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Letter to the Editor

The heart in Parkinson's disease: Opening Pandora's box

We read with great interest the article by Gibbons et al. (2017) who evaluated whether heart rate variability, the electrocardiographic QT interval, or both, are associated with the severity and outcome of Parkinson's disease (PD). Despite the importance and scientific perspectives of this study, we have some comments and concerns.

In general terms, the authors reported the occurrence of autonomic dysfunction in PD patients (Gibbons et al., 2017). It is well established that symptoms and signs of autonomic failure may occur in PD patients, particularly in the cardiovascular, gastrointestinal, and genitourinary systems (Kaufmann and Goldstein, 2013). Thus, it would be interesting to know if the included patients were investigated for abnormalities of the autonomous nervous system other than the cardiovascular domain? How many had autonomic neuropathy?

Since the aging process may be associated with the development of cardiac conduction defects (Steenman and Lande, 2017) resulting in electromechanical alterations that may culminate in sudden cardiac death during the disease course, we should be informed how many of the included patients died suddenly during the follow-up period? How many patients required a pacemaker, and how many an implantable cardioverter defibrillator, or a cardiac resynchronisation system?

Since new suggestions and insights will pave the way for more routine cardiac screening in PD patients (Scorza et al., 2016), we also recommend that PD patients with cardiac autonomic manifestations undergo echocardiography. How many of the included patients had echocardiography and which were the results? In how many of the patients was the family history positive for heart failure or sudden cardiac death?

One of the parameters that has received special attention in the literature is the cardiac risk linked to polypharmacy with compounds prescribed for the treatment of PD (Scorza et al., 2016; Heranval et al., 2016). Looking into this direction, we would like to ask if the association between QTc duration and disease severity is attributable to an increased number of drugs these patients usually need to take? And yet, in case prolonged QTc was due to anti-PD medication, how did the authors manage this situation? Were anti-PD drugs withdrawn and was a reduced risk for arrhythmias associated with deterioration of the PD manifestations?

Overall, life expectancy of patients with PD increased significantly over the 10 years from 1980 to 2015 (61.7 years to 71.8 years) (GBD 2015 Mortality and Causes of Death Collaborators, 2016). Accordingly, prolonged survival greatly increased the risk for the occurrence of cardiovascular disease (Kaufmann and Goldstein, 2013; Poewe et al., 2017). As a result, PD should not be considered a benign condition since several studies indicate that PD patients have a higher risk of premature death compared with the general population (Poewe et al., 2017) and sudden unexpected death in Parkinson Disease (SUDPAR), a uncommon but tragic event, sometimes occurs in these patients (Scorza et al., 2016; Matsumoto et al., 2014; Nishida et al., 2017). Although the exact pathogenesis of SUDPAR remains uncertain, possible dysfunction of the cardiovascular system could play a causative role (Scorza et al., 2016; Scorza et al., 2017; Matsumoto et al., 2014; Nishida et al., 2017). Finally, a more accurate cardiovascular evaluation of PD patients and the development of translational studies are really warranted. For now, we are sure that the Pandora's Box has been opened!

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Disclosure

The authors report no conflicts of interest.

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