

## MORE SMOKE THAN FIRE NO SPEEDING UP OF PARKINSON'S DISEASE AFTER COVID-10 LOCKDOWN

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### Background and objectives

As the influence of stress syndromes on the evolution of Parkinson's disease (PD) remains largely unexplored, the COVID-19 pandemic offers the opportunity to evaluate the stress impact of the COVID-19 pandemic on PD trajectories.

### Methods

This longitudinal observational case-control study used data from the Luxembourg Parkinson's Study (1). A pandemic PD group with exposure to the restrictions imposed by the COVID-19 pandemic but without COVID-19 infection (n=79) was compared to a prepandemic PD control group (n= 117) that has never been exposed to any pandemic restrictions. All patients underwent three annual visits. The last analyzed in-person visit of the pandemic group occurred during the early pandemic phase, between September 2020 and March 2021. Motor and cognitive status were established through standardized in-person exams. Patients of the PD pandemic group self-rated their resilience and risk for posttraumatic stress disorder (PTSD) and, at visit 2 and 3, underwent the Olink panel of 92 serological inflammation markers. The primary outcome was motor PD progression as rated by the MDS-UPDRS part III score. The secondary outcomes were other progression scores (MDS-UPDRS I and II), cognitive performance (Montreal Cognitive Assessment), symptoms of depression (Beck Depression Inventory), risk for PTSD (revised Impact of Event Scale) and resilience (Brief Resilience Scale). Measures tested for statistical associations with these outcomes include demographic, lifestyle data and serological inflammation markers. To assess variable associations and correct effects from confounding factors, we used a multiple linear regression approach.

### Results

The deterioration of the motor and cognitive scores from visit 1 to visit 3 was not different in the pandemic group compared to the prepandemic group. 74.7 % of the pandemic PD patients had normal or high resilience scores, whereas 20.3% were at risk of developing PTSD. Resilience was neither correlated with motor scores nor with cognitive scores but was negatively associated with depressive symptomatology and posttraumatic stress. Except for Axin-1, there was no increase in the inflammation markers at visit 3 compared to visit 2.

### Discussion

This case-control study shows that there was no influence by the pandemic-induced stress on the natural progression of PD motor and cognitive trajectories.

- (1) Hipp G, et al. The Luxembourg Parkinson's Study: A Comprehensive Approach for Stratification and Early Diagnosis. *Front Aging Neurosci.* 2018 Oct 29;10:326. doi: 10.3389/fnagi.2018.00326. PMID: 30420802; PMCID: PMC6216083.

