

COVID-19, VIRUSES AND DEMENTIA

To the Editors:

COVID-19 pandemic continues testing the stamina of both societies and health care services. Until now, we have focused on the acute effects of SARS-CoV-2 but, as more people convalesce from the infection, our attention is drawn to its more long-term effects. With increasing frequency, we examine outpatients with cognitive dysfunction after COVID-19 infection.

SARS-CoV-2–induced increased inflammatory response, brain vasculature disorders and respiratory difficulties/hypoxia have a negative impact on the cognitive functions of patients and may possibly accelerate cognitive decline, even after many years.[1]

Findings from previous epidemics have shown that respiratory coronaviruses may invade the brain and cerebrospinal fluid, causing various neurologic symptoms, such as cognitive dysfunction, and especially affecting anatomic areas and structures, such as the temporal lobe and hippocampus. Possible hippocampal damage raises the question of whether this could be held responsible for the acceleration of neurodegenerative processes in Alzheimer's dementia or the beginning of disease in previously asymptomatic people.[2]

Many studies have shown that viral infections affect cognitive functions, through direct or indirect mechanisms, contributing especially to manifestations of minor cognitive impairment and dementia. Both the high prevalence and the overlap of these conditions underlie the need to understand better the role viruses, such as SARS-CoV-2, may play in the pathogenesis of dementia.[1]

There is increasing interest concerning the role of infectious agents in the pathogenesis of dementia, but current evidence

is restricted because high-quality population studies are lacking. Systemic infections may trigger brain responses through microglial activation and release of pro-inflammatory cytokines. Furthermore, antigenic activation may contribute to age-related remodeling of the immune system and accelerate neurodegeneration in disorders, such as dementia.[2]

The current pandemic could serve as an opportunity to study the effects of viral infections on cognitive functions and dementia. Therapeutic approaches toward this way could prove important, taking into consideration global aging and high prevalence of dementia. 

REFERENCES

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