Long-term neurocognitive and psychiatric consequences of COVID-19 in patients discharged from critical care units.

Preliminary results from the NPQCOVID Cohort Study of AIRR

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BACKGROUND

- New or worsening cognitive impairment commonly occurs and persists in survivors of intensive care unit stay (1), a problem also observed in COVID-19 survivors.
- No studies on this matter have been conducted in Latino America.
- Aim: Describe neurocognitive performance in the short & long-term in patients discharged from Critical Care Units (CCU) after severe COVID-19 disease.

WHAT WAS DONE?

- *Design:* Cohort study (recruiting).
- *Sample:* 40 out of 88 patients assessed with Montreal Cognitive Assessment (MoCA®) test by our C-L team prior discharged from CCU of Hospital Clínico Red Salud UC Christus between June and October 2020.
- *12 months follow-up primary outcome:* MoCA®.
- 12 months *follow-up secondary outcome:* Cambridge Neuropsychological Test Automated Battery (CANTAB®), 6 minutes- walk test (6MWT).
- Clinical Trials: NCT05019300.

WHAT DID WE FIND?

- *Demographics:* 88 patients, mean age 62,21 (SD 16,01), 55% male.
- *Preliminary results of primary outcome:*
  - Overall MoCA® score at discharge (n=88) of 22,13 points (SD 7,87). 25% scored ≤ 21 points*
  - Overall MoCA® at 12 months follow up (n=40) 23,6 points (SD 6,82). 20% scored ≤ 21*.

Figure 1. CANTAB® tests z scores distribution.

- *Preliminary analysis of secondary outcomes, (CANTAB®):* Figures 1 &2:
  - Non-normal distribution of z-scores of CANTAB® tests, showing a negative skew distribution.
  - MoCA® scores ≤ 21 versus > 21 show different distribution of 6MWT at 12 month follow up.

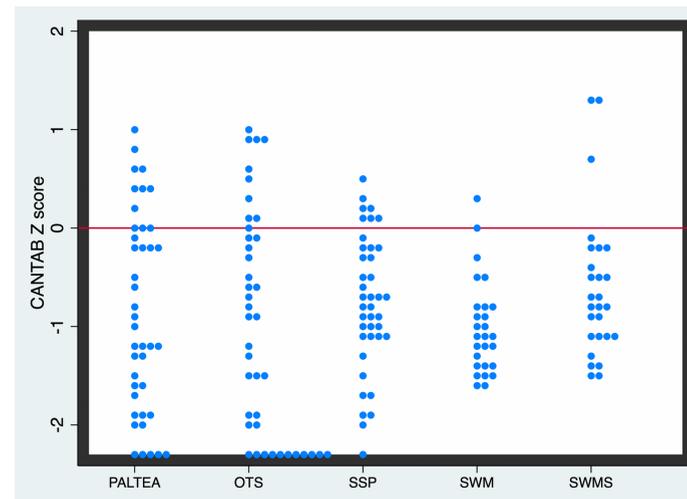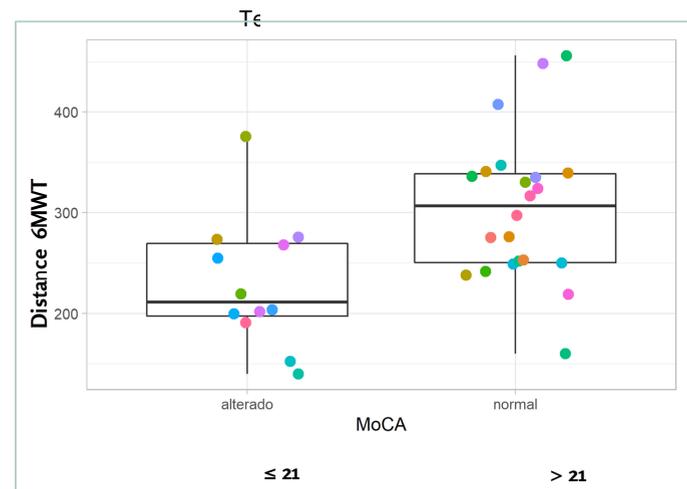Figure 2. Overall 6MWT in normal and alterated MoCA® scores.

WHAT DOES THIS MEAN?

- MoCA® average score remains stable between discharge from hospital and 12 months follow-up assessments.
- MoCA® score ≤21 at hospital discharge may be related to lower performance on 12-month 6MWT, and thus, lower endurance and aerobic capacity in the long term.
- Patients discharged from severe COVID-19 disease are in need of specialized care even in the long term.

TAKE HOME MESSAGES

- COVID-19 patients with neurocognitive impairment at discharge may show a persistence of cognitive impairment in several domains in the long term.
- MoCA® at discharge could be a putative predictor for aerobic capacity and endurance.
- Long-term follow up studies are needed to inform prompt and personalized continuity of care in this population.

References:
1. Hosey MM, Needham DM. Survivorship after COVID-19 ICU stay. Nat Rev Dis Primers. 2020 Jul 15;6(1):60.
2. *Gaete M, et al. Standardized results of the Montreal Cognitive Assessment (MoCA) for neurocognitive screening in a Chilean population. Neurologia (Engl Ed). 2020 Nov 5:S0213-4853(20)30294-2.
*Validated cut-off score for cognitive impairment in Chile.

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