Variable	Age-adjusted	Age & NART (at 1-3 months) adjusted		
	<82 at 1-3 months- (95% CI) and p	value, n=157		
Male sex	1.2 (0.55,2.7) p = 0.64	1.58 (0.66,3.94) p = 0.31		
Number of years of education*	0.68 (0.48, 0.87) p = 0.01	NA		
Worst NIHSS score	1.2 (0.89,1.61) p = 0.23	$1.42 \ (1.01, \ 2.00) \ p = 0.04$		
BDI at 1-3 months	1.04 (1.00, 1.09) p = 0.04	1.03 (0.98,1.08) p = 0.21		
NART at 1-3 months*	0.91 (0.87, 0.95) p = < 0.01	NA		
Non-lacunar stroke subtype	0.69 (0.31-1.51),p= 0.36	0.62 (0.25,1.47) p = 0.28		
Total Fazekas score	0.92 (0.7,1.19) p = 0.51	1.07 (0.0.79,1.45) p = 0.65		
Total no of microbleeds	0.99 (0.89,1.07) p = 0.81	1.02 (0.90,1.15) p = 0.73		
Atrophy score	0.94 (0.77,1.15) p = 0.57	0.93 (0.74,1.15) p = 0.51		
Enlarged periventricular spaces	0.9 (0.76,1.05) p = 0.19	0.92 (0.76,1.10) p = 0.39		
Total SVD score	1.0 (0.72,1.38) p = 0.99	1.17 (0.81,1.68) p = 0.38		
<i>OR of ACE-R</i> <82 <i>at 1 year - (95% C</i>	I) and p value, $n=151$			
Male sex	0.85 (0.37,2) p = 0.7	2.10 (0.69-7.25)p=0.20		
Number of years of education*	0.28 (0.13, 0.52) p = < 0.001	NA		
Worst NIHSS score	1 (0.71,1.38) p = 1	1.17 (0.75,1.77) p = 0.47		
BDI at 1-3 months	1.03 (0.98,1.07) p = 0.23	1.01 (0.95,1.07) p = 0.23		
NART at 1-3 months*	0.92 (0.88, 0.96) p = < 0.0001	NA		
Non-lacunar stroke subtype	0.62 (0.26,1.42), p=0.25	0.47 (0.15,1.38), p=0.18		
Total Fazekas score (Index Scan)	1.32 (1.00, 1.74) p = 0.047	1.58 (1.05, 2.44) p = 0.03		
Total no of microbleeds (Index Scan)	1 (0.9,1.08) p = 0.97	1.05 (0.93,1.16) p = 0.29		
Atrophy score (Index Scan)	1.02 (0.81,1.27) p = 0.85	1.06 (0.79,1.41) p = 0.68		
EPVS (Index Scan)	1.07 (0.88,1.3) p = 0.47	1.15 (0.91,1.44) p = 0.24		
Total SVD score (Index Scan)	1.46 (1.06, 2.04) p = 0.02	1.68 (1.05,2.76)p=0.03		
mRS at 1 year	1.41 (0.92,2.19) p = 0.12	1.57 (0.89,2.84) p = 0.12		
Stroke during follow-up	3.23 (0.87,11.24) p = 0.07	1.69 (0.23,9.60) p = 0.57		
Stroke or TIA during follow-up	2.12 (0.61,6.57) p = 0.21	1.34 (0.20,6.77) p = 0.74		

Supplementary Table 1 Odds of ACE-R<82 in patients with variable compared to patients without the variable

*We did not include education and NART in the same model to avoid multicolinarity.

	Supplementary Figure	1 Upated systematic review of	f cognitive impairment in I	lacunar versus cortical stroke
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tudu an Culomann	Lacunar Cortical Odds Ratio bgroup Events Total Events Total Weight M-H, Random, 95% C			Odds Ratio			
Study or Subgroup I.1.1 Assessed under 1 mor			Events	Iotal	weight	M-H, Random, 95% CI	M-H, Random, 95% Cl
			47		5.00/	0.00.00.00.0001	
Nys 2007	29	64	47	63	5.8%	0.28 [0.13, 0.60]	
Bejot 2011	333	887 951	289	1960 2023	6.7% 12.5%	3.48 [2.89, 4.18]	
Subtotal (95% CI)		951		2023	12.5%	1.02 [0.09, 12.01]	
Total events	362		336	0004	12 000/		
Heterogeneity: Tau ² = 3.10; C		,	P < 0.0	0001);	I ² = 98%		
Test for overall effect: Z = 0.0	1 (P = 0.99)))					
1.1.2 3 months to 1 year afte	r stroke						
Klimkowicz-Mrowiec 2006	2	24	35	149	4.0%	0.30 [0.07, 1.32]	
de Koning 2005	4	20	17	38	4.5%	0.31 [0.09, 1.10]	
Madureira 2001	6	139	5	41	4.6%	0.32 [0.09, 1.13]	
Dong 2012	21	106	31	97	6.0%	0.53 [0.28, 1.00]	
Censori 1996	2	21	13	83	3.8%	0.57 [0.12, 2.73]	
Pohjasvaara 1998	5	21	102	316	5.1%	0.66 [0.23, 1.84]	
Sachdev 2006	24	46	74	120	5.9%	0.68 [0.34, 1.35]	
Patel 2002	72	218	124	297	6.5%	0.69 [0.48, 0.99]	
Yang 2015	15	291	51	848	6.1%	0.85 [0.47, 1.53]	
Tang 2004	33	166	18	90	6.0%	0.99 [0.52, 1.89]	
Tatemichi 1994	21	59	59	168	6.1%	1.02 [0.55, 1.90]	
Lin 2003	13	136	13	147	5.6%	1.09 [0.49, 2.44]	
Subtotal (95% CI)		1247		2394	64.4%	0.72 [0.59, 0.88]	\bullet
Total events	218		542				
Heterogeneity: Tau ² = 0.00; C	hi² = 9.27,	df = 11	(P = 0.6	0); I ² =	0%		
Test for overall effect: Z = 3.2	2 (P = 0.00	01)					
1.1.3 Over 1 year after strok	е						
Tatemichi 1990	25	227	91	499	6.3%	0.55 [0.35, 0.89]	
Cordoliani-Mackowiak 2003		31	24	101	5.4%	1.12 [0.44, 2.82]	
Rasquin 2005	40	57	59	87	5.8%	1.12 [0.54, 2.30]	
Us	14	63	15	88	5.6%	1.39 [0.62, 3.14]	
Subtotal (95% CI)		378		775	23.2%	0.91 [0.57, 1.46]	
Total events	87		189			-	
Heterogeneity: Tau ² = 0.10; C		df = 3); ² = 4	4%		
Test for overall effect: Z = 0.4			,	,			
Total (95% CI)		2576		5192	100.0%	0.75 [0.47, 1.20]	
Total events	667	2010	1067	0.01		5.10 [3.41, 1. 2 0]	-
Heterogeneity: Tau ² = 0.84; C		12 df -			1). 12 = 000/	-	
Test for overall effect: Z = 1.1					i), i = 30%	0	0.1 0.2 0.5 1 2 5 10
							Cortical Lacunar

Supplementary Table 2 Studies in the updated systematic review

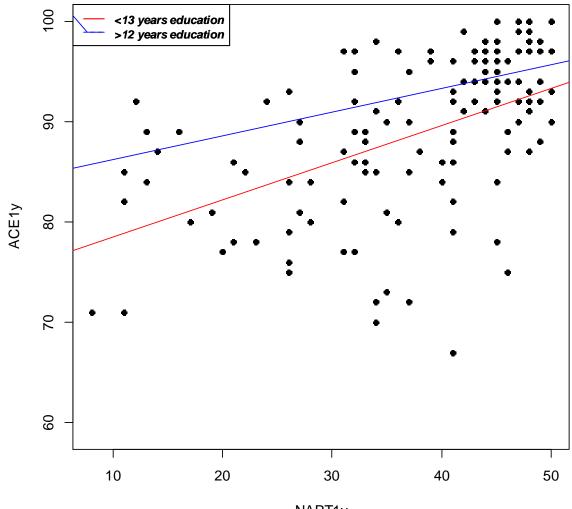
Reference	Setting	Total patients consented / total tested	Timing of tests post- stroke	Test done	Sub- typing	Primary outcome	Results
Nys 2007	Hospital Netherlands	190/168 ^A	3 weeks	NP ^B	Imaging	MCI ^C	29/64 (45%) Lacunar 47/63 (75%) Non-lacunar
Sachdev 2006	Hospital Australia	210/170 ^A	3-6 months	NP	Risk factor	Dementia or MCI	24/46 (52%) Lacunar 74/120 (62%) Non-lacunar
De Koning 2005	Hospital Netherlands	130/121 ^A	3-9 months	NP	Imaging	Dementia	4/20 (20%) Lacunar 17/38 (45%) Non-lacunar
Censori 1996	Hospital Italy	121/110 ^F	3-4 Months	NP & MMSE ^G	Clinical	Dementia	2/21 (10%) Lacunar 13/83 (16%)Non-lacunar
Tatemichi 1990	Hospital USA	927/726	2 years	Clinica l impre ssion	Risk factor	Dementia	25/227 (11%) Lacunar 91/499 (18%) Non-lacunar
Bejot 2011	Community France	3948/3201 ⁴	1 month	NP	Risk factor	Dementia	333/887 (38%) Lacunar 289/1960 (15%) Non-lacunar
Lin 2003	Hospital Taiwan	353/283	3 months	NP	Risk factor	Dementia	13/136 (10%) Lacunar 13/147 (9%) Non-lacunar
Patel 2002,2003	Community UK	1454/654 ⁴	3 months	MMSE	Clinical	MMSE < 24	72/218 (33%) Lacunar 124/297 (42%) Non-lacunar
Cordoliani- Mackowiak 2003	Hospital France	132/88 ^H	Up to 3 years	NP	Risk factor	Dementia	8/31 (26%) Lacunar 24/101 (24%) Non-lacunar
Rasquin 2004,2005,2007	Hospital Netherlands	176/144	1 years.	NP	Imaging	MCI or Dementia	40/57 (70%)Lacunar 59/87 (68%) Non-lacunar ⁱ
Pohjasvaara 1998	Hospital Finland	451/337	3 months	NP	Risk factor	Dementia	5/21 (24%) Lacunar 102/316 (32%) Non-lacunar

Reference	Setting	Total patients consented / total tested	Timing of tests post- stroke	Test done	Sub- typing	Primary outcome	Results
Tang 2004	Hospital China	484/280 ^A	3 months	MMSE	Imaging	Dementia	33/166 (20%) Lacunar 18/90 (20%) Non-lacunar
Madureira 2001	Hospital Portugal	180/165	3 months	NP	Imaging	Dementia	6/139 (4.3%) Lacunar 5/41 (12%) Non- lacunar
Klimkowicz- Mrowiec 2006	Hospital Poland	173/145 ^{+*}	3 months	NP & MMSE	Clnical	Dementia	2/24 (8%) Lacunar 35/149 (23%) Non-lacunar
Dong 2012	Hospital Singapore	300/239 ^A	3-6 months	NP, MMSE , and MoCA	Risk factor	Moderate MCI	21/106 (20%) Lacunar 31/97 (33%) Non-lacunar
Tatemichi 1994	Hospital USA	Not stated/227	3 months	NP	Clinical	MCI	21/59 (36%) Lacunar 59/168 (35%) Non-lacunar
Tay 2006	Hospital Singapore	216/169	9 days	MMSE	Clinical	NA	Mean MMSE Non-lacunar (anterior circulation)18.2 Lacunar 22.9
Mok 2004	Hospital China	86/75	3 months (K)	MMSE and Clinica I Deme ntia Rating scale.	Imaging	Dementia	10/75 (13%) Mean MMSE: 24.8 lacunar, 27.7 healthy controls
Samuelsson 1996	Hospital Sweden	100/81	2 years	MMSE & NP if impair ed.	Clinical	Dementia	8/81 (10%)
Anderson 2008	Community Australia	Not stated/30	1 year	NP	Clinical	MCI	2/30 (7%)
Loeb 1992	Hospital Italy	Not stated/108	Up to 4 years	MMS E	Clinical	Dementi a	25/108 (23%)
Fure 2006	Hospital Norway	71/64 ^H	2-7 days	NP	Risk factor	MCI	41/71 (58%)
Barker-Collo 2012	Community New Zealand	357/336	5 years	NP	Clinical	Cognitio n test	No difference in mean test scores

Reference	Setting	Total patients consented / total tested	Timing of tests post- stroke	Test done	Sub- typing	Primary outcome	Results
						results.	
Appelros 2005	Community Sweden	253/232 ^A	1 year	MMS E	Risk factor	Mean MMSE scores	Mean MMSE Non-lacunar 25.6 Lacunar 26.6
Yang 2015	Hospital China	1139/2078	3-6 Months	MMS E,	Risk Factor	CDR	15/291 5% lacunar
				CDR, MocA			51/848 6% nonlacunar

(A) Includes subjects with haemorrhagic stroke / transient ischaemic attack (TIA), (B) Full neuropsychological testing, (C) Mild cognitive impairment, (D) 14 haemorrhagic strokes included in these figures, (E) Sub-type reported only in patients who had a visible lesion on CT. (F) Six subjects with specific cognitive impairment excluded, (G)Mini-Mental state (H) Data reported on subjects who could not have full tests. (I) calculated from reported odds ratio, (J) Calculated from chi-squared statistic,(K) The 61 non-demented patients were followed up 2-3 years later, no information on the outcome of those who did have dementia at 3 months²⁶⁴

Supplementary Figure 2 Relationship between ACE-R and NART for patients with different levels of education



NART1y

Supplementary Table 3 multiple regression of relationship between NART and Years of Education including an interaction term.

Beta (95% CI)
0.4 (95%CI: -0.095,0.89)
0.61 (95%CI: -1.31,2.52)
0.17 (95%CI: -0.27,-0.72)
-0.0028 (95%CI: -0.047,0.042)