

ORIGINAL ARTICLES

PARKINSON'S DISEASE AND THE FREQUENT REASONS FOR EMERGENCY ADMISSION IN METROPOLITAN MEDICAL CENTER A 2 YEAR RETROSPECTIVE STUDY

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Abstract

The objective of this study was to provide a profile of patients with Parkinson's disease (PD) who required admission to hospital. We reviewed retrospectively all patients with PD who were admitted to our hospital from December 1, 2010 to December 1, 2012. There were 47 PD patients. The average age was 76 years. Of these patients, 30 were males and 17 were females. The average duration of hospitalization was 11.7 days. The main reasons for admissions were: 1) chest infections (40%), 2) Gastrointestinal symptoms (19%), 3) Trauma control of PD symptoms (6%), 4) Soft tissue infections (6%) 5) Urinary retention 6% and 6) Control of PD symptoms (4%). Nine per cent were classified as Hoehn and Yahr stage 2, 31% as stage 3, 31% as stage 4 and 24% as stage 5. The current in-patient load of PD patients is expected to rise with the aging population. A significant number of people within the community may have undiagnosed PD. These patients suffer multiple medical problems and need a multi-disciplinary team approach to management. Greater resources will be required to support these patients in the community.

Keywords: Parkinson's disease, (ICD) - 9 code 332.0, Hoehn and Yahr (H&Y), Emergency admission

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Introduction

Parkinson's disease affects approximately 7 in 1000 persons 40 years and older and 3 in 100 persons 80 years and older. Its incidence increases with advancing age¹. Available data suggest that patients with PD have a significant socioeconomic impact owing partly to increased hospital and drug utilization. As the world wide population is aging, we expect these figures to increase with time². PD causes significant expense for the national healthcare system due to its chronic progressive course, duration of the disease, the high prevalence, and the devastating prognosis³. The chronic, progressive course of the disease, which often leads to severe disability, results in reduced or lost productivity as a result of illness or premature death⁴. PD is associated with a wide range of complications of advancing disease. However, it is unclear how often these occur in the overall population of patients with PD⁵.

Patients with PD in the early stages generally do well and do not require emergency treatment. It is in the advanced stages that emergent situations begin to arise⁶. As PD is usually managed within specialty clinics by specialist physicians, the non-specialists often have little experience with this condition. However, at times of emergency admission, the patient is often cared for by non-specialists. Also, given the specific needs of such patients, unfortunately, patient care is often suboptimal⁷. The aims of this study were to provide a profile of patients with PD who required admission to hospital, and to determine the reasons for emergency admission.

Patients and Methods

The study was conducted at Metropolitan Medical Center, between December 2010 to December 2012, patients with PD that was admitted to our institution were reviewed retrospectively. This was done by tracing the medical

records of patients with a primary or secondary discharge diagnosis of PD [International Classification of Disease (ICD) - 9 code 332.0].

The severity of PD was classified according to the Hoehn and Yahr (H&Y) staging scale⁴. In stage 1, there is unilateral disease only. In stage 2, there is bilateral involvement with no postural abnormalities. In stage 3, there is bilateral involvement with mild postural abnormalities but the patient is able to lead an independent life. In stage 4, there is bilateral involvement with postural instability and the patient requires substantial help in daily activities. In stage 5, the patient is confined to bed or chair.

Results

We obtained information from 47 patients with PD. Mean age was 76 years. 36% were female and 64% were male.

Medications

Thirty five patients (76%) on Carbidopa + Levodopa, three patients (6%) on Carbidopa + Levodopa + Entacapone, three patients (6%) on Ropinirole, two patients (4%) on Benserazide + Levodopa. Four patients (8%) were not on any anti-parkinsonian drugs during the period of hospitalization.

Outcome

In 47 of the admissions, 46 patients returned to their own homes upon discharge, there is one in-patient death and was due to septic shock secondary to community acquired pneumonia.

Discussion

This study indicated that the frequency of emergency admittance is not dependent on the duration of PD. According to assumed PD progress in years, we had expected more frequent emergency admittances. This could be explained by three factors; first, only major problems (ie, cerebrovascular accident, hip fracture) require admittance to the emergency department; second, late stage PD patients' minor problems are managed at home by professional visits.

In patients with PD, progressive postural instability causing frequent falls is common. These falls may result in severe head and bodily injury, such as hip fractures. Another problem in late disease is dysphagia leading to aspiration pneumonia or asphyxiation. Autonomic dysfunction is also a fairly common cause leading to orthostatic hypotension, bowel and bladder dysfunction.

Table 1: Patient characteristics and outcome

	N	%
INFECTIONS	19	40.4%
Pneumonia	1	2.1%
UTI	3	6.3%
Skin and Soft Tissue		
TRAUMA	1	2.1%
Upper Extremities	2	4.2%
Lower Extremities		
CARDIOVASCULAR	1	2.1%
Heart Failure	1	2.1%
Cardiac Dysrhythmia	1	2.1%
Acute Coronary Syndrome		
CEREBROVASCULAR	1	2.1%
CVA		
GASTROINTESTINAL	4	8.5%
Dysphagia	4	8.5%
G.I. Obstruction	2	4.2%
Electrolyte Imbalance	1	2.1%
Acute Gastroenteritis	2	4.2%
Acid Peptic Disease		
NEUROLOGY	4	8.5%
Control of PD Symptoms		
TOTAL	47	100%

Constipation, fecal impaction, and urinary tract infections are common problems at the later stages of disease. Orthostatic hypotension is not only a disease-related but also a treatment-related disorder. The disease-related component is correlated with disease duration.

The treatment-related component is a result of tendency of dopaminergic medications to decrease blood pressure that should be kept in mind⁶.

The H&Y score is not dependent on the time passed from the onset of PD, at least in our patients. This is also reflected in our study: the H&Y score is not correlated with the emergency admittance, regarding reason, and outcome parameters. Festinating gait, which can be the main reason for falls and fractures, was strongly associated with the H&Y score and progressed disease as a result, but not with the disease severity⁸. In this study, longer disease duration had been found to be the only clinical factor to be associated with FSG, but not the whole picture. Early onset PD patients showed a longer duration to reach stage III, IV, and V in H&Y scale, which may be another clue that disease duration and motor disability are not always related⁹.

Emergency admittances of patients with PD are not dependent on their primary disease, but it is indirectly dependent regarding the process of PD. Our study population consisted of clearly defined PD patients and had been evaluated before and after emergency admissions regarding their PD, which was unique. The complications of the later stages of PD and associated treatments are more likely to lead to hospital admission than management of the primary motor disease¹⁰.

The trauma, cerebrovascular accident and cerebrovascular stroke risks of the patients are not dependent on the patient's PD stage by H&Y scale. The cardiovascular risk factors had been studied and found not significantly related with motor disability¹¹.

The patients with PD start to take medications on a proper schedule when they are in need of caregiving, but this medication does not make any meaningful difference in the frequency of emergency admittance. Meanwhile we cannot predict this for the early stages.

There are unique points we observed in our study. First, the H&Y scale is not dependent on the disease duration and emergency admittance. Second, the motor disability by itself cannot predict the whole picture of PD and the systemic complications leading to emergency admittance.

Conclusion

The reasons for frequent admission to hospital for patients with PD were infectious diseases, trauma, cardiovascular emergencies, cerebrovascular emergencies, gastrointestinal emergencies, and electrolyte disturbances. The H&Y score is not dependent on the emergency admittance or the outcome after discharge from the emergency department. The motor disability by itself cannot predict the whole picture of PD and the systemic complications leading to emergency admittance.

Disclosure

No funding source had any role in preparation of this retrospective study and the authors have no conflict of interest.

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