



## Correspondence

## Response to: Sudden death in Parkinson's disease: Unjustifiably forgotten



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## To the Editor:

We highly appreciate the interest of Dr. Fulvio Alexandre Scorza and colleagues regarding our recent work on mortality in Parkinson's disease (PD) [1].

We agree that an increasing number of PD patients die suddenly and unexplained which referred as "Sudden Unexpected Death in Parkinson's Disease" (SUDPAR). In our study, we also find an increasing SMR in unknown reason (SMR = 19.759, 95%CI 3.530–59.277). Meanwhile, there may be a bias for this high frequent death of unknown reason derived from a relatively small clinic based samples in the present study. Based on their comments, we found that the three patients died of unknown causes are all postural instability and gait difficulty (PIGD) type in our study. In this study focusing on mortality and related factor of death in PD patients, we identified a normal survival of patients with PD compared to the control population over ten years follow-up and also indicated that PIGD subtype is potential predictors for poor survival.

Compared with tremor-dominant subtype of PD, PIGD patients display worse clinical profile, disease course, and prognosis. Especially, previous study shown that patients with a PIGD motor phenotype were more likely to have more autonomic symptoms than tremor dominant subjects, such as orthostatic hypotension (OH) [2].

Based on a small number of autopsy studies, researcher assume that OH and arrhythmia may be related to some of the true causes of sudden death of PD [3,4]. Excessive vasodilation may lead to fatal syncope in patients with severe OH [5] and cause cardiac sudden death consequently [6]. Meanwhile, some Parkinson's drugs such as levodopa and dopamine receptor agonists could exacerbate OH. On the other hand, poor prognosis of PIGD may be associated with greater dopamine deficiency and extensive Lewy body pathology [7,8]. Among them, abnormal Lewy body in the heart is likely to increase the risk of sudden unexpected death [4]. We could speculate that abnormal regulation of the cardiac autonomic nervous system due to Lewy body pathology could be a trigger for cardiac sudden death.

In summary, we identified a normal survival of PD patients

compared to the control population, but the relative risks were particularly high for death from unknown reasons in present study. We fully agree that SUDPAR is a potential cause of death in PD that we have to pay real attention to. Further prospective study with clinical and pathological examinations are necessary to reveal it in future.

## Disclosure

The authors report no conflicts of interest.

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