On-line Table 1: Excluded studies after article examination with reasons

Studies	Reasons
Atri et al, 2005[48]	Mixed group (dementia)
Brundel et al, 2012[39]	Mixed group (AD/MCI)
Gurol et al, 2013[49]	Mixed group (AD/MCI)
Danve et al, 2014[50]	Case series/no prevalence reported
Ghostine et al, 2009[51]	Case report
Goos et al, 2009[8]	Case control cross-sectional study
Henneman et al, 2009[52]	No prevalence reported
Heringa et al, 2014[2]	Mixed group (AD/aMCI)
Hilal et al, 2014[53]	Mixed group (CIND/dementia)
Kimberly et al, 2009[54]	Mixed group (AD/MCI)
Ku and Chi, 2011[55]	No empiric data/review/hypothesis
Kuijf et al, 2013[56]	Mixed group (dementia)
Ii et al, 2013[57]	Mixed group (AD sporadic and familial)
Pettersen et al, 2008[36]	Case control
Shams et al, 2015[25,26]	Included atypical AD
van Assema et al, 2012[58]	Cross-sectional (comparing AD+MBs with AD)
van Rooden et al, 2014[59]	No prevalence reported
van Veluw et al, 2014[60]	Mixed group (AD/MCI)
Vidal et al, 2010[61]	No prevalence/mixed group (dementia)
Wollenweber et al, 2014[62]	Mixed group (dementia)
Yates et al, 2011[63]	Double data with Yeats et al, 2014[63]
Yokoyama et al, 2014[64]	No prevalence reported/not specific to MB prevalence

Note:—CIND indicates cognitive impairment no dementia; aMCI, amnestic MCI.

On-line Table 2: Demographic representation of the studies meeting selection criteria (*n* = 16 studies, provided 17 prevalence)

Studies	Mean Age AD (SD) (yr)	Global Cognition	% Male AD	AD Diagnosis (Possible/Probable)	Immunotherapy/ Apoe-E4/ Antiplatelet	Hypertension, Explicitly Controlled, Yes/No (%)	Quality (of 21)
Benedictus et al, 2013[28]	67 (9) 75 (8) 68 (9) 74 (10)	MMSE = 20.3 (5.1) MMSE = 20.6 (4.5) MMSE = 19.3 (5.3) MMSE = 20.6 (3.7)	45	McKhann et al, 1984[23] (probable)	NR/yes/NR	Yes (35)	20
Cordonnier et al, 2006[7]	70 (9)	MMSEa = 20 (6)	40	McKhann et al, 1984[23] (NS)	NR/yes/NR	Yes (34)	19
Fukui et al, 2013[21],a	79.5 (5.4)	NA	47	McKhann et al, 1984[23] (NS)	NR/NR/yes		18
Goos et al, 2011[22]	NS	NS	NS	Not reported	NR/yes/yes	Yes (59)	18
Kester et al, 2014[29],a	67 (8)	MMSEa: 21 (5)	46	McKhann et al, 1984[23] (probable)	NR/yes/NR		19
Kirsch et al, 2009[4]	78.9 (NR)	NA	46	Typical AD (NR)	NR/NR/NR	No	21
Nagasawa et al, 2014[20]	78.4 (7.7)	MMSEa = 20.2 (4.1)	43	DSM-IV and McKhann et al, 1984[23] (NS)	NR/NR/yes	Yes (36)	17
Nagata et al, 2012[40]	75.6 (NR)	NA	34	McKhann et al, 1984[23] (probable)	NR/yes/NR	No	20
Nakada-Kudo et al, 2006[41],b	74.3 (7.7)	MMSEw = 19.3 (5.4) MMSEb = 21.3 (3.8)	29	DSM-IV and McKhann et al, 1984[23] (mixed)	NR/NR/yes	Yes (45)	18
Park et al, 2013[42]	74.5 (8.2) 76.6 (5.9)	NA	45	McKhann et al, 1984[23] (probable)	NR/yes/NR	Yes (43)	20
Qiu et al, 2010[43]	NA	NA	NA	McKhann et al, 1984[23] (mixed)	NR/NR/NR	Yes (cannot tell)	19
Staekenborg et al, 2009[44]	72 (7)	MMSEa 26 (2)	41	McKhann et al, 1984[23] (NS)	NR/NR/NR	No	21
Uetani et al, 2013[24]	75 (9)	MMSEa = 20 (4)	33	McKhann et al, 1984[23] (probable)	NR/NR/NR	Yes (41)	20
van der Vlies, et al, 2012[45]	68 (9)	MMSEa = 22 (4)	51	McKhann et al, 1984[23] (probable)	NR/yes/cannot tell	Yes (31)	20
Yates et al, 2014[46],b	74.6 (8.4)	MMSEa = 21.4 (5.2)	40	McKhann et al, 1984[23] (NS)	NR/yes/yes	No	21
Zonneveld et al, 2014[47]	68 (9)	MMSEa = 21 (5)	47	McKhann et al, 1984[23] (probable)	NR/yes/yes	No	21
Postupdate							
Olazarán et al, 2014[27]	NS	NR	NS	NR	NR/NS/NS	Yes (NS)	16

Note:—NA indicates not assessed or appropriate for the study; NR, examined but not reported; NS, not specified; *Apoe e4, apolipoprotein e4*; DSM-IV, *Diagnostic and Statistical Manual of Mental Disorders, 4th Edition*. MMSEb, Mini-Mental State Examination for microbleeds; MMSEw, without microbleeds; MMSEa, all of the AD sample.
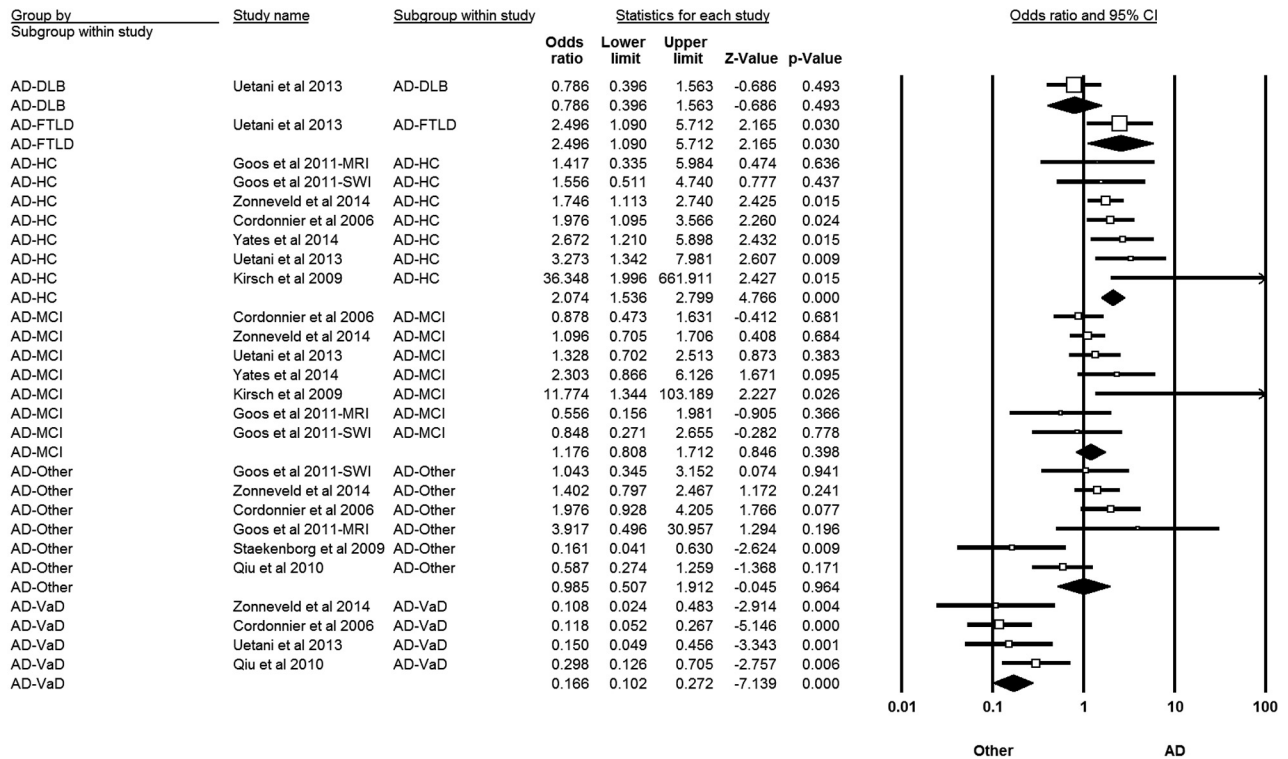
a Studies are excluded, given a mixed technique or specific imaging variables of interest not reported.

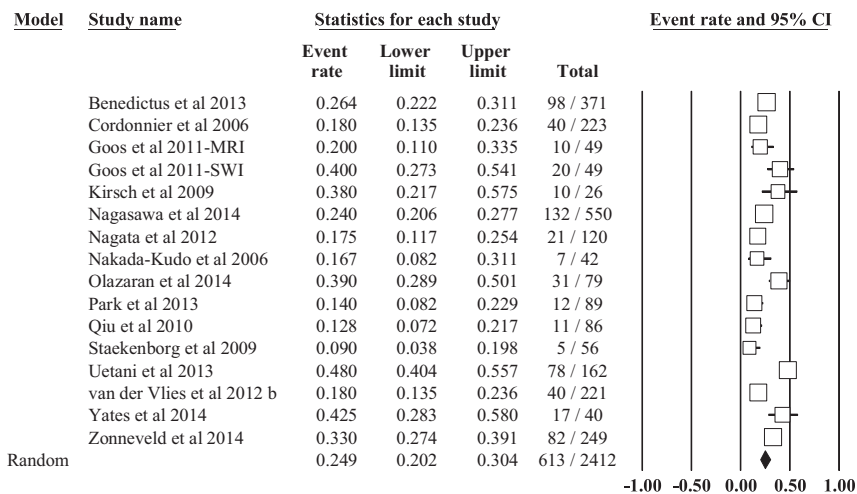b Reported duplicate data with excluded studies.

On-line Table 3: MB prevalence change in AD as a function of moderating variable (total *n* = 14 studies with 15 reported prevalence)

Variables	Subvariables	No. of Outcome	Point Estimate	Lower Limit	Upper Limit	Q-Value	df (Q)	P Value	I²
			Effect Size and 95% CI			Heterogeneity			
All studies	–	15	0.2408	0.1931	0.2959	99.9880	14	<.001	85.9983
AD diagnosis	(Probable/possible)	2	0.1418	0.0912	0.2138	0.3529	1	.5525	0.0000
	NS	6	0.2349	0.1712	0.3133	19.9814	5	.0013	74.9767
	Probable	7	0.2712	0.1943	0.3648	62.5353	6	<.001	90.4054
MB location	Cortical	1	0.3300	0.2744	0.3908	0.0000	0	1.0000	0.0000
	Global/diffuse	11	0.2434	0.1873	0.3098	79.8028	10	<.001	87.4691
	NR	1	0.1750	0.1170	0.2536	0.0000	0	1.0000	0.0000
	Subcortical	2	0.2000	0.0402	0.5989	8.7265	1	.0031	88.5407
MBs definition	<10	13	0.2515	0.1989	0.3126	93.4492	12	<.001	87.1588
	NS	2	0.1730	0.1222	0.2391	0.0139	1	.9061	0.0000
Apoe-ε4 carrier status reported	Mixed groups	2	0.2944	0.1377	0.5215	4.5254	1	.0334	77.9024
	NR	6	0.2301	0.1361	0.3617	56.0636	5	<.001	91.0816
	Yes	7	0.2306	0.1766	0.2951	35.1571	6	<.001	82.9338
Infarct-lacunae	Not specified	10	0.2397	0.1959	0.2899	33.3352	9	.0001	73.0015
	Yes	5	0.2277	0.1285	0.3710	52.6506	4	<.001	92.4027
Hemorrhage	NR	14	0.2396	0.1851	0.3041	98.5704	13	<.001	86.8115
	Yes	1	0.2400	0.2061	0.2775	0.0000	0	1.0000	0.0000
Stroke	Exclusionary	1	0.4250	0.2831	0.5804	0.0000	0	1.0000	0.0000
	NR	14	0.2310	0.1839	0.2860	94.4054	13	<.001	86.2296
Scanner	GE Healthcare	3	0.2454	0.1681	0.3438	12.6218	2	.0018	84.1544
	Philips	2	0.1491	0.0977	0.2209	0.1640	1	.6855	0.0000
	Siemens	8	0.2732	0.1782	0.3945	70.4237	7	<.001	90.0602
	Unknown	2	0.2156	0.1593	0.2850	2.3392	1	.1262	57.2510
Techniques	EPI	3	0.1918	0.1220	0.2884	9.2877	2	.0096	78.4661
	GRE	7	0.1830	0.1486	0.2233	12.6674	6	0.0486	52.6345
	SWI	5	0.4014	0.3299	0.4774	9.4008	4	.0518	57.4505
Postupdate									
All studies	–	16	0.249	0.202	0.304	106.500	15	<.001	85.916
AD diagnosis	Probable	8	0.281	0.209	0.366	64.0459	7	<.001	89.073
Scanner	GE Healthcare	4	0.276	0.201	0.366	16.970	3	.0007	82.322
Techniques	EPI	4	0.232	0.152	0.336	18.328	3	<.001	83.631
MB definition	<10	14	0.261	0.209	0.320	99.307	13	<.001	86.909
MB location	Global	12	0.254	0.199	0.320	86.750	11	<.001	87.320
Section orientation	Axial	14	0.254	0.198	0.320	102.008	13	<.001	87.256

Note:—NS indicates not specified; NR, not reported.

Group by / Subgroup within study	Study name	Subgroup within study	Statistics for each study					Odds ratio and 95% CI
			Odds ratio	Lower limit	Upper limit	Z-Value	p-Value	
AD-DLB	Uetani et al 2013	AD-DLB	0.786	0.396	1.563	-0.686	0.493	
AD-DLB			0.786	0.396	1.563	-0.686	0.493	
AD-FTLD	Uetani et al 2013	AD-FTLD	2.496	1.090	5.712	2.165	0.030	
AD-FTLD			2.496	1.090	5.712	2.165	0.030	
AD-HC	Goos et al 2011-MRI	AD-HC	1.417	0.335	5.984	0.474	0.636	
AD-HC	Goos et al 2011-SWI	AD-HC	1.556	0.511	4.740	0.777	0.437	
AD-HC	Zonneveld et al 2014	AD-HC	1.746	1.113	2.740	2.425	0.015	
AD-HC	Cordonnier et al 2006	AD-HC	1.976	1.095	3.566	2.260	0.024	
AD-HC	Yates et al 2014	AD-HC	2.672	1.210	5.898	2.432	0.015	
AD-HC	Uetani et al 2013	AD-HC	3.273	1.342	7.981	2.607	0.009	
AD-HC	Kirsch et al 2009	AD-HC	36.348	1.996	661.911	2.427	0.015	
AD-HC			2.074	1.536	2.799	4.766	0.000	
AD-MCI	Cordonnier et al 2006	AD-MCI	0.878	0.473	1.631	-0.412	0.681	
AD-MCI	Zonneveld et al 2014	AD-MCI	1.096	0.705	1.706	0.408	0.684	
AD-MCI	Uetani et al 2013	AD-MCI	1.328	0.702	2.513	0.873	0.383	
AD-MCI	Yates et al 2014	AD-MCI	2.303	0.866	6.126	1.671	0.095	
AD-MCI	Kirsch et al 2009	AD-MCI	11.774	1.344	103.189	2.227	0.026	
AD-MCI	Goos et al 2011-MRI	AD-MCI	0.556	0.156	1.981	-0.905	0.366	
AD-MCI	Goos et al 2011-SWI	AD-MCI	0.848	0.271	2.655	-0.282	0.778	
AD-MCI			1.176	0.808	1.712	0.846	0.398	
AD-Other	Goos et al 2011-SWI	AD-Other	1.043	0.345	3.152	0.074	0.941	
AD-Other	Zonneveld et al 2014	AD-Other	1.402	0.797	2.467	1.172	0.241	
AD-Other	Cordonnier et al 2006	AD-Other	1.976	0.928	4.205	1.766	0.077	
AD-Other	Goos et al 2011-MRI	AD-Other	3.917	0.496	30.957	1.294	0.196	
AD-Other	Staekenborg et al 2009	AD-Other	0.161	0.041	0.630	-2.624	0.009	
AD-Other	Qiu et al 2010	AD-Other	0.587	0.274	1.259	-1.368	0.171	
AD-Other			0.985	0.507	1.912	-0.045	0.964	
AD-VaD	Zonneveld et al 2014	AD-VaD	0.108	0.024	0.483	-2.914	0.004	
AD-VaD	Cordonnier et al 2006	AD-VaD	0.118	0.052	0.267	-5.146	0.000	
AD-VaD	Uetani et al 2013	AD-VaD	0.150	0.049	0.456	-3.343	0.001	
AD-VaD	Qiu et al 2010	AD-VaD	0.298	0.126	0.705	-2.757	0.006	
AD-VaD			0.166	0.102	0.272	-7.139	0.000	

0.01 0.1 1 10 100

Other   AD

ON-LINE FIG 1. MB comparison between AD and other dementia. The *hollow squares* show the prevalence difference in magnitude with attached confidence interval bars for each study; the *bold diamonds* represent the aggregate differences for each group of dementia comparisons. HC indicates healthy control/subjective cognitive impairment; Other, mixed dementias; DLB, Lewy body dementia; FTLD, frontotemporal lobar dementia; VaD, vascular dementia.

Model	Study name	Statistics for each study				Event rate and 95% CI
		Event rate	Lower limit	Upper limit	Total	
	Benedictus et al 2013	0.264	0.222	0.311	98 / 371	
	Cordonnier et al 2006	0.180	0.135	0.236	40 / 223	
	Goos et al 2011-MRI	0.200	0.110	0.335	10 / 49	
	Goos et al 2011-SWI	0.400	0.273	0.541	20 / 49	
	Kirsch et al 2009	0.380	0.217	0.575	10 / 26	
	Nagasawa et al 2014	0.240	0.206	0.277	132 / 550	
	Nagata et al 2012	0.175	0.117	0.254	21 / 120	
	Nakada-Kudo et al 2006	0.167	0.082	0.311	7 / 42	
	Olazaran et al 2014	0.390	0.289	0.501	31 / 79	
	Park et al 2013	0.140	0.082	0.229	12 / 89	
	Qiu et al 2010	0.128	0.072	0.217	11 / 86	
	Staekenborg et al 2009	0.090	0.038	0.198	5 / 56	
	Uetani et al 2013	0.480	0.404	0.557	78 / 162	
	van der Vlies et al 2012 b	0.180	0.135	0.236	40 / 221	
	Yates et al 2014	0.425	0.283	0.580	17 / 40	
	Zonneveld et al 2014	0.330	0.274	0.391	82 / 249	
Random		0.249	0.202	0.304	613 / 2412	

-1.00 -0.50 0.00 0.50 1.00

ON-LINE FIG 2. The forest plot shows the aggregate event rate estimate. The *hollow square* with attached 95% confidence interval shows the prevalence estimate for each study; the *bold diamond* represents the aggregate prevalence estimate.