Subclinical hypoxemia in COVID-19 patients: Physiological Rationale and Management in Neurotrauma Patients

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COVID-19 is a heterogeneous disease.[1] Presenting itself with different faces, it makes the care and management of infected patients a challenge. As a result of rapid virtual interactions, leading to successful communication between physicians over the preceding months from all over the world, we now know multiple clinical manifestations and the pathophysiological impact of this disease.[2] The physiological rationale and current evidence of subclinical hypoxemia in COVID-19 patients will be briefly discussed with regard to traumatic brain injury (TBI).

Two important aspects in the management of the patient with TBI are the timely correction of hypotension and hypoxemia. Both alterations have been related to increased mortality in patients with TBI.[3,4] Galwankar et al propose an interesting algorithm for the approach and management of subclinical hypoxemia in COVID-19 patients;[5] the application of this scheme will allow an easy management of patients with this physiological alteration of important clinical repercussion. Davis et al report that hypoxemia and hyperoxemia are deleterious situations that impact the outcome of patients with TBI.[6]

Although intubation based on hypoxemia is debatable as the only criterion, since patients with COVID-19 frequently present with this condition.[7] The low-arterial oxygen from the physiological point of view and its impact on brain physiology generates concern. However, we must consider that many patients with TBI are carriers of associated acute pathologies (thorax trauma) and comorbidities (chronic obstructive pulmonary disease [COPD], heart disease) that make the scenario very complex.

Although we know little about the effect of subclinical hypoxemia in patients with TBI, we suggest the following recommendations: All patients with TBI should be considered as a carrier of COVID-19 until it is ruled out by laboratory studies; the timely stabilization of physiological parameters is essential to avoid collateral injury to the brain; and COVID-19 testing should be mandatory in all patients with neurotrauma. Further studies are required to elucidate the role of subclinical hypoxemia in COVID-19 and neurotrauma.

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Conflict of Interest
None declared.

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