

Exploring the relationship between MRI changes and cognitive/neuropsychiatric complaints in a cohort of long COVID-19 patients: A cross-sectional and longitudinal study

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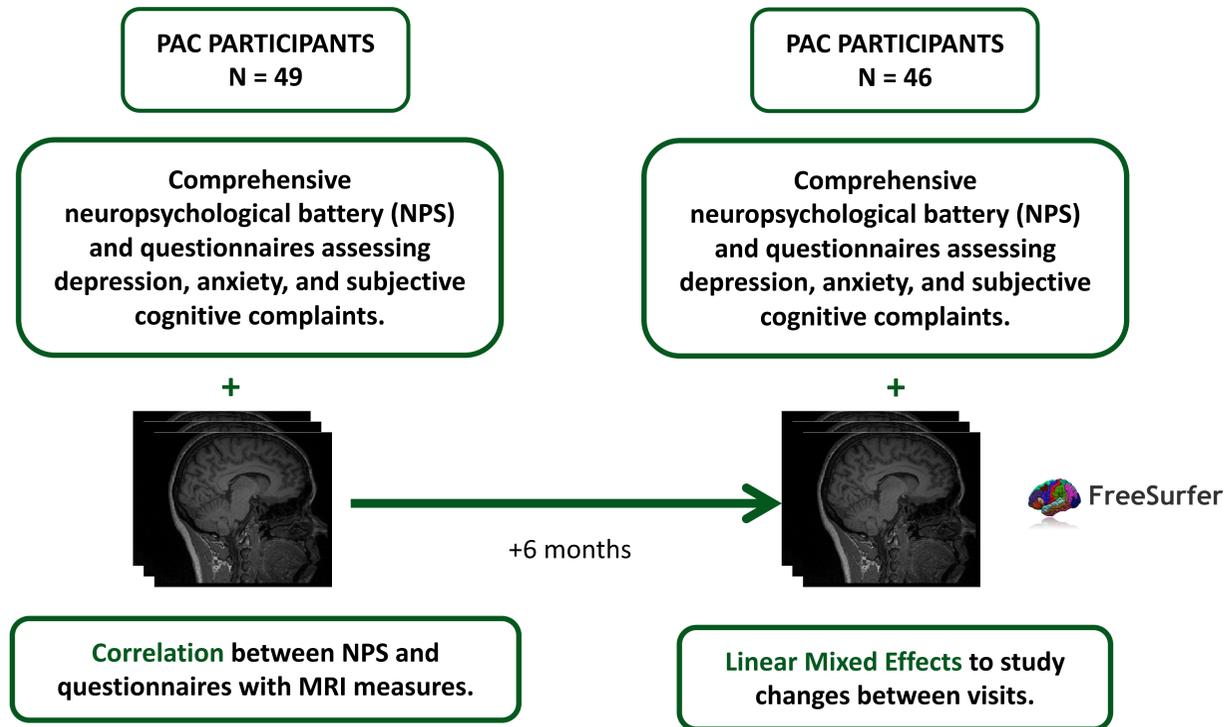
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BACKGROUND

Cognitive complaints are a major symptom of post-acute COVID-19 syndrome (PACS). However, it is not yet clear whether there is an association between cognitive symptoms with brain changes or neuropsychiatric symptoms.

METHODS

We had a 3T-T1w MRI and a comprehensive neuropsychological battery for each participant. 49 PACS participants from Hospital Clínic de Barcelona, Spain, were included in the study. Participants were 79.6% female, and their mean age was 50.1 (SD 7.9). 46 participants completed the follow-up.



RESULTS

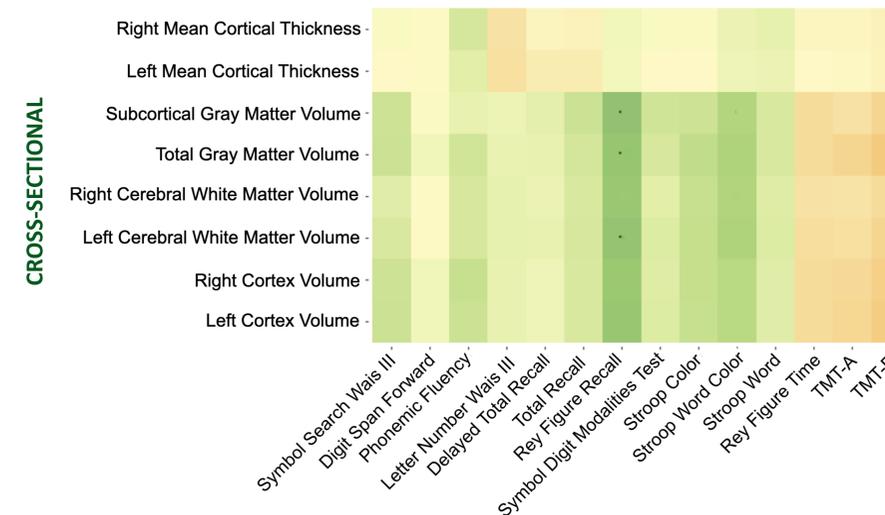


Figure 1: Correlation between memory and executive functions with general MRI. The * represents the significant correlation of p-value<0.05

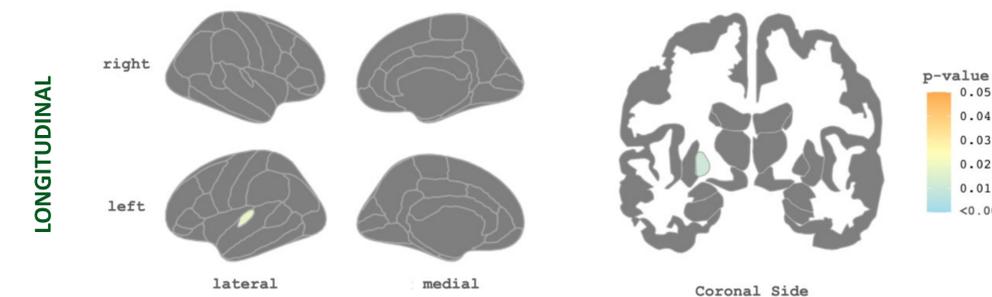


Figure 3: Brain plots of the longitudinal differences in cortical thickness measures and gray matter volumes with Rey Figure Recall. We only represent the significant correlations.

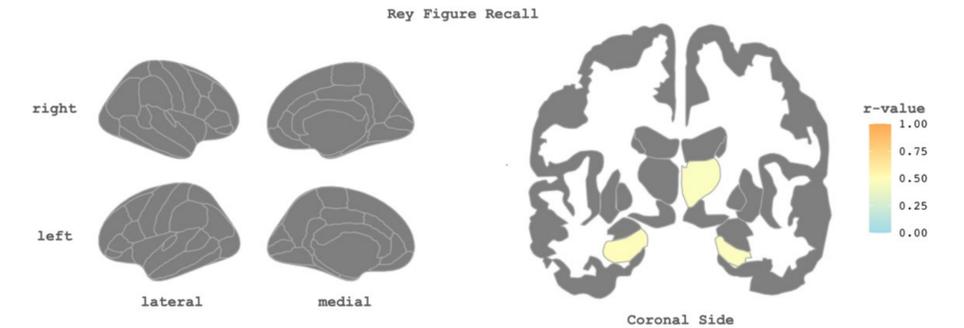


Figure 2: Brain plots with the correlation between cortical thickness measures and gray matter volumes with Rey Figure Recall. We only represent the significant correlations.

1. Significant moderate correlations were found with The Rey Figure Recall scores and general MRI measures (Figure 1).
2. Significant moderate correlations were found with The Rey Figure Recall scores and left hippocampus GM ($r=0.51$), right hippocampus GM ($r=0.49$), and right thalamus GM ($r=0.48$) (Figure 2).
3. Compared with the baseline, we did not identify changes in global structural MRI measures at 6 months in PACS participants.
4. We found GM loss at 6 months in the left pallidum and left transverse temporal thickness (Figure 3).

CONCLUSIONS

In PACS, worse visual memory, but not other clinical outcomes, were associated with lower global MRI indexes. We did not observe relevant longitudinal changes in MRI.