

Supplementary Table 1. Vascular disease and its association with AD+P

Variable	Psychosis Status			Total N (%)	χ^2	df	p value
	Never N (%)	Single N (%)	Multiple/Recurrent N (%)				
History of Diabetes					6.935	2	0.031
Absent	1067 (88.5)	356 (88.1)	226 (82.8)	1649 (87.6)			
Present	138 (11.5)	48 (11.9)	47 (17.2)	233 (12.4)			
History of Hypertension					6.414	2	0.04
Absent	629 (41.7)	186 (37.9)	107 (34.6)	922 (39.9)			
Present	880 (58.3)	305 (62.1)	202 (65.4)	1387 (60.1)			
History of stroke					2.776	2	0.25
Absent	1369 (90.7)	451 (91.9)	273 (88.3)	2093 (90.6)			
Present	140 (9.3)	40 (8.1)	36 (11.7)	216 (9.4)			
Focal neurological symptoms					0.515	2	0.773
Absent	1407 (93.2)	462 (94.1)	290 (93.9)	2159 (93.5)			
present	102 (6.8)	29 (5.9)	19 (6.1)	150 (6.5)			
Focal neurological signs					2.179	2	0.336
Absent	1355 (89.8)	448 (91.2)	272 (88.0)	2075 (89.9)			
Present	154 (10.2)	43 (8.8)	37 (12.0)	234 (10.1)			
CVD impacts cognition^a					0.458	2	0.796
No	664 (88.2)	194 (89.8)	157 (88.2)	1015 (88.5)			
Yes	89 (11.8)	22 (10.2)	21 (11.8)	132 (11.5)			
Stroke impacts cognition^b					0.614	2	0.736
No	294 (95.5)	91 (95.8)	76 (97.4)	461 (95.8)			
yes	14 (4.5)	4 (4.2)	2 (2.6)	20 (4.2)			
CVD imaging evidence on cognition^c					2.823	2	0.244
No	528 (89.2)	160 (90.4)	110 (84.6)	798 (88.8)			
yes	64 (10.8)	17 (9.6)	20 (15.4)	101 (11.2)			

Single infarct^d					0.453	2	0.797
No	43 (67.2)	12 (70.6)	15 (75.0)	70 (69.3)			
Yes	21 (32.8)	5 (29.4)	5 (25.0)	31 (30.7)			
Multiple infarcts^e							
No	46 (71.9)	13 (76.5)	15 (75.0)	74 (73.3)	0.183	2	0.913
yes	18 (28.1)	4 (23.5)	5 (25.0)	27 (26.7)			
Extensive white matter^f							
No	38 (59.4)	7 (41.2)	8 (40.0)	53 (52.5)	3.340	2	0.188
Yes	26 (40.6)	10 (58.8)	12 (60.0)	48 (47.5)			
Other imaging evidence^g							
No	45 (70.3)	12 (70.6)	16 (80.0)	73 (72.3)	0.743	2	0.690
Yes	19 (29.7)	5 (29.4)	4 (20.0)	28 (27.7)			

Abbreviations: AD+P, Alzheimer Disease plus psychosis; CVD, Cerebral vascular disease

UDS definitions are as follows: ^a: CVD is contributing to the cognitive impairment

^b: there is a temporal relationship between stroke and onset of cognitive impairment

^c: there is imaging evidence which supports that CVD is contributing to the cognitive impairment

^d: imaging evidence exists of a single infarct

^e: imaging evidence exists of multiple infarcts

^f: imaging evidence exists of extensive white matter hyperintensity

^g: other imaging evidence exists

Supplementary Table 2. Vascular disease and its association with AD+P with Never Psychotic (AD-P) cases restricted to CDR_{sbc} ≥ 1

Variable	Psychosis Status			Total N (%)	χ^2	df	p value
	Never N (%)	Single N (%)	Multiple/Recurrent N (%)				
History of Diabetes					8.391	2	0.015
Absent	848 (89.3)	356 (88.1)	226 (82.8)	1430 (87.9)			
Present	102 (10.7)	48 (11.9)	47 (17.2)	197 (12.1)			
History of Hypertension					5.504	2	0.064
Absent	471 (41.5)	186 (37.9)	107 (34.6)	764 (39.5)			
Present	664 (58.5)	305 (62.1)	202 (65.4)	1171 (60.5)			
History of stroke					2.699	2	0.259
Absent	1026 (90.4)	451 (91.9)	273 (88.3)	1750 (90.4)			
Present	109 (9.6)	40 (8.1)	36 (11.7)	185 (9.6)			
Focal symptoms					0.496	2	0.78
Absent	1058 (93.2)	462 (94.1)	290 (93.9)	1810 (93.5)			
Present	77 (6.8)	29 (5.9)	19 (6.1)	125 (6.5)			
Focal signs					2.180	2	0.336
Absent	1019 (89.8)	448 (91.2)	272 (88.0)	1739 (89.9)			
Present	116 (10.2)	43 (8.8)	37 (12.0)	196 (10.1)			
CVD impacts cognition					0.504	2	0.777
No	485 (88.0)	194 (89.8)	157 (88.2)	836 (88.5)			
Yes	66 (12.0)	22 (10.2)	21 (11.8)	109 (11.5)			
Stroke impacts cognition					0.830	2	.066
No	209 (95.0)	91 (95.8)	76 (97.4)	376 (95.7)			
Yes	11 (5.0)	4 (4.2)	2 (2.6)	17 (4.3)			
CVD imaging evidence on cognition					2.574	2	0.276
No	388 (88.8)	160 (90.4)	110 (84.6)	658 (88.4)			
Yes	49 (11.2)	17 (9.6)	20 (15.4)	86			

				(11.6)			
Single infarct					0.094	2	0.954
No	36 (73.5)	12 (70.6)	15 (75.0)	63 (73.3)			
Yes	13 (26.5)	5 (29.4)	5 (25.0)	23 (26.7)			
Multiple infarcts					0.719	2	0.698
No	33 (67.3)	13 (76.5)	15 (75.0)	61 (70.9)			
Yes	16 (32.7)	4 (23.5)	5 (25.0)	25 (29.1)			
Extensive white matter					1.330	2	0.514
No	26 (53.1)	7 (41.2)	8 (40.0)	41 (47.7)			
Yes	23 (46.9)	10 (58.8)	12 (60.0)	45 (52.3)			
Other imaging evidence					0.498	2	0.780
No	38 (77.6)	12 (70.6)	16 (80.0)	66 (76.7)			
Yes	11 (22.4)	5 (29.4)	4 (20.0)	20 (23.3)			

Abbreviations: AD+P, Alzheimer Disease plus psychosis; CVD, Cerebral vascular disease

UDS definitions are as follows: ^a: CVD is contributing to the cognitive impairment

^b: there is a temporal relationship between stroke and onset of cognitive impairment

^c: there is imaging evidence which supports that CVD is contributing to the cognitive impairment

^d: imaging evidence exists of a single infarct

^e: imaging evidence exists of multiple infarcts

^f: imaging evidence exists of extensive white matter hyperintensity

^g: other imaging evidence exists