

## Acute Ischemic Stroke in COVID 19

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### ABSTRACT

Corona virus disease (COVID 19) is an infectious disease caused by SARS-COV 2 virus. It predominantly affects respiratory system causing fever, cough, breathlessness. But it can also affect central nervous system.

65 years old female presented to us with right sided weakness of upper limb and lower limb since 4 days. She also has history of loss of speech since 4 days. Patient also gives history of fever since 3 days, Dry cough since 2 days. On examination, patient was conscious, obeying to commands. Pulse was 110 beats per minute, blood pressure was 130/80mm Hg, respiratory rate was 28 breaths per minute. Temperature was 100 deg Fahrenheit. Oxygen saturation was 92 percent room air. CNS examination, patient had motor aphasia, hypotonia of right upper and lower limb. Power of right upper limb and lower limb was 2/5. Superficial reflexes were absent. Right plantar reflex was extensor. Left plantar reflex was flexor. Arterial blood gas analysis was suggestive of type 1 respiratory failure. Blood investigations revealed d-dimer was 4.8, serum CRP was 27mg/dl, serum ferritin was 39.7 micrograms per liter, interleukin-6 was 0.18pg/ml. Chest Xray was suggestive of bilateral lower and mid zone infiltrates, predominantly peripheries. RT-PCR for SARS-COV 2 was positive. CT brain plain revealed left infer frontal and parieto-occipital infarct. Inflammation, endothelial dysfunction, and coagulopathy appear to play critical roles in COVID-19-associated cerebrovascular disease (CVD). Even though respiratory symptoms predominantly seen in covid 19 patients, our patient presented with weakness of right upper limb and lower limb as chief complaint. Her CRP and d-dimer was elevated. This indicates that SARS COV 2 has increased affinity towards the ACE2 receptors which are expressed in endothelium and arterial smooth muscle cells in the brain, resulting in inflammatory process, endothelial dysfunction and prothrombotic state causing acute ischemic stroke in our patient.

COVID 19 infection can be the independent risk factor for developing acute ischemic stroke due to its pro-thrombotic state. Those patients with neurological manifestations should be evaluated early and diagnostic work up and timely treatment should be done to prevent morbidity, mortality and post covid neurological sequel.

**Keywords:** Stroke, COVID 19, D-dimer, CRP

**Abbreviations:** CRP: C Reactive Protein; ACE 2: Angiotensin Converting Enzyme 2

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