LETTER TO THE EDITOR

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Excessive charity: A new aspect of impulse control disorders in Parkinson's disease?

We report, in this study, a new aspect of impulse control disorders (ICDs), never been described in the literature; being "excessive charity or No-limit donation" and stress the need to consider social-cultural backgrounds when managing Parkinson's disease (PD) patients under dopaminergic treatments (for methodology details, refer to our previous article on ICDs in Moroccan PD patients [El Otmani *et al.*, 2019]).

Charity was classified as pathologic if it met the following criteria: a rate exceeding the patient's previous habits; impulsiveness or lack of preplanned decisions and actions resulting in social, financial or legal problems as well as the fact of being a frequent preoccupation, not solely related to a special occasion (Black, 2001).

One hundred twenty-five PD patients were recruited for this study. The four common ICDs and related disorders were detected in about 28% of cases (35 patients). A higher prevalence of 18.4% (23 patients) was noted for an unusual behavior : a frequent preoccupation with charity, described as an irresistible urge to give, that exceeded patients' financial resources, repeatedly caused conflict among family members (in all 23 cases), resulted in three cases of major indebtedness and a case of divorce due to indebtedness. The defective charity (+) group included 10 males and 13 females with a sex ratio of 0.77 and a mean age of 55 years. Seventy-eight percent of cases (18 patients) had at least one additional, common ICD (mainly pathological buying and eating behavior disorder), but was isolated in five cases (22%). Eighteen patients had a history as "charity givers"; however, all 23 cases have seen their donations multiply 5 to 500 folds (mean 20 folds) following dopaminergic treatments. This behavior did not seem to be related to any spiritual occasion or concern.

What we mean by charity, in this study, is the act of giving "monetary assets." Judging the excessiveness of this behavior is a strenuous task, just as judging an act of buying, eating or a sexual conduct as being "excessive" is difficult, unless they result in psychological suffering or in devastating social, financial or even legal consequences, which was clearly reported by our patients.

We think that "excessive charity" could be recognized as an ICD since it shares with the common ICDs the same risk factors (Weintraub *et al.*, 2010): patients of the charity (+) group were younger than those in the charity (−) group (55 years old vs 59 years old, $p = 0.042$), encountered a clear influence of dopamine agonist dose (180 mg/d in the charity (+) group vs 50 mg/d in the charity (−) group, $p = 0.01$) and their condition was associated to one (or more) commonly known ICD (78% of cases, $p = 0.0000$).

To the best of our knowledge, our study is the first to report "excessive charity or No-limit donation" as an ICD in a large series of 23 PD patients and highlights the influence of sociocultural context (here Arab-Muslim) in the development of such disorders.

Conflict of interest

None.

Description of authors' roles

H. EL Otmani designed and carried out the study as well as analyzed the data. Z. Abdulhakeem wrote and formatted the manuscript as well as prepared it for submission. B. EL Moutawakil, S. Bellakhdar, and M.A. Rafai reviewed the study and the manuscript.

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