



Reply to: "Concerns Raised by Publication of Antonini et al., 'Outcome of Parkinson Disease Patients Affected by Covid-19'"

We read with interest the letter by Professor Raphael written in response to our publication of a case series of 10 hospitalized people with Parkinson's disease (PwP) admitted with coronavirus disease 2019 (COVID-19).^{1,2} We were pleased to see that Professor Raphael applauded the publication of a real-life case series of Parkinson's disease (PD) with COVID-19, but we would also like to respond to the concerns raised in her letter related to the issue that the report may add "unnecessary stress" to PwP.¹ We specifically state that older PwP with comorbidity and possibly those on advanced therapies should be recognized as a high-risk group and this does not, therefore, include all patients with PD, in particular younger PwP who are otherwise healthy. Our intention is also to alert and set a roadmap for health care professionals to the specific needs and therapeutic decisions required to personalize management, should older PwP with comorbidities or on advanced therapies be hospitalized with COVID-19. Professor Raphael states that "it is not clear that factors causing people with PD to have elevated risk of aspiration pneumonia similarly cause elevated risk of Covid-19 pneumonia" and, although speculative, we believe that severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, which specifically targets the respiratory tract, poses a significant threat to patients with advanced PD underpinned by the following observations:

1. A 39% rate of pre-existing multifactorial dyspnea has been described in PD and the symptoms of pneumonia attributed to COVID-19 would therefore be substantially elevated in such patients and more so than a nonsusceptible group.³
2. Up to 65% of COVID-19 cases may have hyposmia, a common symptom in PD, and there is a possibility that the virus may reach the brainstem, which mediates the cough reflex and breathing, evidence supported by preclinical studies on severe acute respiratory syndrome coronavirus (SARS-CoV) or

Middle East respiratory syndrome coronavirus intranasal inoculation.⁴

The cases described in our report were seen by the Parkinson's services led by A.A. and K.R.C. at their respective centers with retrospective data capture, including a full personalized PD assessment. Our cases highlight the key issues of heightened anxiety and increasing levodopa requirement as well as fatigue in COVID-19 PD, as also recently observed in another case series.⁵ The deleterious effects of lockdown on PwP, including the lack of exercise and worsening anxiety, are now well documented in several publications and differ from a nonsusceptible population. Our cases also provide insight on the extra care required for PwP on advanced therapies, and publications of relevant case series are important; stroke is now recognized as a neurological complication of COVID-19 following the original case reports of 4 to 6 cases. The object of the case series is to alert, as we have had numerous calls from concerned patients and our case reports have resonated with many PwP and nursing colleagues. Not knowing the consequences of COVID-19 in older self-isolating PwP is a major stressor by itself; therefore, we do not believe that we are causing additional unnecessary stress but, rather, offering reassurance that, armed with practical knowledge, the care of PwP with COVID-19 can be optimal and effective. ●

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