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Letter to Editor

Letter to Editor: COVID-19 Patients and Cerebral Stroke - @

H. M. Ataullah^{1*}, Md Nazmul Huda Ridoy², Sabrina Rahman³, Mohammad Zikrul Hoque⁴, Imrul Kaies⁵, Md Moshir Rahman⁶

¹Medical Officer, Sher-E-Bangla Medical College Hospital, Barishal, Bangladesh

²Jahurul Islam Medical College, Bajitpur, Bangladesh

³Department of Public Health, Independent University- Bangladesh, Dhaka, Bangladesh

⁴Senior Resident, ICU, Holy Family Red Crescent Medical College Hospital, Dhaka, Bangladesh

⁵Medical Officer, Anaesthesia Department, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka

⁶Department of Neurosurgery, Holy Family Red Crescent Medical College, Dhaka, Bangladesh

*Address for Correspondence: Ataullah H M, Medical Officer, Sher-E-Bangla Medical College Hospital, Barishal, Bangladesh, E-mail: ataullah_cox@yahoo.com

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INTRODUCTION

COVID-19, a pandemic declared by WHO in 2020, first observed in Wuhan, China, and after that rapidly spread throughout the world. Beside respiratory insufficiency, SARS-CoV-2 is presenting with many other extra pulmonary manifestations [1]. Many cases are seen with neurological symptoms, especially cerebral stroke, as initial or related presentations [2].

There are several mechanisms of neurotropism (neuro-invasion) of virus particles (droplets) includes direct entry via olfactory nerve route, trans-synaptic via infected neurons, infected vascular endothelium, immune-mediated via cytokine storms, brain injury due to hypoxia, several drugs, and their side effects, Angiotensin-Converting Enzyme 2 (ACE2) mediated entrance also noted [3,4].

COVID-19 infection causes systemic inflammation and dysregulation of the immune system, thus 'Sepsis-induced coagulopathy' by endothelial dysfunction and microthrombi formation with increased D-Dimer, Fibrinogen. In few cases reports Antiphospholipid antibodies are also found. [5] An article states, 221 patients with COVID-19 where 5.9% of patients developed cerebral stroke. [6] In a retrospective study of Mao et al., among 214 hospitalized COVID-19 positive patients, around 3% of patients developed acute cerebrovascular diseases and 6 % in critically ill patients. [7] In one national survey of UK COVID-19 and neurological manifestation, among 125 confirmed COVID-19 positive cases, 62% of patients develop cerebrovascular events (Ischemic stroke - 74%, Hemorrhagic stroke 12%, CNS vasculitis 1%, other CVD 13%).[8] In another retrospective study of Helms et al., among 58 COVID-19 patients, of which 13 performed brain MRI. Ischemic strokes were reported in 3 (23%) patients of those 13 patients [9].

Neurological symptoms affect more than 35% of COVID-19 patients. [10] Cerebrovascular disease in the form of ischemic stroke, hemorrhagic stroke, subarachnoid hemorrhage, sinus thrombosis of the cerebral vein, ischemic stroke of the wide vessel are observed [11].

Older age, smoking, HTN, DM, lipid disorders, previous coronary diseases, CVD, obesity, CKD, COPD, liver disease, cancer are risk factors for neurological symptoms [12]

Management: [11]

- Intravenous thrombolysis (TPA), coiling and clipping for SAH, thrombectomy, and endovascular therapy.
- Antiviral regulation, anticoagulant if necessary.
- IV immunoglobulins if needed and steroids.
- Cytokine inhibitors, e.g. tocilizumab, anakinra or Janus kinase (JAK).
- Management of risk factors.
- Supportive Symptomatic counseling.

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