusion • Right ocular ischemic syndrome • Right ischemic stroke (1 year prior to study)
2	74	F	High-grade right ICA stenosis • Right ischemic stroke (5 years prior to study) with multiple infarcts
3	52	M	Left ICA occlusion • Asymptomatic
4	69	M	Left ICA occlusion • Left ischemic stroke (MCA-PCA watershed) (7 years prior to study) by high-grade left ICA stenosis
5	68	M	Right intracranial ICA stenosis • Right ischemic stroke (1 year prior to study) with multiple infarcts (internal watershed in centrum semiovale)
6	37	M	High grade intracranial ICA occlusion secondary to Moyamoya syndrome
8	39	M	Bilateral ICA/MCA/ACA stenosis secondary to Moyamoya syndrome • Previous Left STA-MCA bypass surgery

9	67	M	Right ICA occlusion • Right ischemic stroke (3 years prior to study)
11	45	M	Left MCA occlusion • Left ischemic stroke (1 year prior to study)
12	68	M	Right ICA occlusion • Right ischemic stroke (4 years prior to study)

Table 2. A summary of perfusion metrics: MTT, rCBF and rCBV and the results of the respective Wilcoxon matched-pairs signed-rank test comparing GBCA and Thx-dOHb in gray matter and white matter for the 10 patients.

			Mean ± SD	Median	p-value	Significantly different (P < 0.05)?
MTT (s)	GM	GBCA	4.53 ± 0.48	4.46	0.8457	no
		THx-dOHb	4.57 ± 0.58	4.60		
	WM	GBCA	5.40 ± 0.49	5.46	0.0488	yes
		THx-dOHb	4.82 ± 0.75	4.95		
rCBF (a.u.)	GM	GBCA	53.07 ± 12.76	53.05	0.9219	no
		THx-dOHb	52.11 ± 13.19	53.13		
	WM	GBCA	27.76 ± 10.73	4.92	0.9219	no
		THx-dOHb	28.08 ± 11.33	4.88		
rCBV (a.u.)	GM	GBCA	5.11 ± 1.29	4.92	0.4316	no
		THx-dOHb	4.88 ± 1.08	4.88		
	WM	GBCA	2.99 ± 0.88	2.76	0.3750	no
		THx-dOHb	2.70 ± 0.89	2.55		

Table 3. A summary of the Bland-Altman plot analysis.

		MTT		rCBF		rCBV	
		GM	**WM**	**GM**	**WM**	**GM**	**WM**
Mean Difference		0.04	-0.58	-0.95	0.32	-0.23	-0.30
Confidence Interval (CI)		0.33	0.43	7.46	6.41	0.61	0.50
95% CI	**Upper**	5.25	5.25	59.58	34.50	5.49	3.20
	Lower	4.39	4.39	44.65	21.67	4.27	2.19
Slope of regression		-0.280	-0.743	-0.040	-0.085	0.236	-0.020
R^2		0.034	0.182	0.002	0.003	0.038	0.001
p-value		0.612	0.246	0.907	0.875	0.591	0.973
Deviation from zero?		*Not significant*	*Not significant*	*Not significant*	*Not significant*	*Not significant*	*Not significant*

Table 4. The affected/unaffected ratios for perfusion metrics MTT, rCBF and rCBV for each of the participants in gray matter and white matter.

* Represents significance ($p<0.05$)

GM (Affected/Unaffected Ratio)						
Participant ID	**MTT**		**rCBF**		**rCBV**	
	GBCA	**THx-dOHb**	**GBCA**	**THx-dOHb**	**GBCA**	**THx-dOHb**
1	1.24	1.25	0.92	1.03	1.22	1.39
2	2.29	1.32	0.96	0.90	1.08	1.12
3	1.13	1.04	0.82	0.89	1.09	1.06
4	1.69	1.13	0.78	0.77	1.06	1.45
5	1.09	1.25	0.92	0.94	1.03	1.20
9	1.69	1.27	0.70	0.99	1.20	1.26
11	1.64	1.14	0.82	0.98	1.22	1.19
12	1.18	1.20	0.83	0.91	1.06	1.01
p-value	*0.1484*		*0.0547*		*0.1484*	
WM (Affected/Unaffected Ratio)						
Participant ID	**MTT**		**rCBF**		**rCBV**	
	GBCA	**THx-dOHb**	**GBCA**	**THx-dOHb**	**GBCA**	**THx-dOHb**
1	1.24	1.34	0.95	0.91	1.35	1.66
2	2.02	1.59	0.62	0.82	1.23	1.35
3	1.10	1.10	0.83	0.80	1.05	1.08
4	1.59	1.30	0.70	0.79	1.20	1.64
5	0.99	1.06	0.85	0.53	1.10	1.48
9	1.32	1.39	0.76	0.89	1.16	1.36
11	1.29	1.10	0.84	0.70	1.25	1.58
12	1.14	1.02	0.73	0.79	1.12	1.27
p-value	*0.3125*		*0.9453*		*0.0078**	