

Supplementary Table 1. Summary of COVID-19 associated acute necrotizing encephalopathy reported in the literature

Publication	Age/sex	Medical comorbid	Clinical features	Radiological finding	Treatment	Outcome
Poyiadji et al. ¹	58/F	None	Altered mental status	Hyperintensity within the bilateral medial temporal lobes and thalami with hemorrhage	IVIG	NA
Delamarre et al. ²	51/M	None	Unresponsive, disconjugated gaze, and rhythmic movement right upper limb	Subtle hyperintensities in bilateral thalami on FLAIR sequence	IV MTP 1 g od IVIG	Improvement with residual fatigue, memory, and attentional impairment
Kumar et al. ³	35/M	None	Unconscious, fever, and vomiting	Hypodensities in bilateral thalami and left basal ganglia in head CT	IV MTP 1 g od	Demise
Dixon et al. ⁴	59/F	Transfusion dependent aplastic anemia	Seizure, vomiting, and reduced consciousness	Brainstem swelling, symmetrical hemorrhagic lesions in the brainstem, amygdalae, putamina, and thalamic nuclei	Dexa	No neurologic improvement. Withdrawal of ventilatory support
Ciolac et al. ⁵	44/M	None	Severe headache, confusion, disorientation, amnesia, behavioral impairment, and disinhibition	Bilateral cerebellar and thalamic hyperintense lesion visible on FLAIR images; restricted diffusion and hemorrhage visible on susceptibility-weighted images	IV MTP 1 g od	Minor behavioral symptoms and slight disability (modified Rankin Scale score: 1–2)
Virhammar et al. ⁶	55/F	None	Stuporous and multifocal myoclonus	Symmetrically increased signal intensity in subinsular regions, thalami and the brainstem	IVIG	Successfully extubated and discharged to rehabilitation
Elkady et al. ⁷	33/F	None	Generalized status epilepticus and headache	Bilateral hemorrhagic thalamic and cerebellar lesions later progressed to diffuse brain swelling	IV MTP 1 g od	Myocarditis with cardiopulmonary arrest
Current case	31/M	None	Altered mental status, parkinsonism, and masticatory myorhythmia	Bilateral symmetrical T2/FLAIR thalamic hyperintensities with hemosiderin deposition. Subtle pontine and cerebellar hyperintensity	IV MTP 1 g od	Resolution of movement disorders with subsequent full recovery

COVID-19, coronavirus disease 2019; F, female; IVIG, intravenous immunoglobulin; M, male; FLAIR, fluid attenuated inversion recovery; IV MTP, intravenous methylprednisolone; g, gram; od, once daily; Dexa, dexamethasone.

REFERENCES

- Poyiadji N, Shahin G, Noujaim D, Stone M, Patel S, Griffith B. COVID-19-associated acute hemorrhagic necrotizing encephalopathy: imaging features. *Radiology* 2020;296:E119-E120.
- Delamarre L, Gollion C, Grouteau G, Rousset D, Jimena G, Roustan J, et al. COVID-19-associated acute necrotizing encephalopathy successfully treated with steroids and polyvalent immunoglobulin with unusual IgG targeting the cerebral fibre network. *J Neurol Neurosurg Psychiatry* 2020;91:1004-1006.
- Kumar N, Kumar S, Kumar A, Pati BK, Kumar A, Singh C, et al. Acute necrotizing encephalitis as a probable association of COVID-19. *Indian J Crit Care Med* 2020;24:991-994.
- Dixon L, Varley J, Gontsarova A, Mallon D, Tona F, Muir D, et al. COVID-19-related acute necrotizing encephalopathy with brain stem involvement in a patient with aplastic anemia. *Neurol Neuroimmunol Neuroinflamm* 2020;7:e789.
- Ciolac D, Crivorucica I, Zota E, Gorincioi N, Efremova D, Manea D, et al. Extensive cerebellar involvement and cognitive impairment in COVID-19-associated acute necrotizing encephalopathy. *Ther Adv Neurol Disord* 2021;14:1756286420985175.
- Virhammar J, Kumlien E, Fallmar D, Frithiof R, Jackmann S, Skold MK, et al. Acute necrotizing encephalopathy with SARS-CoV-2 RNA confirmed in cerebrospinal fluid. *Neurology* 2020;95:445-449.
- Elkady A, Rabinstein AA. Acute necrotizing encephalopathy and myocarditis in a young patient with COVID-19. *Neurol Neuroimmunol Neuroinflamm* 2020;7:e801.