

High Prevalence of cognitive impairment in patients with Parkinson's disease presenting to hospital



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Abstract:

The Parkinson's passport is a compact document consisting facts and tips about managing PD. The aim of the study was to examine the impact of 'The Parkinson's Passport booklet' on the care and management of patients with Parkinson's admitted to an Australian hospital. The results suggest the implementation of the Parkinson's passport booklet does not improve the care and the management of a patient with PD who present to hospital which in turn challenges the efficacy of the document. However, the major unexpected finding during the course of the study was a high incidence of cognitive impairment in PD patients (85%) presenting to hospital.

Introduction

Parkinson's disease (PD) is the second most common neurodegenerative disorder in Australia and is the most common of movement disorders. In a longitudinal study, dementia is present in 83% of people with PD at 20 year follow up (Hely et al. 2008). In comparison to the general population, people with PD are twice as likely to be hospitalised (Low et al. 2015) and for those who are hospitalised, they are more likely to develop delirium, experience worsening of Parkinsonian symptoms and other nosocomial comorbidities that increases their length of stay (Lubomski et al. 2015).

Aim of Study

Between 2013 and 2016 we conducted a prospective, qualitative, study to examine the impact of 'The Parkinson's Passport booklet' on the care and management of patients with Parkinson's admitted to an Australian hospital. The Parkinson's passport is a compact document consisting facts and tips about managing PD.

Inclusion Criteria

The inclusion criteria for recruitment included a clinical diagnosis of PD regardless of the patient's presenting problem and patients with a diagnosis of an atypical Parkinsonism were excluded. The subject must also be willing to participate in the study. Consent was acquired from the patient if they were able to appropriately converse and sign the study consent and where the patient was unable to, the family or carer was asked to participate.

Method

After consent was acquired, a baseline cognitive screen using the Montreal Cognitive Assessment (MoCA) was performed on initial contact for every subject.

The patients were then randomised into two groups. The first group was studied throughout their admission without the implementation of the Parkinson's passport. The second group was studied with the implementation of the Parkinson's passport within 24 hours of presentation to hospital. The difficulty of early identification of the patients' admission prolonged the recruitment process. The outcome measure of this study were three separate qualitative questionnaires; distributed to the patient or carers, the doctors and nurses that was involved in the care of the patient. The domains of the questionnaire covered the participant's understanding of PD, the perceived quality of care provided to the patient and the overall impression of how well the patient's PD was managed during their admission. A total score for each questionnaire was tallied and the data was analysed using the Mann-Whitney U test and the t-test.

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As part of this study, we recruited 20 patients with Parkinson's sequentially in an unbiased fashion. The patients had an average age of 72 years (age 49-88) and duration of PD of 14 years (1-30). The average total daily levodopa intake was 1189mg (range 300-2064mg) with eight patients receiving dopamine agonists, two with levodopa carbidopa intestinal gel and two with Deep Brain Stimulation (DBS). Of those 20 patients, 10 (50%) of those patients were admitted directly under neurology, four (20%) was admitted under neurology via emergency department and six (30%) were admitted under various specialties including geriatrics, orthogeriatrics, and emergency.

Results

The results revealed no statistically significant difference between the pre and post-passport groups in the patient questionnaire (35 vs 37, p 0.2541), the doctor's questionnaire (31.5 vs 32, p 0.9123) and the Nurse's Questionnaire (29 vs 28, p 0.9483). The negative results of this study suggest the implementation of the Parkinson's passport booklet does not improve the care and the management of a patient with PD who present to hospital which in turn challenges the efficacy of the document.

Discussion

However, the major unexpected finding during the course of the study was a high incidence of cognitive impairment in PD patients presenting to hospital. Using a MoCA score of 26 or less out of 30 as an indication of abnormal cognition 85% (17 out of 20) of the patients had evidence of cognitive impairment, with a mean MoCA of 18 out of 30 (range 0-30).

Cognitive impairment in patients with PD has increasing prevalence with longer disease duration having an estimated incidence of 83% at 20 years (Hely et. al. 2008). Delirium may also be a contributing factor that causes impaired cognition in hospitalised PD patients. It may be secondary to a variety of causes but is more common in patients with baseline cognitive impairment. Cognitive impairment in PD may be mild and subtle and is often under recognised (Mamikonyana et. al. 2009), particularly those presenting to hospital for other reasons. A study in 2009 retrospectively reviewed medical records over a 6-year period reviewed 143 admissions of PD patients out of 1920 admissions. They identified 25% of the PD admissions

were attributed to a combination of motor and psychiatric conditions and 24% were for psychosis (Klein et al. 2009) both of which have an impact on a patient's cognition.

Although numerous studies have identified various reasons for admissions which may impede cognitive function in patients with PD admitted to hospital, there are limited studies that specifically examines cognitive status of hospitalised PD patients.

Whilst patients with PD at home or on initial presentation may appear cognitively intact, this coincidental finding challenges the commonly held practice of allowing PD patients to self-medicate whilst admitted to hospital. It also exposes the ethical issue around a PD patient's ability to provide consent for medical procedures and brings into question the reliability of a medical history provided by these patients.

Conclusion

In conclusion, the results of this study suggest that the use of a Parkinson's passport booklet does not significantly impact the patient's care when admitted to hospital. However, an unexpected but most important finding of this study highlighted the high prevalence of cognitive impairment in people with PD who are hospitalised which should instigate a review of the current practice that encourage PD patients to self-medicate during their hospitalisation, the legalities behind consent acquisition and the potential need to perform formal cognitive screening for all PD patients presenting to hospital.

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