

Supplemental Table 1. Summary of cohort studies in the review.

Authors, year, reference	Study Design	Country	NOS	Number of COVID-19 Patients	Type of stroke	Main conclusion about association between Stroke and COVID-19
Alexander et al, 2020(1)	Retrospective cohort study	America	7	1916	Acute ischemic stroke(AIS)	COVID-19 infection linked to 1.6% of ischemic stroke cases.
Ho et al, 2021(2)	Retrospective cohort study	Scotland	5	1449	Ischemic stroke	Increased ischemic stroke risk within 0-7 days post COVID-19 infection.
Lund et al, 2021(3)	Retrospective case- control cohort study	Danish	8	8983	Ischemic stroke or transient ischemic attack(TIA)	No significant rise in ischemic stroke post COVID- 19 infection.
Benussi et al, 2020(4)	Retrospective, single- center cohort study	Italy	7	56	Stroke	COVID-19 patients with stroke at admission linked to higher mortality, delirium, and disability.
Koh et al, 2020(5)	Prospective multi-center cohort study	Singapore	4	47572	AIS/TIA, CVT	Higher CVT incidence in mild/asymptomatic COVID-19; varied AIS/TIA onset.

Siegler et al, 2021(6)	Retrospective cohort study	Multinational	6	14483	AIS, CVT, ICH	Elevated cryptogenic stroke and mortality post-COVID-19.
Shahjouei et al, 2020(7)	Retrospective cohort study	Multinational	7	17799	AIS, CVT, ICH	Overall stroke risk at 0.5% (pooled: 0.9%) in hospitalized SARS-CoV-2 patients.
Trimaille et al, 2020(8)	Retrospective cohort study	France	6	289	Venous thromboembolic event(including CVT)	1.0% of COVID-19 patients diagnosed with CVT.
Al-Mufti et al, 2021(9)	Retrospective multicenter cohort study	America	4	13500	CVT	Elevated CVT frequency among COVID-19 patients.
Taquet et al, 2020(10)	Retrospective cohort study	America	8	537913	CVT	Post-COVID-19 CVT incidence: 42.8 per million (95% CI 28.5 - 64.2) within two weeks.
Requena et al, 2020(11)	Retrospective, single-center cohort study	Spain	6	2050	AIS, ICH	<2% of COVID-19 patients admitted with associated stroke.
Rothstein et al, 2020(12)	Retrospective cohort study	America	6	844	AIS, ICH	2.4% COVID-19 patients confirmed ischemic stroke; 0.9% intracranial hemorrhage.
Oates et al, 2022(13)	Retrospective cohort study	America	8	368	Ischemic stroke, hemorrhagic stroke	Stroke incidence 17.4% (64/368) during COVID-19 hospitalization.

AIS: Acute ischemic stroke; TIA: transient ischemic attack; CVT: cerebral venous thrombosis; SAH: subarachnoid hemorrhage; ICH: intracranial hemorrhage; LVO: large vessel occlusion; UAE: United Arab Emirates

	Multi-center					COVID-19 combined with stroke showed poor
Ji et al, 2020(14)	retrospective cohort study	China	5	27	Main ischemic stroke	coagulation indicators, generally favorable outcomes.
Shahjouei et al, 2021(15)	Multi-center, prospective and observational study	Multinational	6	432	AIS, CVT, ICH,SAH	COVID-19 patients had ↑large vessel occlusion, ↓small vessel occlusion, ↑young stroke, compared to pre-pandemic studies.
Hernández-Fernández et al, 2020(16)	Retrospective cohort study	Spain	8	1683	Ischemic stroke, hemorrhagic stroke	Cerebrovascular incidence with COVID-19: 1.4%, high morbidity and mortality.
Yaghi et al, 2020(17)	Retrospective cohort study	America	9	3556	Ischemic stroke	Hospitalized COVID-19 patients presented with 0.9% associated ischemic stroke; cryptogenic strokes and increased mortality.
Majidi et al, 2020(18)	Retrospective cohort study	America	6	24	Ischemic stroke	LVO stroke incidence increased during peak COVID-19 outbreak.
Perry et al, 2021(19)	Case-control study	England	8	86	Ischemic stroke, hemorrhagic stroke	Initial COVID-19-associated strokes showed distinct features: Asian predilection, LVO involvement, severity, higher D-dimer, worse outcomes.

References

						COVID-19 patients exhibited more severe large
Escalard et al, 2020(20)	Prospective comparative cohort study	French	6	12	Ischemic stroke	vessel occlusion strokes than non-COVID-19 patients.
John et al, 2020(21)	Retrospective cohort study	UAE	6	591	Ischemic stroke, hemorrhagic stroke	Stroke occurred in ~5% of COVID-19 patients; ischemic stroke more severe in younger males, fewer vascular risk factors, and ↑LVO rates. COVID-19-associated hemorrhagic stroke similar to non-COVID-19.
Chen et al, 2021(22)	Retrospective cohort study	China	6	126	Hemorrhagic stroke	COVID-19 potentially influencing moderate stroke outcomes.
Pinna et al,2020(23)	Retrospective cohort study	America	4	50	AIS, TIA, SAH,ICH	COVID-19 patients developing late neurologic symptoms experienced severe disease courses.
Kvermland et al, 2021(24)	Retrospective cohort study	America	7	4071	Hemorrhagic stroke	Low risk (0.5%) of hemorrhagic stroke in COVID-19 inpatients.
John et al, 2020(25)	Retrospective cohort study	UAE	5	20	Ischemic stroke	75% COVID-19 ischemic stroke cases associated with large vessel occlusion (LVO).
Katz et al, 2020(26)	Retrospective cohort study	America	7	86	Ischemic stroke, hemorrhagic stroke	In-hospital stroke onset 48% in COVID-19 cohort vs. 5% controls. Initial COVID-19-associated

strokes more severe with Asian predilection, †LVO,

†D-dimer, worse outcomes.

Retrospective cohort study
Li et al, 2020(27)
China
8
218
AIS, ICH
COVID-19 stroke patients older, severe infection,
↑vascular risk factors.

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