Letter to the editor: risk comorbidities of COVID-19 in Parkinson’s disease patients in Germany

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Main text
The current coronavirus disease 2019 (COVID-19) pandemic has global significance. From a neurological point of view, COVID-19 patients frequently present with neurological symptoms [1]. Moreover, patients with chronic neurological diseases such as Parkinson’s disease (PD) are particularly challenged as this pandemic affects PD patient care, routine visits, medical supply issues and causes disruption to PD research [2]. Most importantly, PD patients often fall into the core population which is at risk for COVID-19. The risk profile for COVID-19 is confirmed very specifically in recent data from an own analysis of PD patients in Germany [3].

We here analyzed current data of all inpatient PD patients in Germany as coded in the German Diagnosis-Related Groups (G-DRG) system which is relevant for reimbursement of inpatient treatment cost. For the year 2018, we extracted the data of PD patients to determine the presence of comorbidities with known high risk for a severe course of COVID-19 [4] such as hypertension, cardiovascular disease, cerebrovascular disease, diabetes, hepatitis B infection, chronic obstructive pulmonary disease, and chronic kidney disease. We also analyzed the proportion of PD patients who are in need of care measures. Overall, this analysis provides data of 45,345 inpatient cases with primary diagnosis PD in the year 2018.

We found a strikingly high prevalence of these risk comorbidities in the PD cohort, especially in the patient subgroup without presence of motor fluctuations. This specifically supports the hypothesis that PD patients in general and some subgroups could be at a higher risk for a severe course of COVID-19. Moreover, we found a high level of care dependency of PD patients which makes it impossible to completely limit contacts to other people or self-isolate because of their need for care staff (Table 1).
In summary, this nationwide data from Germany points out several clinical characteristics of inpatient PD patients that are risk factors for a more severe course of COVID-19. Apart from the increased occurrence of pulmonary infections, strict social distancing is often difficult due to care dependency. We do not consider PD itself to represent a risk factor for COVID-19 and a diagnosis of PD should not lead to any difference in decisions making to treat COVID-19 in these patients. The frequent comorbidities with PD rather highlight the importance of preventive strategies such as telemedicine consultations and preventive testing of care staff. Neurologists and movement disorders specialists should consider a very careful attitude in the treatment of Parkinson’s patients with prudent prevention of infections in these challenging times.

**Abbreviations**
COVID-19: Coronavirus disease 2019; G-DRG: German Diagnosis-Related Groups; PD: Parkinson’s disease; SARS-CoV-2: Severe Acute Respiratory Syndrome Coronavirus 2

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**Authors’ contributions**
DR prepared the manuscript. DB, CK and LT critically revised the manuscript for intellectual content. All authors read and approved the final manuscript.

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**Availability of data and materials**
The G-DRG datasets analysed during the current study are available online from the Federal Statistical Office (DRG-statistic 2018, Federal Statistical Office, www.destatis.de).

**Ethics approval and consent to participate**
Not applicable.

**Consent for publication**
Not applicable.

**Competing interests**
The authors declare that they have no competing interests.
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