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Neurology and Neuropsychiatry of COVID-19 in Post-Stroke Patients: A Systematic Review of Early Central Nervous System Manifestations Among Elderly Stroke Patients

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ABSTRACT

Introduction: Post-stroke patients, particularly the elderly, have an increased risk of neurological and neuropsychiatric complications post COVID-19 infection. The interplay between stroke-related vulnerabilities and COVID-19's impact on Central Nervous System (CNS) requires a systematic exploration.

Aim: Systematically review the early CNS manifestations of COVID-19 among elderly post-stroke patients, and also identify its effect on neurology and neuropsychiatry outcomes.

Materials and Methods: A systematic search was conducted across PubMed, Scopus and Web of Science databases for related studies published from 2020 to 2024. The inclusion criteria focussed on elderly stroke patients with COVID-19, presenting early CNS manifestations and associated co-morbidities. Data were extracted and synthesised for neurological outcomes, functional impairments, and treatment strategies.

Results: Eleven studies with post-stroke elderly patients were included in this review. Common CNS manifestations included non-specific white matter microangiopathy (55.4%) associated with higher 2-week mortality, chronic infarcts (19.4%), and acute onset haemorrhages (4.5%). Severe COVID-19 cases were seen to be associated with acute cerebrovascular diseases (5.7%) and neuropsychiatric symptoms, including impairment of consciousness (14.8%), alongside fewer typical respiratory symptoms. These conditions were linked to worsened functional outcomes, increased dependency, and heightened mortality. Multimodal therapies, including neurorehabilitation and pharmacological management, showed potential in mitigating complications.

Conclusion: COVID-19 exacerbates CNS vulnerabilities in elderly post-stroke patients, necessitating targeted neurorehabilitation and integrated care approaches to improve neurological and functional outcomes. Further research should focus on optimizing therapeutic strategies for this high-risk population. This study highlights the need for tailored physiotherapy strategies addressing post-stroke and COVID-19 neuropsychiatric effects to improve elderly rehabilitation outcomes.

Keywords: Coronavirus disease, Mortality, Neuropsychiatric

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