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Covid-19 may have a detrimental impact on sensorimotor function

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Covid-19 may have a detrimental impact on sensorimotor function

📅 Monday, July 17, 2023

🕐 1:00 AM - 1:45 AM

📍 *Hall 11 (RAI Amsterdam Convention Centre)*

Theme

Biomarkers

Abstract

Background: The long-term impact of COVID-19 on global health is still unknown. Sensorimotor biomarkers may be promising indicators of lasting effects of COVID-19. Although normal aging may cause changes in sensorimotor function, more severe changes may indicate the subsequent impacts of COVID-19 on brain health. The objective of this study was to investigate the association between COVID-19 and sensorimotor markers (grip strength, gait, and smell) in the 7T neuroCOVID consortium, which is comprised of 5 sites: The University of Texas Health Science Center at San Antonio, Houston Methodist Research Institute, The University of Pittsburgh, Massachusetts General Hospital, and Nottingham University (UK).

Methods: We studied 101 adult participants (mean age 60.9 ± 8.5 years, range 45-80 years, 51% women) without prior cognitive impairment or cerebrovascular disease from the 7T consortium across 3 US and 1 UK sites. The sample included 77 COVID-19 survivors and 24 healthy controls. Sensorimotor markers were measured for olfaction (n=59; 12-item Brief Smell Identification Test (B-SIT)), grip strength (n=97; measured using a hand dynamometer), and Gait (n=101; 4-meter normal walk time and n=99; 4-meter fast-paced walk time). To assess the association between COVID-19 and sensorimotor outcomes, we performed a series of linear regression models adjusting for age, sex, site, and handedness (grip strength only). Statistical significance was set at a 5% level.

Results: As compared to healthy controls, COVID-19 survivors, on average had a significantly reduced hand grip in the right hand (β ± standard error: -0.18 ± 0.07, p=0.006). We also observed associations with reduced gait speed. COVID-19 survivors, on average, had a slower walk time in both normal (0.17 ± 0.06, p=0.004) and fast-paced (0.04 ± 0.02, p=0.022) as compared to healthy controls. We did not observe any statistical associations between COVID-19 survivors and left-hand grip strength or B-SIT.

Conclusions: These results highlight that Covid-19 infection may have a detrimental impact on sensorimotor function. Additional analysis with a larger sample size are ongoing, which will allow us to further assess the effect of infection severity. Future studies will look to evaluate the association between sensorimotor markers, cognition, and ultra-high field 7T MRI-based imaging markers.

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