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NEUROLOGICAL DISORDERS RESULTING FROM SARS-COV-2

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Abstract: COVID-19 mainly presents with respiratory syndromes, including pneumonia, and gastrointestinal symptoms. However, neurological manifestations associated with SARS-CoV-2 have also been observed, possibly through the olfactory route. This study systematically reviews the literature on neurological complications of COVID-19, using specific descriptors in the Virtual Health Library (VHL), resulting in 113 articles, of which 6 were selected. Pathophysiologically, SARS-CoV-2 binds to the angiotensin-converting enzyme 2 (ACE2) in several organs, including the brain, triggering the release of cytokines and activation of the coagulation cascade, contributing to clinical manifestations. Neurological manifestations are divided into changes in the Central Nervous System (CNS) and Peripheral Nervous System (PNS). CNS manifestations include headache, hyposmia, dysgeusia, cerebrovascular disease, encephalopathy, and acute hemorrhagic necrotizing encephalopathy. Symptoms of PNS include myalgia, cranial nerve damage, and syndromes such as Guillain-Barré and Miller-Fisher. It is concluded that, in addition to respiratory symptoms, COVID-19 can cause significant neurological changes, affecting both the CNS and the PNS.
Keywords: Coronavirus, neurological complications, sequelae.

The signs and symptoms of COVID-19 manifest mainly as respiratory syndromes, most commonly pneumonia, in addition to being accompanied by symptoms of the gastrointestinal system. However, the existence of neurological manifestations associated with SARS-CoV-2 has been observed, as studies suggest that the virus reaches the Central Nervous System via the olfactory route. The above work aims to develop a systematic review of the literature on neurological complications resulting from the new Coronavirus, COVID-19. Articles were searched in the Virtual Health Library (VHL), using the descriptors coronavirus infections, complications and neurology, filtering the results only for full texts, last 5 years and diagnostic studies, risk factors and etiology, totaling 113 articles. After analysis, 6 texts were selected. Furthermore, books were used to theoretically complement the text. A priori, in pathophysiology, SARS-CoV-2 attaches itself to the angiotensin 2-converting enzyme, entering the cells of various organs, such as the nose, lungs, immune system and the brain. This connection causes the release of cytokines and activation of the coagulation cascade; therefore, these factors are directly related to the clinical manifestations of the disease. Then, based on the data found, it is understood that neurological manifestations are divided into: changes in the Central Nervous System (CNS) and in the Peripheral Nervous System (PNS). The main manifestations of the CNS include: headache, hyposmia, dysgeusia, cerebrovascular disease, encephalopathy and acute hemorrhagic necrotizing encephalopathy. Furthermore, the symptoms of PNS include: myalgia, damage to the cranial nerves, in addition to the possibility of causing syndromes such as Guillain-Barré, which is a rare manifestation and Müller-Fisher. From the above, it is concluded that although infections caused by SARS-CoV-2 manifest themselves mainly with manifestations in the respiratory system, it can also manifest with important neurological changes, affecting both the CNS and PNS.

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