People with Parkinson's Disease in Hospital

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Introduction

Parkinson’s disease (PD) is a complex neurodegenerative disorder. It becomes increasingly common with age: it affects 0.2% of the overall population, but 4% of those aged over 80 years.\(^1\) The classic motor symptoms consist of bradykinesia, rigidity and tremor, but the importance of non-motor symptoms is increasingly recognised. These can include psychiatric problems such as dementia, depression and psychosis, and autonomic dysfunction including postural hypotension and bowel disturbance.\(^1\)

Treatment is symptomatic as no intervention has been proven to halt or reverse disease progression. Among other medications, most patients are prescribed L-dopa to correct the loss of dopamine in the nigrostriatal pathway. This drug helps alleviate the cardinal motor symptoms, but often does little for non-motor problems. It can also worsen psychiatric symptoms.\(^1\)

Most patients with PD will be admitted to hospital at some stage of their illness.\(^2\) This essay will explore the causes of admission and some of the problems that may arise while in hospital. It will conclude by considering care at the end of life.

Causes of admission to hospital

There are conflicting reports as to whether people with PD spend more time in hospital than their peers.\(^2\) In a of study from the town of Stavanger in Norway, Vossius et al followed 108 patients with PD and 854 age and sex matched controls.\(^3\) There is only one hospital within a two-hour drive of this town, allowing local hospital records to be used as a relatively reliable indicator of inhabitant’s hospital attendances.

Over 12 years, the number and length of hospitalisations was similar in the two groups, but the causes of admission were very different. The diagnosis at discharge was "vascular disease" (including stroke and myocardial infarction) in 27.7% of the admissions involving controls, compared to 13.7% of admissions of patients with PD (p<0.001). Cancer was also significantly
less common in patients with PD, but trauma showed the opposite trend. Pneumonia was not more common in the PD group, although other studies have found that it is a common cause of death.²

"Parkinson's disease" was the main diagnosis in one quarter of admissions, although different doctor's interpretation of “discharge diagnosis” may vary.³ The exact cause for these admissions was not studied, but there are several reasons why people PD may require inpatient care for their disease. A few of the commoner ones are discussed here.

Each year about 0.3 out of 100 people with PD suffer an acute, severe episode of akinesia, often associated with dysphagia, hyperthermia, altered mental state and elevated serum levels of certain muscle enzymes.⁴ The state is often precipitated by infection, surgery, medication or trauma. It can also occur after withdrawal of PD medication, which makes harder to manage the side effects of these drugs. Historically there has been confusion surrounding the definition and terminology of this syndrome, but it has recently been proposed that the term "akinetocrisis" is the most helpful.⁴

This state can be difficult to diagnose, especially for non-specialist staff. Misdiagnosis could be catastrophic if antidopaminergic sedatives were prescribed. It is important to ascertain whether there are any correctable causative factors. For example, akinetic crises may be caused by constipation leading to reduced drug absorption. It is also important to consider a wide differential diagnosis, as a similar clinical picture can be caused by toxins, metabolic disturbances and psychiatric medications.⁴

There is a paucity of evidence on which to base treatment. Experts advise continuing PD medication, treating hyperthermia and dehydration, instigating thromboprophylaxis and monitoring blood pressure and heart rhythm. Mortality is between 10-15%.⁴

PD medication can also directly necessitate hospital admission; over-administration of dopaminergic drugs can cause severe dyskinesias requiring gradual dose reduction and monitoring in hospital.⁴ They can also contribute to acute psychotic symptoms, most commonly visual hallucinations (16-37% of patients with PD), auditory hallucinations (2-22%) and delusions (approximately 5%).⁵ Hallucinations can also occur in untreated PD patients.⁵

The management of psychosis in PD was revolutionised in the early 1970s with the availability of clozapine, the first antipsychotic which did not worsen motor symptoms. Although it is often very effective, it can cause serious side effects including agranulocytosis. Several other suitable drugs are now available, but all confer a small increased risk of death.⁵
Problems that may arise during a stay in hospital

As we have seen, most people are admitted to hospital with PD, not because of it. Therefore the priority with regards to PD is often "first, do no harm". These patients often take a carefully optimised regime of medications which need to be taken at precise times to avoid side effects. Unfortunately these regimes are often disrupted in hospital.

In a recent audit at Aberdeen Royal Infirmary, the medical and nursing notes of all patients admitted to a surgical ward while taking PD medication were reviewed. Out of 51 admissions over 18 months, 36 had one or more missed doses of PD medication, often with no reason documented. Overall 12% of PD medication doses were missed. Three patients experienced a worsening in their motor symptoms while in hospital, and five suffered falls. Other problems included the prescription of inappropriate dopamine-antagonist antiemetics.

Earlier, similar data prompted the charity Parkinson’s UK to launch a “Get it on time” campaign in 2006. This initiative aims to raise awareness of the importance of careful drug administration to inpatients with PD: the charity encourages audits, produces educational material and provides branded washbags for patients. In the Aberdeen audit, the hospital's PD specialist nurse was only informed about one admission. Further involving specialist nursing services could be another way to improve this problem.

On admission, oral medications may need to be changed to another route of delivery if the patient is vomiting, dysphagic or otherwise too unwell to swallow. People with PD are at increased risk of aspiration; pneumonia was the terminal event in 45% of PD patients in a recent case series, and some of these events may have been prevented by avoiding aspiration.

People with PD are prone to falls, especially if they are unwell: motor problems, confusion and postural hypotension can all contribute to unsteadiness. Preventing these is another important way to ensure that a stay in hospital is not harmful - falls are one of the most commonly reported patient safety incidents. The most successful in-hospital prevention programmes have used a combination of different approaches, including reviewing potentially problematic medications and educating patients and staff about trip hazards. Unfortunately it is not clear which parts of these complex interventions are beneficial and cost-effective. This would be a useful question for future research to address.

The best way to reduce harm from these problems is to prevent avoidable admissions. Therefore one of the priorities during admission is to ensure that patients are discharged with their medication optimised, and with follow-up arranged with the appropriate members of the multidisciplinary team.
It is also important to use the opportunity to ensure that carers are coping. Most people with PD are looked after at home by a family member who is often elderly, and caring can cause emotional, physical and financial hardship. Simple, practical help such as providing leaflets about benefit entitlements can make life easier for carers, and possibly help prevent avoidable admissions.

**Care at the end of life**

PD is incurable, and so a “palliative” approach needs to be adopted from diagnosis, in the sense that enhancing quality of life is main aim of treatment. Medication to control motor symptoms is often very effective for the first few years after it is initiated. But the natural history of the disease is for symptoms to worsen, with increasingly severe and frequent “off” phases of slowness, rigidity and tremor alternating with “on” phases when these symptoms are controlled.

It is in this stage that PD is most likely to necessitate admission. Management is difficult because using increasing doses of L-dopa risks causing side effects such as pychosis. Various strategies can help, including adding other drugs and considering surgical interventions. Caring for someone with in this stage is exhausting, and many carers aren’t aware that hospice services are increasingly able to offer tailored respite care for non-malignant conditions such as PD.

Motor symptoms are the most visible aspect of PD. However, a recent systematic review concluded that they are not consistent determinants of health-related quality of life, although gait impairment and disability are. Depression was the most frequently identified determinant of this outcome measure. A stay in hospital could be very beneficial if previously unrecognised depression is diagnosed and management instigated.

**Conclusion**

Successfully caring for people with PD in hospital requires focussing on the basics - getting drug doses correct and on time, involving carers in decisions and planning discharge from the day of admission.

However, it is often a very distressing time for patients and their loved ones, especially if difficult decisions need to be made about how aggressively to treat in the final stages of the illness. It is worth remembering that although most people with PD die in hospital, many would like to spend their final days at home.

*1500 words*
References


