Before attributing impaired cognition in the elderly to COVID-19, all influencing factors must be considered

ARTICLE INFO

Letter to the Editor

We read with interest Rizzi et al.'s article on a case-control study of the cognitive functions of community-dwelling (n = 17) and institutionalised (n = 21) adults >65 years, undergoing antibody testing for previous SARS-CoV-2 infection (Rizzi et al., 2023). Fourteen of these patients were antibody positive and were compared to the remaining 24 patients who were not SARS-CoV-2 infected. SARS-CoV-2 patients were found to have impaired memory, attention, and executive functions (Rizzi et al., 2023). It was concluded that the study provides evidence of neurotropism of the virus and that the results support the concept of "cognitive COVID" (Rizzi et al., 2023). The study is impressive, but some points should be discussed.

The major limitation of the study is that SARS-CoV-2 infection was diagnosed based on the titres of IgG antibodies against the spike-protein and not by RT-PCR (Rizzi et al., 2023). Since antibodies can persist for weeks or months (Sun et al., 2020), they are not suitable for diagnosing an acute SARS-CoV-2 infection. SARS-CoV-2 infections should only be diagnosed by RT-PCR tests. It is conceivable that a patient had COVID-19 months before the neuropsychological testing, making it possible that causes other than COVID-19 were responsible for the cognitive decline. Therefore, it is crucial to know the latency between the onset of SARS-CoV-2 infection and the onset of cognitive impairment in order to assess whether there was indeed a causal relationship between the infection and cognitive decline.

A second limitation of the study is that it was not reported how many of the 14 included patients had received SARS-CoV-2 vaccination before enrolment in the study (Rizzi et al., 2023). Because anti-SARS-CoV-2 vaccination can be complicated by cognitive impairment, depression, and numerous cerebral diseases, it is important to know how many were vaccinated. It must also be ruled out that cognitive impairment of those vaccinated cannot be attributed to the vaccination. According to the methods section, the SARS-CoV-2 vaccination was not an exclusion criterion.

A third limitation of the study is that current medication was not included in the assessment (Rizzi et al., 2023). Since several drugs such as benzodiazepines and other sedatives, anticholinergics,

antipsychotics, mood stabilisers, and opioids can impair cognitive functions (Kernisam, 2023), it is imperative to know the current medication. It is also imperative to know the current medications in the control group and to match both cohorts for equality of current medications.

A fourth limitation is that comorbidities were not considered and included in the assessment. Since the patient cohort had a mean age of 83 years, it is very likely that some or even all included patients had comorbidities, some of which could affect cognition. These include fever, sepsis, exsiccosis, renal dysfunction, heart failure, cardiac arrhythmias, thyroid dysfunction, diabetes, or hypocorticism. Therefore, it is imperative to report all comorbidities and match both cohorts for them.

Further limitations are that nurses were allowed to complete the questionnaires for the residents of institutionalised patients and no cerebral imaging was performed. How was it ensured that the questionnaires were completed correctly?

In summary, before attributing cognitive decline to SARS-CoV-2 infection, all other influencing factors must be thoroughly examined for their impact on cognition.

Ethical approval

Not applicable.

Consent to participation

Not applicable.

Consent for publication

Not applicable.

CRediT authorship contribution statement

Josef Finsterer: Conceptualization, Data curation, Supervision, Validation, Writing – original draft.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

No data was used for the research described in the article.

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