WORSENING OF NEUROPSYCHIATRIC SYMPTOMS AFTER SIX MONTHS FROM THE ACUTE COVID-19 INFECTION IN 1183 SUBJECTS

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Introduction:

The first reported cases SARS-CoV-2 virus infection in December 2019 marked the beginning of one of the most prominent sanitary emergencies in the modern world: the COVID-19 pandemic. Researchers and health agents from around the world were mobilized in order to understand this disease, which allowed us to acknowledge that its affliction goes beyond its acute clinical characteristics and may have longitudinal effects, related to various neurological alterations. Therefore, it is essential to analyze long term neurological and neuropsychiatric effects in this considerable portion of population affected by COVID-19, since the screening of neuropsychiatric, focus of this study, is extremely important for the assessment of mental health and daily living issues. Here, we provide a follow-up of patients in the post-COVID period, with periodic submission of questionnaires for self-assessment. The main objective is the investigation of neuropsychiatric and neurological changes after exposure to the SARS-CoV-2 virus, evaluating the impacts of this disease and how quality of life and daily activities of this population are affected in long term.

Background and Objetives:

Despite the recent reports about persistent neuropsychiatric dysfunction after the acute infection, there is a lack of longitudinal evaluation of recovered patients. Here, we

longitudinally evaluated a large group of recovered patients to analyze the presence (and changes) of systemic and neuropsychiatric symptoms over time.

Methods and recruitment:

We collected self-reported symptoms (twice) from 1183 patients (79% women, the median age of 41 years [range 12-77], 91% completed high school and 34% finished university) with confirmed Covid-19 diagnosis (1046 (88%) domiciliary treatment, 50 (4%) intensive care and 87 (7%) infirmary treatments).

The recruitment of participants was performed initially by the internet and/or telephone, with the sending of an online questionnaire in form of a Google Forms link, and other forms were sent periodically, throughout the period of the study.

We conducted a longitudinal analysis, comparing the proportion of symptoms between the interviews. The analyses were performed with in-house Python scripts.

Results:

The median interval between diagnosis and the first structured interview (online form filling - V1) was of 75 days [range 15- 395]). The median interval between the V1 and second form filling (V2) was 101 days [range 30- 261]. The median interval between diagnosis and the V2 form was 191 days (range 50-503). Only 9% reported being asymptomatic.

Between the V1 and V2, there was an increased proportion of individuals self-reporting fatigue (49% to 55%), memory problems (43 to 55%), motor difficulties (10 to 33%), headache (30 to 42%), and insomnia (1 to 21%), anxiety (1 to 42%), depression (1 to 19%), cardiac problems (1 to 13%), changes in bowel habits (1 to 11%), cramps (0 to 12%), and abnormal sexual desire (0 to 22%).

Some symptoms remained stable: hyposmia (27%), dysgeusia (23%), and sleepiness (36%).

There was a reduction of some symptoms, including musculoskeletal pain (7 to1%) and shortness of breath (12 to 0%).

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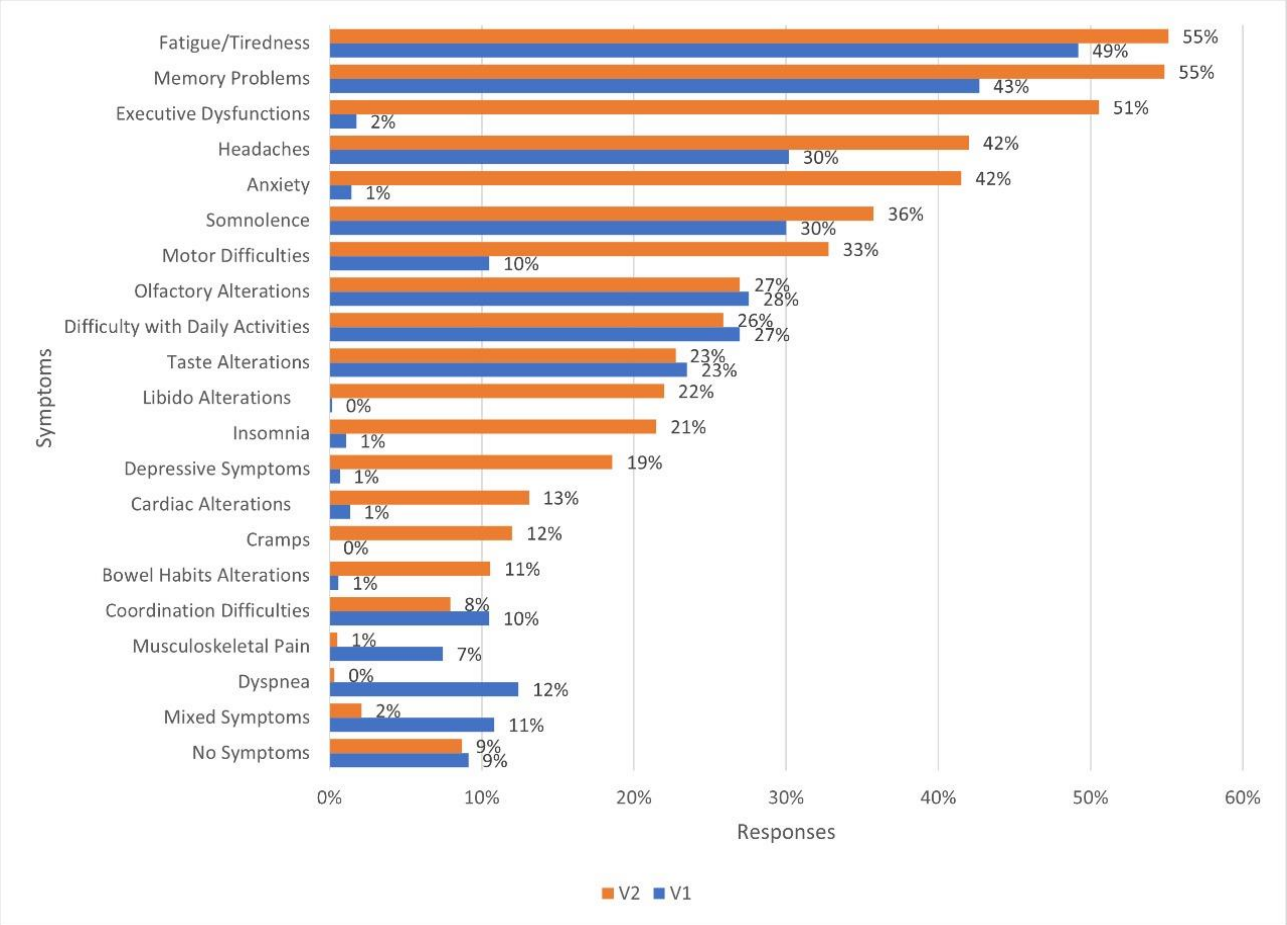

Conclusions:

As expected, shortness of breath improved. However, even after six months from the diagnosis, this group of patients (mostly non-hospitalized) presented worsening neuropsychiatric symptoms, including symptoms of anxiety and depression, cognitive dysfunction, motor impairment and dysautonomia. Long-term follow-up is necessary to determine whether or not some symptoms are transient or permanent. Multimodal investigation with neurophysiological tests and neuroimaging will help to clarify the neural substrates of these symptoms.

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