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LETTER TO THE EDITOR

Letter regarding "Non-aneurysmal subarachnoid hemorrhage in patients with COVID-19"

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Dear Editor:

Coronavirus disease 2019 (COVID-19) is associated with hyper-coagulopathy, and appropriate anticoagulant therapy is needed to improve the condition of patients with venous thromboembolism. Spontaneous intracranial hemorrhage, including non-aneurysmal subarachnoid hemorrhage (SAH), occurs in patients with severe COVID-19. Harrogate et al. reported two such cases in patients with severe COVID-19 [1] and recommended careful observations for detecting non-aneurysmal SAH in patients with anticoagulant therapy. I present information regarding case reports in COVID-19 patients with non-aneurysmal SAH with special reference to anticoagulant therapy.

Batcik et al. reported cases of four patients with COVID-19 who experienced spontaneous non-aneurysmal SAH, which was observed in the early and late stages of COVID-19 infection [2]. They recognized two cases with anticoagulant therapy. Altschul et al. reported two cases of COVID-19 patients with SAH, and one case received anticoagulant therapy [3]. Given that disseminated intravascular coagulopathy and severe bleeding events are uncommon in patients in any stage of COVID-19 infection [4], anticoagulant therapy should be evaluated by multivariate analysis to determine whether it is a major risk factor for non-aneurysmal SAH.

Some triggers might exist in patients with COVID-19 and SAH in relation to host immune responses and immune-related symptoms [5]. Regardless, preventing non-aneurysmal SAH in patients with COVID-19 is important and should be explored in further studies.

Declarations

Conflict of interest I declare that I have no conflict of interest.

Ethical approval NA

Informed consent NA

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