

Letter to the Editor

Sudden Unexpected Death in Parkinson 's disease: What Went Wrong?

Laís D. Rodrigues¹, Leandro F. Oliveira¹, Carla A. Scorza¹, Monica L. Andersen², Sergio Tufik², Ana C. Fiorini³, Fulvio A. Scorza¹, Josef Finsterer⁴¹Disciplina de Neurociência Universidade Federal de São Paulo/Escola Paulista de Medicina (UNIFESP/EPM), São Paulo, Brasil²Departamento de Psicobiologia Universidade Federal de São Paulo/Escola Paulista de Medicina (UNIFESP/EPM), São Paulo, Brasil³Programa de Estudos Pós-Graduado em Fonoaudiologia, Pontifícia Universidade Católica de São Paulo (PUC-SP), Brazil; Departamento de Fonoaudiologia, Escola Paulista de Medicina/Universidade Federal de São Paulo (EPM/UNIFESP), São Paulo, Brazil⁴Krankenanstalt Rudolfstiftung, Messerli Institute, Vienna, Austria

*Corresponding Author

Josef Finsterer, MD, PhD

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Always on the lookout for articles from *Neuroepidemiology*, one in particular (Kadastik-Eerme, L. *et al.*, 2019) has attracted a lot of attention because the results are really interesting. Although replication is needed for other populations, Kadastik-Eerme and colleagues addressed a priority issue in clinical research demonstrating that mortality in patients with Parkinson's disease (PD) within the first 5 years of the disease did not differ from the general population (Kadastik-Eerme, L. *et al.*, 2019).

Considering that many neuroscientists still are not aware of the importance of evaluating the different causes of mortality in PD (Scorza, F. A. *et al.*, 2017), we applaud the authors for pursuing this topic (Kadastik-Eerme, L. *et al.*, 2019). Moreover, the possible existence of some cases of sudden unexpected death in PD (SUDPAR) also deserves some reasoning.

PD is one of the most frequent age-related neurodegenerative disorders, affects millions of people globally, has no cure, and a prevalence that will double by 2030 (Soukup, S.F. *et al.*, 2018). Several epidemiological studies are clear in demonstrating that PD is accompanied by high rates of premature death compared with the general population (Poewe, W. *et al.*, 2017; Scorza, F.A. *et al.*, 2018). Due to these studies, PD has been considered a malignant disease (Scorza, F.A. *et al.*, 2018) and this has to be assessed and discussed as a serious public health topic (Poewe, W. *et al.*, 2017; Scorza, F.A. *et al.*, 2018). It is well

established that the main causes of death in PD are pneumonia, cerebrovascular, and cardiovascular diseases (Poewe, W. *et al.*, 2017). However, there is another cause of mortality, less well-known, pointed in the literature since the 1970s, currently called SUDPAR (Rajput, A.H., & Rozdilsky, B. 1976; Sato, K. *et al.*, 2006; Matsumoto, H. *et al.*, 2014; Nishida, N. *et al.*, 2017; & Zhang, Y. *et al.*, 2018). Actually, SUDPAR is increasingly discussed as a contribution to mortality in PD (Scorza, F.A. *et al.*, 2018). In a didactic way, SUDPAR is defined as unexpected death of a patient with PD without any satisfactory cause of death as determined by autopsy (Poewe, W. *et al.*, 2017). Until now, causes of SUDPAR remain elusive (Scorza, F.A. *et al.*, 2018). However, the results of translational studies suggest that cardiac abnormalities and autonomic dysfunction play key roles in SUDPAR (Scorza, F.A. *et al.*, 2018). In addition, a number of risk factors may be directly associated with SUDPAR such as age at onset, duration of PD, gender, severity of motor dysfunction, and drug treatment (polypharmacy) (Scorza, F.A. *et al.*, 2018), but these factors require further investigations in experimental and clinical studies.

Overall, our research group is sure that there is a long way to go. Firstly, while not knowing the cardiovascular causes responsible for fatal events in individuals with PD, strategies for routine cardiovascular screening (standard ECG, long-term ECG recordings, echocardiography, cardiac MRI)

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should be performed. Second, it is clear that better delineated experimental and clinical studies are needed to identify the main risk factors and exact mechanisms of SUDPAR. Considering that PD is a systemic disease, we will also have to explore the close collaboration between the medical specialties and the multidisciplinary team, in order to improve autonomic/cardiac function and establish effective preventive measures to avoid premature fatal events in individuals with PD.

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DISCLOSURE

The authors report no conflicts of interest.

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