Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Group characteristics

	No cortical microinfarcts (n = 32)	Acute or chronic cortical microinfarcts (n = 22)	*p*
Baseline demographics			
Age (years)	68 (65 – 70)	73 (67 – 80)	**.01**
Men	17 (53%)	17 (77%)	.07
Level of education	5 (5 – 6)	5 (5 – 6)	.63
Baseline cardiovascular risk factors			
Systolic blood pressure (mmHg)	136 (127 – 147)	145 (136 – 157)	**.04**
Diastolic blood pressure (mmHg)	80 (74 – 86)	83 (78 – 91)	.31
Hypertension	24 (75%)	21 (96%)	.07
Diabetes	4 (13%)	2 (9%)	1.00
Hypercholesterolemia	16 (50%)	11 (50%)	1.00
BMI (kg/m^2)	26 (24 – 28)	26 (23 – 28)	.97
Smoking (ever)	22 (69%)	16 (73%)	.75
Intima media thickness (mm, left/right averaged)	0.71 (0.68 – 0.76)	0.76 (0.68 – 0.93)	.18
Antithrombotic agents	13 (41%)	13 (59%)	.18
Diagnosis of possible CAA	10 (31%)	8 (36%)	.77
Baseline MRI characteristics			
WMH volume (% of WM volume)	0.80 (0.51 – 1.99)	1.54 (0.86 – 3.05)	.14
Lacunes, prevalence	5 (16%)	7 (32%)	.19
Microbleeds, prevalence	14 (44%)	11 (50%)	.65
MD (10^{-4} s/mm^2)	7.85 (7.64 – 8.02)	7.94 (7.76 – 8.34)	.08
Progression of SVD			
n	32	20	
Lacunes, incidence	0 (0%)	3 (15%)	.05
Microbleeds, incidence	2 (6%)	4 (20%)	.19

Note: Data represent median (IQR) or No. (%). Results did not change after excluding one subject with only an acute cortical cerebellar microinfarct. Educational level was assessed using a 7-point Dutch rating scale with 1 indicating primary school not completed and 7 academic degree.[1] For analysis on MD, one subject with a chronic cortical microinfarct was excluded because of severe ringing artefacts on the DWI scan. Diagnosis of possible CAA was defined as the presence of strictly lobar microbleeds.[2]

Two participants with no follow-up MRI were excluded from analyses concerning progression of SVD. For the association between CMI presence and progression of WMH and MD we calculated linear mixed models. Time (relative to baseline MRI) and the presence of any CMI were modeled as fixed effects, with an interaction term, and for each subject a random intercept and slope was included. A significant increase of WMH over time was observed in the entire sample ($p = .008$), though this was not different between participants with and without any CMI ($p = .278$). Similarly, MD significantly increased over time ($p < .001$), but this change was not different between participants with and without any CMI ($p = .858$).

BMI = body mass index. CAA = cerebral amyloid angiopathy. MD = mean diffusivity. WM = white matter. WMH = white matter hyperintensity.

eTable 2. Associations between presence of chronic or acute cortical microinfarcts and baseline cognitive performance

	B (95% CI)	*p*
Model 1		
MMSE	-0.12 (-0.68 – 0.44)	.66
Information processing speed	-0.35 (-0.67 – -0.03)	**.03**
Attention and executive functioning	0.04 (-0.18 – 0.27)	.70
Memory	-0.55 (-0.95 – -0.15)	**.008**
Language	-0.63 (-1.16 – -0.10)	**.02**
Model 2		
Information processing speed	-0.33 (-0.68 – 0.02)	.06
Memory	-0.26 (-0.66 – 0.14)	.20
Language	-0.33 (-0.88 – 0.23)	.25
Model 3		
Information processing speed	-0.33 (-0.67 – 0.02)	.07
Memory	-0.24 (-0.65 – 0.16)	.23
Language	-0.30 (-0.85 – 0.26)	.29

Note: Three participants were color blind and did not perform the Stroop cards II and III.
Model 1: univariate regression
Model 2: multiple regression including age as covariate.
Model 3: multiple regression including age and baseline white matter hyperintensity volume as covariates.
Cognitive domain scores were calculated based upon the following cognitive tests: Information processing speed: Trail Making Test A (TMT-A), Stroop cards I and II, and Symbol Digit Modalities task; attention and executive functioning: TMT-B, Stroop card III, and Brixton Spatial Anticipation Test; memory: total score on immediate recall of the three-trial version of the Rey Auditory Verbal Learning Test (RAVLT), RAVLT delayed recall, RAVLT recognition, and total score of the Digit Span Forward and Backward; language: verbal fluency task.[3] All raw test scores were converted to z-scores using the mean and standard deviation of the entire study sample, and domain scores were calculated as the mean of z-scores. For performance on the Stroop, we first calculated Speed-Accuracy Trade-off scores (accuracy[%] / speed score [s]) to adjust for the number of errors.
MMSE = Mini-Mental State Examination.

References

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