

REVIEW ARTICLE

# Clinical characteristics and outcomes of acute ischemic stroke in patients with COVID-19: A systematic review and meta-analysis of global data

## Supplementary File

**Table S1. Search strategy.**

Database	Search strategy
PubMed	<p>(((((Brain Ischemia[MeSH Terms]) OR (((((((((((((((((((Brain Ischemias[Title/Abstract]) OR (Ischemia, Brain[Title/Abstract])) OR (Ischemic Encephalopath*[Title/Abstract]) OR (Encephalopathy, Ischemic[Title/Abstract]) OR (Cerebral Ischemia*[Title/Abstract]) OR (Ischemia*, Cerebral[Title/Abstract]) OR (Brain Infarct*[Title/Abstract]) OR (acute cerebrovascular disease[Title/Abstract]) OR (Cerebrovascular Disorders[Title/Abstract]) OR (brain attack[Title/Abstract]) OR (cerebrovascular insult[Title/Abstract]) OR (cerebral hypoperfusion[Title/Abstract]) OR (cerebral infarct*[Title/Abstract])) OR (stroke[MeSH Terms]) OR (((((Strokes[Title/Abstract]) OR (Cerebrovascular Accident*[Title/Abstract]) OR (Vascular Accident*, Brain[Title/Abstract]) OR (Brain Vascular Accident*[Title/Abstract]) OR (Apoplexy[Title/Abstract])) AND (((SARS-CoV-2[MeSH Terms]) OR (((((((((((SARS CoV 2[Title/Abstract]) OR (Coronavirus Disease 2019 Virus[Title/Abstract]) OR (2019 Novel Coronaviruses[Title/Abstract]) OR (Coronavirus, 2019 Novel[Title/Abstract]) OR (Novel Coronavirus, 2019[Title/Abstract]) OR (Wuhan Seafood Market Pneumonia Virus[Title/Abstract]) OR (Coronavirus 2, SARS[Title/Abstract]) OR (Wuhan Coronavirus[Title/Abstract]) OR (Coronavirus, Wuhan[Title/Abstract]) OR (Severe Acute Respiratory Syndrome Coronavirus 2[Title/Abstract])) OR (COVID-19[MeSH Terms]) OR (((((((((((COVID 19[Title/Abstract]) OR (2019-nCoV[Title/Abstract]) OR (2019 nCoV[Title/Abstract]) OR (Coronavirus Disease-19[Title/Abstract]) OR (Coronavirus Disease 19[Title/Abstract]) OR (2019 Novel Coronavirus[Title/Abstract]) OR (COVID19[Title/Abstract]) OR (Coronavirus Disease 2019[Title/Abstract]) OR (Disease 2019, Coronavirus[Title/Abstract]) OR (SARS Coronavirus 2[Title/Abstract]))))</p>
Embase	<p>#1 'cerebrovascular accident'/exp            #2 stroke*:ab,ti OR 'cerebrovascular accidents':ab,ti OR 'vascular accident*', brain:ab,ti OR 'brain vascular accident*':ab,ti OR apoplexy:ab,ti OR 'brain ischemia*':ab,ti OR 'ischemia, brain':ab,ti OR 'ischemic encephalopath*':ab,ti OR 'encephalopathy, ischemic':ab,ti OR 'cerebral ischemia*':ab,ti OR 'ischemia*', cerebral:ab,ti OR 'brain infarct*':ab,ti OR 'acute cerebrovascular disease':ab,ti OR 'cerebrovascular disorders':ab,ti OR 'brain attack':ab,ti OR 'cerebral embolism':ab,ti OR 'cerebrovascular insult':ab,ti OR 'cerebral hypoperfusion':ab,ti OR 'cerebral infarct*':ab,ti            #3 #1 OR #2            #4 'coronavirus disease 2019'/exp            #5 'covid 19':ab,ti OR '2019 ncov':ab,ti OR 'coronavirus disease-19':ab,ti OR 'coronavirus disease 19':ab,ti OR '2019 novel coronavirus':ab,ti OR covid19:ab,ti OR 'disease 2019, coronavirus':ab,ti OR 'sars coronavirus 2':ab,ti            #6 'severe acute respiratory syndrome coronavirus 2'/exp            #7 'sars cov 2':ab,ti OR 'coronavirus disease 2019 virus':ab,ti OR '2019 novel coronaviruses':ab,ti OR 'coronavirus, 2019 novel':ab,ti OR 'novel coronavirus, 2019':ab,ti OR 'wuhan seafood market pneumonia virus':ab,ti OR 'coronavirus 2, sars':ab,ti OR 'wuhan coronavirus':ab,ti OR 'coronavirus, wuhan':ab,ti            #8 #4 OR #5 OR #6 OR #7            #9 #3 AND #8</p>
Web of Science	<p>#1 Topic: (stroke* OR cerebrovascular accident* OR vascular accident*, brain OR brain vascular accident* OR apoplexy OR Brain Ischemia* OR Ischemia, Brain OR Ischemic Encephalopath* OR Encephalopathy, Ischemic OR Cerebral Ischemia* OR Ischemia*, Cerebral OR Brain Infarct* OR acute cerebrovascular disease OR Cerebrovascular Disorders OR brain attack OR cerebral embolism OR cerebrovascular insult OR cerebral hypoperfusion OR cerebral infarct*)            #2 Topic: (COVID-19 OR COVID 19 OR 2019-nCoV OR 2019 nCoV OR Coronavirus Disease-19 OR Coronavirus Disease 19 OR 2019 Novel Coronavirus OR COVID19 OR Coronavirus Disease 2019 OR Disease 2019, Coronavirus OR SARS Coronavirus 2 OR SARS-CoV-2 OR SARS CoV 2 OR Coronavirus Disease 2019 Virus OR 2019 Novel Coronaviruses OR Coronavirus, 2019 Novel OR Novel Coronavirus, 2019 OR Wuhan Seafood Market Pneumonia Virus OR Coronavirus 2, SARS OR Wuhan Coronavirus OR Coronavirus, Wuhan OR Severe Acute Respiratory Syndrome Coronavirus 2)            #3 #1 AND #2</p>

Table S2. Newcastle–Ottawa Scale for assessing the quality of studies included in the systematic review.

Study	Selection	Comparability	Outcome/Exposure	Overall score	Quality
Sasanejad <i>et al.</i>	****	**	***	9	Good
Sobolewski <i>et al.</i>	****	**	***	9	Good
Kasab <i>et al.</i>	****	**	***	9	Good
Havenon <i>et al.</i>	****	**	***	9	Good
Escalard <i>et al.</i> -1	***	*	***	7	Good
Pezzini <i>et al.</i>	****	**	***	9	Good
Qureshi <i>et al.</i> -1	****	*	***	8	Good
Requena <i>et al.</i>	****	*	***	8	Good
Akhtar <i>et al.</i>	****	*	***	8	Good
Altschul <i>et al.</i>	****	**	***	9	Good
Bekelis <i>et al.</i>	***		***	6	Moderate
Benny <i>et al.</i>	****	*	***	8	Good
Calmettes <i>et al.</i>	****	**	***	9	Good
Escalard <i>et al.</i> -2	***	*	***	7	Good
Hernández-Fernández <i>et al.</i>	****	**	***	9	Good
John <i>et al.</i>	****	*	***	8	Good
Naval-Baudin <i>et al.</i>	****	*	***	8	Good
Ntaios <i>et al.</i>	****	**	***	9	Good
Topcuoglu <i>et al.</i>	****	*	***	8	Good
Yaghi <i>et al.</i>	****	*	***	8	Good
Perry <i>et al.</i>	****	**	***	9	Good
Srivastava <i>et al.</i>	****	*	**	7	Good
Dhamoon <i>et al.</i>	****	*	***	8	Good
Thomas <i>et al.</i>	****	*	***	8	Good
Ramos <i>et al.</i>	****	**	***	9	Good
Majidi <i>et al.</i>	****	*	**	7	Good
Martí-Fàbregas <i>et al.</i>	****	**	***	9	Good
Sluis <i>et al.</i>	***		***	6	Moderate
Ramos-Araque <i>et al.</i>	***		***	6	Moderate
Lin <i>et al.</i>	****	*	***	8	Good
Merkler <i>et al.</i>	****	*	***	8	Good
Rothstein <i>et al.</i>	***		***	6	Moderate
Kremer <i>et al.</i>	**		***	5	Moderate
Shahjouei <i>et al.</i>	****	*	***	8	Good
Peng <i>et al.</i>	****	*	***	8	Good
Qureshi <i>et al.</i>	****	**	***	9	Good
Bach <i>et al.</i>	**		***	5	Moderate
Khandelwal <i>et al.</i>	***		***	6	Moderate