

Supplementary Material

***RNF213* p.R4810K (c.14429G>A) variant determines anatomical variations of the circle of Willis in cerebrovascular disease**

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Supplementary Table I. Comparisons of stroke subtypes between large artery atherosclerosis and non-large artery atherosclerosis in the cohort (pages 2–3).

Supplementary Table I. Comparisons of stroke subtypes between large artery atherosclerosis and non-large artery atherosclerosis in the cohort.

	Large artery atherosclerosis (<i>n</i> = 139)	Small-vessel occlusion (<i>n</i> = 135)	Other/undetermined etiology (<i>n</i> = 185)	<i>P</i> -value
Women, <i>n</i> (%)	32 (23)	34 (25)	71 (38)	<0.01
Age, median (IQR), years	73 (61–79)	70 (63–78)	64 (50–78)	<0.01
Prestroke mRS score, median (IQR)	0 (0–0)	0 (0–0)	0 (0–0)	0.82
Baseline systolic BP, median (IQR), mmHg	162 (140–175)	162 (144–177)	162 (143–179)	0.26
Medical history				
Hypertension, <i>n</i> (%)	122 (88)	114 (84)	131 (71)	<0.01
Diabetes mellitus, <i>n</i> (%)	52 (37)	44 (33)	34 (18)	<0.01
Dyslipidemia, <i>n</i> (%)	111 (80)	86 (64)	112 (61)	<0.01
Atrial fibrillation, <i>n</i> (%)	2 (1.4)	1 (0.7)	3 (1.6)	0.88
Current smoking, <i>n</i> (%)	96 (69)	85 (63)	81 (44)	<0.01
Ischemic heart disease, <i>n</i> (%)	12 (9)	7 (5)	7 (4)	0.17
Chronic kidney disease, <i>n</i> (%)	52 (37.4)	46 (34.1)	47 (25.4)	0.05
Baseline NIHSS score, median (IQR)	8 (6–10)	2 (1–4)	5 (2–5)	0.83
ASPECTS on DWI or CT, median (IQR) (<i>n</i> = 465)	10 (10–10)	10.00 (10–10)	10 (9–10)	0.17
Formation of the vessels constituting the circle of Willis				
Both intracranial ICAs, <i>n</i> (%)	131 (94)	132 (98)	182 (98)	0.11
Both A1 segments of ACAs, <i>n</i> (%)	121 (87)	120 (89)	162 (88)	0.92
ACoMA, <i>n</i> (%)	123 (89)	124 (92)	146 (79)	<0.01
Top of BA, <i>n</i> (%)	137 (99)	135 (100)	185 (100)	0.18
Both P1 segments of PCAs, <i>n</i> (%)	104 (75)	108 (80)	149 (81)	0.42
Both PComAs, <i>n</i> (%)	16 (12)	18 (13)	39 (21)	0.06
Focal narrowing of the M1 segment of MCA, <i>n</i> (%)	35 (25)	4 (3)	24 (13)	<0.01
Complete circle of Willis, <i>n</i> (%)	8 (6)	14 (10)	25 (14)	0.07
mRS score at discharge, median (IQR)	2 (1–3)	2 (1–3)	1 (1–3)	0.35

In-hospital mortality, <i>n</i> (%)	0	0	2 (1)	0.34
<i>RNF213</i> p.R4810K (c.14429G>A) variant carriers, <i>n</i> (%)	14 (10)	5 (4)	4 (2)	<0.01

Abbreviations: ACAs, anterior cerebral arteries; AComA, anterior communicating artery; ASPECTS, Alberta Stroke Program Early CT Score; BA, basilar artery; BP, blood pressure; CT, computed tomography; DWI, diffusion-weighted imaging; ICAs, internal carotid arteries; IQR, interquartile range; MCA, middle cerebral artery; mRS, modified Rankin Scale; NIHSS, National Institutes of Health Stroke Scale; PCAs, posterior cerebral arteries; PComAs, posterior communicating arteries.