Presentación de proyectos de investigación

Estudio 9

A rapid and feasible tool for screening cognitive impairment in long COVID

Muñoz-Moreno JA, Prats A, Fumaz CR, Chamorro A, Miranda C, Lladós G, Paredes R, Massanella M, Mateu L.

Background

Cognitive symptoms are common in individuals with long COVID and are associated with reduced quality of life, impaired daily functioning, and increased disability.

Objectives

Given the need for reliable and feasible methods to screen for cognitive impairment in Long COVID, we aimed to assess the diagnostic accuracy and administration characteristics of patient-reported screening tools in this population.

Methods

We conducted a cross-sectional diagnostic accuracy study as a substudy of the KING Cohort (Catalonia, Spain; local IRB approval: PI-20-217), an ongoing prospective observational cohort of COVID-19 survivors with confirmed infection between May 2020 and February 2022. Participants were included if they met the following criteria: (1) current Long COVID, defined according to adapted WHO criteria (≥2 related symptoms persisting ≥3 months after infection); (2) self-reported cognitive symptoms; and (3) availability of a comprehensive neuropsychological evaluation (12 measures, 6 cognitive domains). Three screening instruments were assessed: one clinician-administered interview, the Instrumental Activities of Daily Living (IADL) scale (10-item version), and two self-administered questionnaires, the Memory Failures of Everyday (MFE) questionnaire (30-item version) and the cognition domain (D1) of the WHO Disability Assessment Schedule (WHODAS) version 2.0 (6 items). Cognitive impairment was defined as the reference standard, operationalised as performance ≥1.5 standard deviations below the normative mean in ≥1 measures. Diagnostic accuracy was evaluated using receiver operating characteristic (ROC) curve analysis, including area under the curve (AUC), sensitivity, specificity, and the Youden index.

Results

A total of 97 participants were included; most were women (76%), with a mean (SD) age of 49 (12) years and a mean time since COVID-19 of 16 (7) months. Cognitive impairment was identified in 69 participants (71%), most commonly affecting one single domain (median: 1; IQR: 0–2). The most frequently impaired domains were attention/working memory (52%), processing speed (42%), and motor function (32%). All three screening tools showed acceptable diagnostic accuracy: IADL-10 (AUC: 0.742; $p < .001$), MFE-30 (AUC: 0.761; $p < .001$), and WHODAS 2.0 D1 (AUC: 0.754; $p < .001$). ROC analyses identified specific relevant cut-offs: IADL-10 (≥2, ≥3), MFE-30 (≥30, ≥32, ≥34, ≥35), and WHODAS 2.0 D1 (≥7, ≥8). When all of them were considered, the highest Youden index was observed for WHODAS 2.0 D1 at ≥7 (IADL-10: 137; MFE-30: 144; WHODAS 2.0 D1: 148). Sensitivity and specificity reached were 74% and 74%, respectively. WHODAS 2.0 D1 also showed the most favourable administration characteristics, considering self-administration and the shortest completion time (IADL-10: 5-10 min; MFE-30: 3-5 min; WHODAS 2.0 D1: 1-2 min).

Conclusions

We provide comparative evidence on the performance of patient-reported screening tools for cognitive impairment in Long COVID population. WHODAS 2.0 D1 (cut-off ≥7) showed the most favourable balance between diagnostic performance and ease of administration. These findings support the use of WHODAS 2.0 D1 as a brief, patient-reported screening tool to identify individuals at higher risk of cognitive impairment and facilitate referral for comprehensive neuropsychological assessment. Further studies are needed to validate these findings and explore its role in longitudinal monitoring and clinical decision-making in Long COVID.

Presenta: Jose A. Muñoz-Moreno. Fundación Lucha contra las Infecciones - Hospital Universitario Germans Trias i Pujol (Badalona).