SUPPLEMENTAL MATERIAL

Worldwide one-month case fatality of ischemic stroke and the temporal trend: a systematic review and meta-analysis

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Supplementary Information

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Online supplemental table 1. The items for quality assessment

Item	**Score**
a) Representativeness of the ischemic stroke in the community.	Yes = 1 score, No = 0 score
b) The brain imaging rate was higher than 80%.	Yes = 2 score, No = 0 score
c) The sample size of ischemic stroke was more than 200.	Yes = 2 score, No = 0 score
d) The total number of the method of case finding.	2 to 4 = 1 score, >4 = 2 score
e) Reported the mean or median age of the patients.	Yes = 1 score, No = 0 score
f) Reported the proportion of female or male.	Yes = 1 score, No = 0 score

Online supplemental table 2. Characteristics of study periods included in the analysis of case fatality

Author	Country	Midyear	First-ever stroke	Women (%)	Mean age	Number of patients	Case fatality	Case finding method*	Quality Score
Brown[1]	United States	1955	No	0.55	71.3	276	18.1%	ADEHNO	7
Sacco[2]	United States	1962	Yes	0.5	66.0	286	15%	CDGHV	7
Brown[1]	United States	1965	No	0.47	71.6	513	18.7%	ADEHNO	7
Numminen[3]	Finland	1973	Yes	0.5	63.6	148	22.30%	GH	6
Brown[1]	United States	1975	No	0.55	72.7	553	13.0%	ADEHNO	7
Numminen[3]	Finland	1979	Yes	0.5	64.5	188	24.50%	GH	6
Bamford[4]	United Kingdom	1984	Yes	NR	NR	545	10%	ACDGH	7
Truelsen[5]	Denmark	1985	No	0.44	66.1	439	14.40%	CDHGI	7
Brown[1]	United States	1985	No	0.57	74.6	781	14.6%	ADEHNO	9
Ward[6]	Australia	1986	Yes	0.4	NR	94	12.80%	CDGH	7
Vernino[7]	United States	1987	Yes	0.6	75.3	444	17%	ADGHN	7
Béjot[8]	France	1987	Yes	NR	66.0	943	13.36%	CDHNI	8
Ricci[9]	Italy	1987	Yes	NR	NR	286	9.80%	CDEHG	5
Immonen-Raiha[10]	Finland	1988	No	0.43	NR	9074	16.9%	CDHI	5
Hallstrom[11]	Sweden	1989	Yes	NR	NR	1421	10.70%	CDHI	6
D'Alessandro[12]	Italy	1989	Yes	0.5	72.6	171	13%	CDEGH	8
Numminen[3]	Finland	1990	Yes	0.6	71.4	469	19.40%	GH	6
Kimura[13]	Japan	1990	Yes	0.4	66.1	1872	5.70%	AGHNV	9

Khan[14]	Sweden	1990	Yes	0.5	75.1	5086	8.20%	CGHNI	7
Islam[15]	Australia	1990	Yes	0.5	76.0	173	8.70%	CDEGHN	6
Anderson[16]	New Zealand	1991	No	0.54	NR	376	12%	ADGHN	8
Kita[17]	Japan	1991	Yes	0.4	70.6	262	10.70%	CHN	8
Al-Rajeh[18]	Saudi Arabia	1991	Yes	0.4	NR	339	10%	CDEH	7
Weissbein[19]	Warsaw	1992	Yes	NR	NR	407	37.60%	DHO	6
Béjot[8]	France	1992	Yes	NR	NR	1043	13.61%	CDHNI	7
Feigin[20]	Russia	1992	Yes	0.6	65.0	321	16.20%	ACDHGO	7
Kiyohara[21]	Japan	1992	Yes	0.5	73.0	244	9%	ACDH	7
Lauria[22]	Italy	1993	Yes	0.6	NR	319	26.40%	CDGH	7
Intiso[23]	Italy	1993	Yes	0.5	75.7	57	24.50%	DGH	6
Intiso[23]	Italy	1994	Yes	0.6	74.7	60	16.60%	DGH	6
Vemmos[24]	Greece	1994	Yes	0.4	NR	447	26.60%	CDGH	8
Hartmann[25]	United States	1994	Yes	0.56	70.0	980	5%	CDEGH	7
Kolominsky-Rabas[26]	Germany	1995	Yes	0.6	72.0	278	11.50%	DEGHN	9
Ellekjaer[27]	Norway	1995	No	0.45	76.6	322	10.90%	DGHIN	9
Intiso[23]	Italy	1995	Yes	0.5	76.3	57	14.00%	DGH	7
Marini[28]	Italy	1996	Yes	0.6	78.8	3530	20.20%	DGHO	8
Islam[15]	Australia	1996	Yes	0.5	79.0	166	14.50%	CDEGHN	6
Béjot[8]	France	1997	Yes	NR	NR	909	11.55%	CDHNI	7
Thrift[29]	Australia	1997	Yes	0.5	NR	200	12%	CDGHIMNR	8
Hamad[30]	Saudi Arabia	1997	Yes	0.2	57.8	173	12.00%	DHGR	7
D'Alessandro[15]	Italy	1997	Yes	0.5	73.3	284	15%	CDEGH	9
Thrift[31]	Australia	1998	No	0.53	74.6	716	12.00%	CDGHIMN	9

Ovary[32]	Hungary	1998	Yes	0.5	66.4	4875	9.20%	CGI	8
Ovary[32]	Japan	1998	Yes	0.5	69.5	1843	7.40%	CGI	8
Vangen-Lonne[33]	Norway	1998	Yes	0.4	NR	375	9.60%	ADEGHN	8
Di Carlo[34]	Italy	1999	Yes	0.5	73.0	234	16.20%	DEGHIN	9
Syme[35]	Scottish	1999	Yes	NR	73.8	419	11%	DGHINOR	8
Correia[36]	Portugal	1999	Yes	0.6	72.0	554	11.30%	CDGHV	9
Olindo[37]	Martinique	1999	Yes	0.5	71.2	463	11.80%	DEGHIN	9
Appelros[38]	Sweden	2000	Yes	0.6	76.3	274	9.80%	ADEHING	9
Corbin[39]	Barbados	2001	Yes	0.6	72.4	276	23.20%	CDGHIN	9
Lavados[40]	Chile	2001	Yes	0.4	64.4	185	17.80%	CDEGHIMOR	7
Islam[15]	Australia	2001	Yes	0.5	77.0	138	13.80%	CDEGHN	7
Béjot[8]	France	2002	Yes	NR	71.1	1045	7.85%	CDHNI	8
Manobianca[41]	Italy	2002	Yes	0.4	74.5	92	10.80%	CDEGHI	5
Tsiskaridze[42]	Georgia	2002	No	0.64	67.7	125	19.20%	ACDEGHNOV	5
Aked[43]	Sweden	2002	Yes	0.5	76.0	364	8.50%	ACDEHIO	9
Vibo[44]	Estonia	2002	Yes	0.6	71.6	332	22%	ACDEGH	9
Vangen-Lonne[33]	Norway	2003	Yes	0.4	NR	413	8.00%	ADEGHN	8
Minelli[45]	Brazil	2004	Yes	0.4	65.0	69	13%	CDEHR	9
Corso[46]	Italy	2006	Yes	0.5	NR	1057	10.80%	DEGHIR	8
Fang[47]	China	2006	Yes	0.4	68.0	1184	10.40%	CDGHO	9
Cabral[48]	Brazil	2006	Yes	0.5	66.0	610	14.00%	CDEHI	9
Kelly[49]	Ireland	2006	Yes	0.5	70.9	390	16.40%	CDGHNR	9
Zhang[50]	China	2006	Yes	0.5	65.0	869	16.90%	CDHNI	7
Goulart[51]	Brazil	2007	Yes	0.5	68.0	365	11.20%	DH	8
Shoeibi[52]	Iran	2007	No	0.58	68	530	17.70%	CDHO	8

Pikija[53]	Croatia	2008	Yes	0.5	72.8	748	17.15%	DEGHIN	9
Janes[54]	Italy	2008	Yes	0.5	76.2	506	16.80%	CDEGHNR	9
Vangen-Lonne[33]	Norway	2008	Yes	0.4	NR	367	9.30%	ADEGHN	8
Béjot[55]	France	2009	No	0.54	75.5	1092	8.70%	CDHNI	9
Leyden[56]	Australia	2010	No	NR	NR	258	16%	DEGHNOR	7
Takashima[57]	Japan	2011	Yes	0.4	76.2	1948	7.80%	CDHIN	9
Tsivgoulis[58]	Greece	2012	Yes	0.5	75.0	568	16.20%	ACGHO	9
Olindo[37]	Martinique	2012	Yes	0.5	72.0	439	9.10%	DEGHIN	7
Bahit[59]	Argentina	2014	Yes	0.5	72.2	251	14.70%	AEGHMNR	9
Aked[43]	Sweden	2016	Yes	0.5	76.0	334	8.70%	ACDEHIO	9

NR indicates not reported.

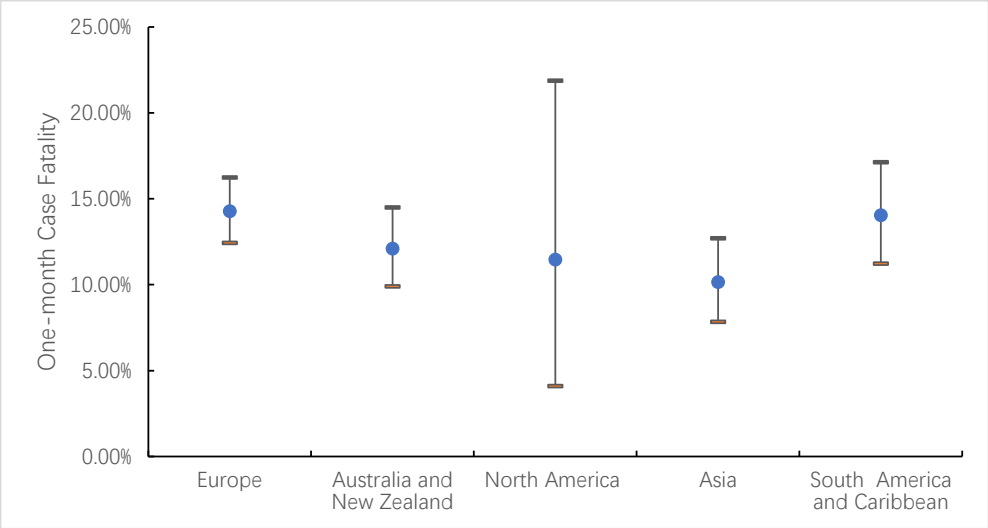
*Case finding methods: A=autopsy report. C=register or surveillance. D=death certificates. E=emergency department. G=general practitioner. H=hospital records. I=International Classification of Disease (ICD).M=media attention for the study during recruitment phase. N=nursing home or rehabilitation center. O=outpatient clinic. R=radiology requests. V=volunteers in door to door surveys.

Online supplemental table 3. The one-month case fatality of ischemic stroke by age

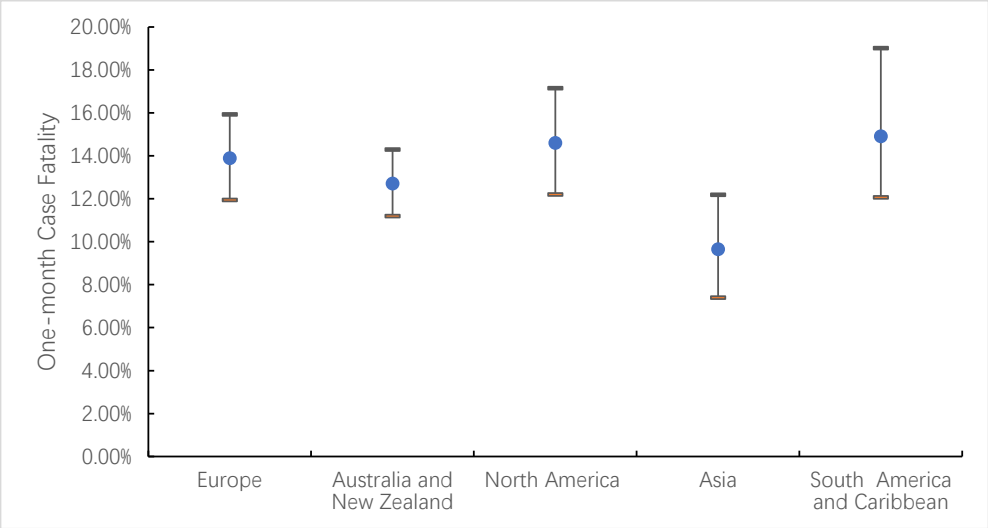
Source	Midyear	Age			
		<64	65-74	75-84	85+
Bamford et al,[4]	1984	7.4 (3.4, 13.5)	8.4 (4.7, 13.7)	11.1 (7, 16.5)	19.4 (10.8, 30.9)
Feigin et al,[20]	1992	9.9 (5.4, 16.4)	15.9 (9.7, 24)	24.2 (14.5, 36.4)	45.5 (16.8, 76.6)
Kimura et al,[13]	1990	2.8 (1.6, 4.5)	3.8 (2.4, 5.8)	8.1 (5.9, 10.7)	12.1 (8.1, 17.1)
Kita et al,[17]	1991	6.9 (2.3, 15.5)	7.1 (2.7, 14.9)	11.7 (5.5, 21)	27.6 (12.7, 47.2)
Vemmos et al,[24]	1994	7.7 (2.5, 17.1)	13.4 (7.3, 21.8)	20.7 (15, 27.4)	34 (25, 43.8)
Khan et al,[14]	1999	4.7 (3.4, 6.4)	5.5 (4.4, 6.9)	8.8 (7.6, 10.1)	14.1 (11.9, 16.6)
Appelros et al,[38]	2000	11.9 (4, 25.6)	7.3 (2.4, 16.1)	4.5 (1.5, 10.2)	23.1 (12.5, 36.8)
Corbin et al,[39]	2001	13.4 (6.3, 24)	14.1 (7.3, 23.8)	31.3 (21.6, 42.4)	35 (23.1, 48.4)
Shoeibi et al,[52]	2007	5.8 (3.1, 9.7)	22.5 (16, 30.3)	28.6 (20.9, 37.3)	35.1 (20.2, 52.5)
Overall	-	6.6 (4.6, 8.9)	10.0 (6.5, 14.2)	15.0 (10.3, 20.4)	24.6 (17.7, 32.2)

Online supplemental table 4. The annually percent change of one-month case fatality of ischemic stroke in sensitivity analysis

	First-ever stroke			Scanned rate >80%		
Region	**Number of study period**	**Annual change, %(95% CI)**	***p* value**	**Number of study period**	**Annual change, %(95%CI)**	***p* value**
Global	64	-0.1 (-0.3, 0)	0.102	56	-0.1 (-0.3, 0.1)	0.309
Europe	38	-0.1 (-0.5, 0)	0.050	34	-0.3 (-0.6, 0)	0.082
Australia and New Zealand	5	0.2 (-0.1, 0.5)	0.255	6	0.1 (0, 0.3)	0.006
North America	3	-0.2 (-0.6, 0.2)	0.257	1	-	-
Asia	10	0 (-0.3, 0.3)	0.828	8	0.1 (-0.2, 0.4)	0.421
South America and Caribbean	8	-0.4 (-0.9, 0.2)	0.167	7	-0.2 (-0.8, 0.4)	0.465



Online supplemental figure 1. One-month case fatality of first-ever ischemic stroke in different geographic regions



Online supplemental figure 2. One-month case fatality in studies with at least 80% cranial scanning in different geographic regions

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