

Supplemental material

Table S1: MINORS criteria for the selected studies included in the meta-analysis

References	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	overall
Arregle <i>et al.</i> 2021 [12]	2	2	2	2	2	2	1	0	2	2	2	2	21
Cooper <i>et al.</i> 2009 [5]	2	2	2	2	2	2	0	0	2	2	2	2	20
Diab, <i>et al.</i> 2016 [13]	2	0	0	2	2	2	2	0	2	2	2	2	18
Fukuda, <i>et al.</i> 2014 [14]	2	0	0	2	2	0	0	0	2	2	2	2	14
García-Cabrera, <i>et al.</i> 2013 [15]	2	2	2	2	2	2	1	0	0	2	2	2	19
Grabowski, <i>et al.</i> 2010 [16]	2	0	2	2	2	2	2	0	2	2	2	1	19
Heiro, <i>et al.</i> 2007 [17]	2	0	0	2	2	2	0	0	2	2	2	2	16
Huang, <i>et al.</i> 2023 [18]	2	0	0	2	2	2	2	0	2	2	2	2	18
Kim, <i>et al.</i> 2017 [19]	2	0	0	2	2	2	0	0	2	2	2	2	16
Lee Su Jin, <i>et al.</i> 2014 [20]	2	0	0	2	2	2	2	0	2	2	2	2	18
Lee Seung-Jae <i>et al.</i> 2014 [21]	2	0	0	2	2	2	2	0	2	2	2	2	18
Misfeld, <i>et al.</i> 2014 [22]	2	0	0	2	2	2	0	0	2	2	2	2	16
Okazaki, <i>et al.</i> 2013 [23]	2	0	0	2	2	2	0	0	2	2	2	2	16
Pinto, <i>et al.</i> 2024 [24]	2	2	2	2	2	2	1	0	2	2	2	2	21
Roder, <i>et al.</i> 1997[25]	2	0	0	2	2	2	0	0	2	2	2	2	16
Ruttmann, <i>et al.</i> 2020 [26]	2	2	0	2	2	2	0	0	2	2	2	2	18
Santoshkumar <i>et al.</i> 1996 [27]	2	0	0	2	2	2	0	0	2	2	1	1	14
Scheggi, <i>et al</i> 2022[28]	2	0	0	2	2	2	0	0	2	2	2	2	16
Selton-Suty, <i>et al</i> 2016[29]	2	0	0	2	2	2	0	0	2	2	2	2	16
Sonneville, <i>et al</i> 2011[30]	2	2	2	2	2	2	2	0	2	2	2	2	22
Suzuki, <i>et al</i> 2017[31]	2	2	0	2	2	2	0	0	2	2	2	2	18
Thuny, <i>et al</i> 2007[32]	2	2	2	2	2	2	2	0	2	2	2	2	22
Tsai, <i>et al</i> 2024[33]	2	0	0	2	2	2	0	0	2	2	2	2	16
Wilbring <i>et al</i> 2014[34]	2	0	0	2	2	2	2	0	2	2	2	2	18
Zaballos <i>et al</i> 2024[35]	2	2	2	2	2	2	0	0	2	2	2	2	20

Q: question

Table S2: Subtypes of neurological complications and their relation to the primary outcome

References	NC subtypes according to study design	NC subtypes used for analysis (M: major; m:minor)	OR of the primary outcome
<i>Diab et al, 2016 (13)</i>	Major CVC (mRS >3)	M	0.85 (0.55-1.30)
<i>Garcia-Cabrera et al, 2013 (15)</i>	Neurological complications together		1.58 (1.23-2.02)
	Encephalitis/meningitis		0.94 (0.61-1.45)
	Small ischemic complications	m	1.41 (0.93-2.19)
	Moderate-severe ischemic complications	M	1.63 (1.19-2.22)
	Cerebral hemorrhage		1.73 (1.10-2.71)
<i>Huang et al, 2023 (18)</i>	Symptomatic NC	M	2.884 (2.574 – 3.213)
<i>Lee Seung-Jae et al, 2014 (20)</i>	Minor CVC	m	0.856 (0.253-2.894)
	Major CVC (initial mRS ≥3)	M	2.865 (1.254-6.548)
<i>Ruttmann E. et al, 2020 (26)</i>	Uncomplicated stroke	m	1.18 (0.79–1.77)
	Complicated stroke	M	2.1 (1.24–3.54)
<i>Selton-Suty et al, 2016 (29)</i>	Asymptomatic NC	m	0.393 (0.120-1.281)
	Symptomatic NC	M	2.499 (1.623-3.894)
<i>Sonneville et al, 2011 (30)</i>	Symptomatic NC		1.21 (0.63–2.33)
	Neurological failure GCS <10	M	7.41 (2.89-18.96)
<i>Suzuki et al, 2017 (31)</i>	Complicated stroke	M	10.763 (1.232-155.872)
<i>Thuny et al, 2007 (32)</i>	Silent cerebral embolism or TIA	m	0.9 (0.46–1.61)
	Stroke	M	1.6 (1.02–2.65)

NC: neurological complications, CVC: cerebrovascular complications, mRS: modified Rankin Score, GCS: Glasgow coma scale, TIA: transient ischemic attack.

Table S3: Meta-regression analysis on the primary outcome

Moderator	Beta	P value for interaction
<i>Male sex</i>	-0.01	0.450
<i>Mean age</i>	-0.02	0.003
<i>Prosthesis involvement</i>	-0.00	0.854
<i>Right heart valve involvement</i>	0.02	0.645
<i>Mitral valve involvement</i>	0.01	0.124
<i>Aortic valve involvement</i>	-0.01	0.073
<i>S.A positive emoculture</i>	-0.00	0.675
<i>Presence of valvular abscess or local complications</i>	0.00	0.629
<i>Valve surgery</i>	-0.00	0.330
<i>Early surgery (< 7 days)</i>	-0.00	0.312
<i>Heart failure at admission</i>	0.00	0.937

SA: S.Aureus

Figure S1: Funnel plot

