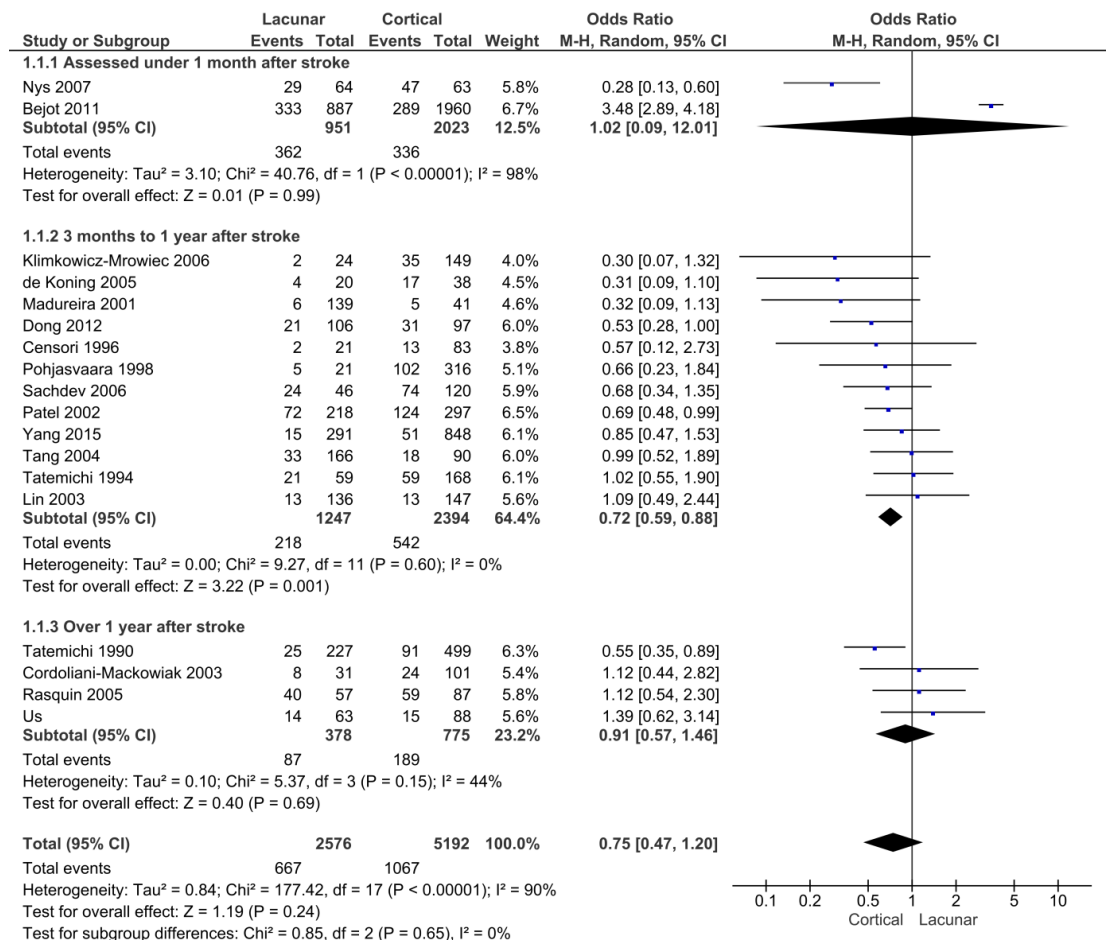


Supplementary Table 1 Odds of ACE-R<82 in patients with variable compared to patients without the variable

Variable	Age-adjusted	Age & NART (at 1-3 months) adjusted
<i>OR of ACE-R&lt;82 at 1-3 months- (95% CI) and p value, n=157</i>		
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*	<b>0.68 (0.48,0.87) p = 0.01</b>	NA
Worst NIHSS score	1.2 (0.89,1.61) p = 0.23	<b>1.42 (1.01, 2.00) p = 0.04</b>
BDI at 1-3 months	<b>1.04 (1.00,1.09) p = 0.04</b>	1.03 (0.98,1.08) p = 0.21
NART at 1-3 months*	<b>0.91 (0.87,0.95) p = &lt;0.01</b>	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 (0.79,1.45) 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&lt;82 at 1 year - (95% CI) and p value, n=151</i>		
Male sex	0.85 (0.37,2) p = 0.7	2.10 (0.69-7.25)p=0.20
Number of years of education*	<b>0.28 (0.13,0.52) p = &lt;0.001</b>	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*	<b>0.92 (0.88,0.96) p = &lt;0.0001</b>	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)	<b>1.32 (1.00,1.74) p = 0.047</b>	<b>1.58 (1.05,2.44) p = 0.03</b>
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)	<b>1.46 (1.06,2.04) p = 0.02</b>	<b>1.68 (1.05,2.76) p=0.03</b>
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

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

Supplementary Figure 1 Updated systematic review of cognitive impairment in lacunar versus cortical stroke



Supplementary Table 2 Studies in the updated systematic review

<i>Reference</i>	<i>Setting</i>	<i>Total patients consented / total tested</i>	<i>Timing of tests post-stroke</i>	<i>Test done</i>	<i>Sub-typing</i>	<i>Primary outcome</i>	<i>Results</i>
Nys 2007	Hospital Netherlands	190/168 <sup>A</sup>	3 weeks	NP <sup>B</sup>	Imaging	MCI <sup>C</sup>	29/64 (45%) Lacunar 47/63 (75%) Non-lacunar
Sachdev 2006	Hospital Australia	210/170 <sup>A</sup>	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 <sup>A</sup>	3-9 months	NP	Imaging	Dementia	4/20 (20%) Lacunar 17/38 (45%) Non-lacunar
Censori 1996	Hospital Italy	121/110 <sup>F</sup>	3-4 Months	NP & MMSE <sup>G</sup>	Clinical	Dementia	2/21 (10%) Lacunar 13/83 (16%) Non-lacunar
Tatemichi 1990	Hospital USA	927/726	2 years	Clinical impression	Risk factor	Dementia	25/227 (11%) Lacunar 91/499 (18%) Non-lacunar
Bejot 2011	Community France	3948/3201 <sup>A</sup>	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 <sup>A</sup>	3 months	MMSE	Clinical	MMSE < 24	72/218 (33%) Lacunar 124/297 (42%) Non-lacunar
Cordoliani-Mackowiak 2003	Hospital France	132/88 <sup>H</sup>	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 <sup>I</sup>
Pohjasvaara 1998	Hospital Finland	451/337	3 months	NP	Risk factor	Dementia	5/21 (24%) Lacunar 102/316 (32%) Non-lacunar

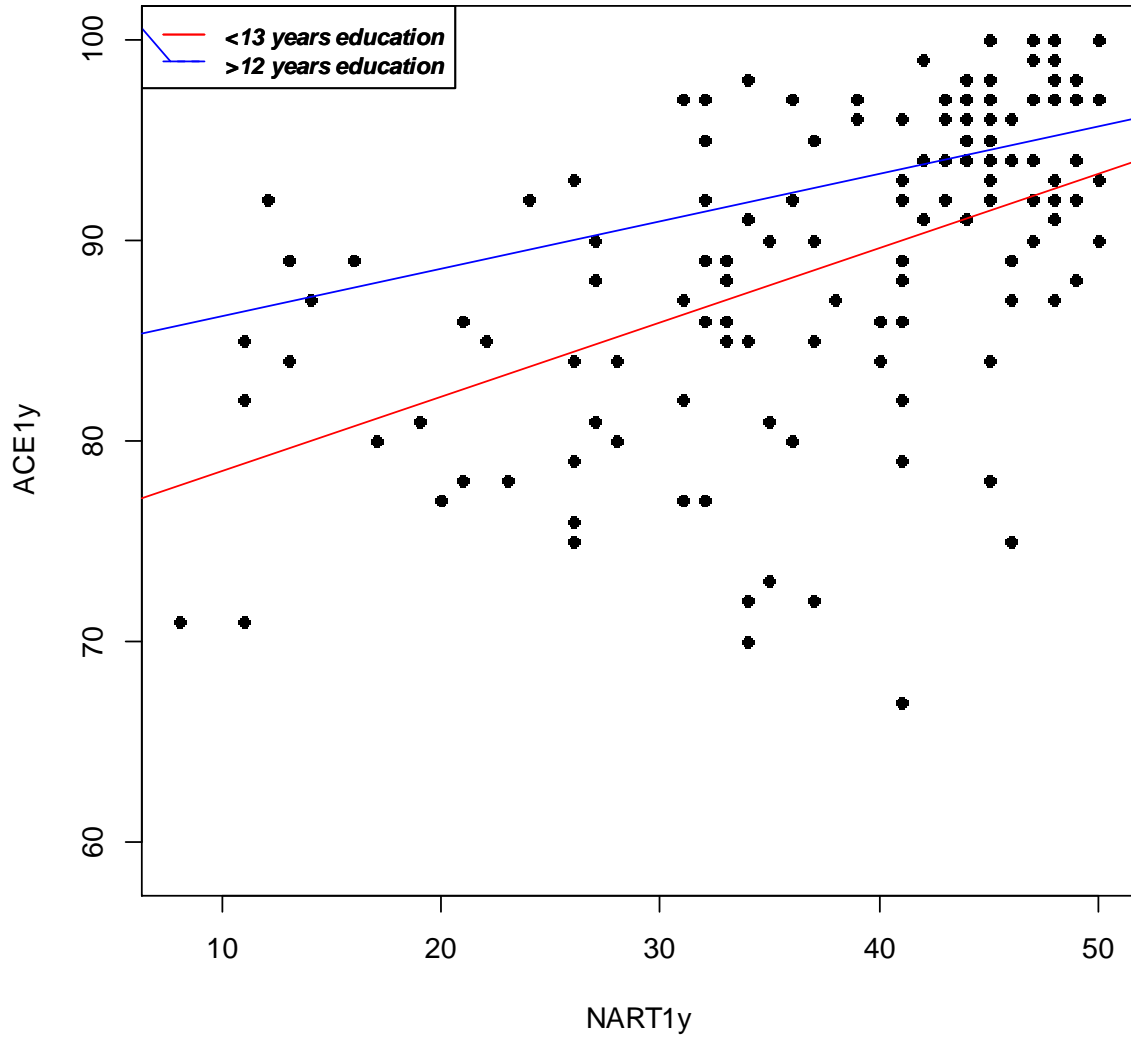
<i>Reference</i>	<i>Setting</i>	<i>Total patients consented / total tested</i>	<i>Timing of tests post-stroke</i>	<i>Test done</i>	<i>Sub-typing</i>	<i>Primary outcome</i>	<i>Results</i>
Tang 2004	Hospital China	484/280 <sup>A</sup>	3 months	MMSE	Imaging	Dementia	33/166 (20%) Lacunar 18/90 (20%) Non-lacunar
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 <sup>H*</sup>	3 months	NP & MMSE	Clinical	Dementia	2/24 (8%) Lacunar 35/149 (23%) Non-lacunar
Dong 2012	Hospital Singapore	300/239 <sup>A</sup>	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 Clinical Dementia 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 impaired.	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	Dementia	25/108 (23%)
Fure 2006	Hospital Norway	71/64 <sup>H</sup>	2-7 days	NP	Risk factor	MCI	41/71 (58%)
Barker-Collo 2012	Community New Zealand	357/336	5 years	NP	Clinical	Cognition test	No difference in mean test scores

<i>Reference</i>	<i>Setting</i>	<i>Total patients consented / total tested</i>	<i>Timing of tests post-stroke</i>	<i>Test done</i>	<i>Sub-typing</i>	<i>Primary outcome</i>	<i>Results</i>
Appelros 2005	Community Sweden	253/232 <sup>A</sup>	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, CDR, MocA	Risk Factor	CDR	15/291 5% lacunar 51/848 6% nonlacunar

results.

(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 months<sup>264</sup>

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



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

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	<b><i>Beta (95% CI)</i></b>
NART 1y	0.4 ( 95%CI: -0.095,0.89)
Years of Education	0.61 ( 95%CI: -1.31,2.52)
Age	0.17 ( 95%CI: -0.27,-0.72)
NART 1y * Years Of Education (interaction term)	-0.0028 ( 95%CI: -0.047,0.042)

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