British Geriatrics Society

5th Movement Disorders Section Award:

People with Parkinson's Disease in Hospital:

A Blueprint for Better Care

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Introduction:

Idiopathic Parkinson’s disease (PD) is a progressive neurodegenerative disorder characterised by motor symptoms including tremor, bradykinesia, rigidity and postural instability and by distressing non-motor symptoms including pain, neuropsychiatric, sleep and autonomic disturbances. The cardinal motor features of PD were first collated in 1817 by James Parkinson in An Essay on the Shaking Palsy, however, the aetopathogenesis of PD remains poorly understood. It is hypothesised that multiple environmental factors interact in genetically susceptible individuals causing selective neurodegeneration of nigrostriatal dopaminergic pathways. Age remains the most significant risk factor for developing PD. The European prevalence is estimated at 0.6% in the 65-69 age group rising to over 5% in the 85-89 age group; 120,000 patients in the UK possess a PD diagnosis [1]. Dopamine replacement therapies remain the mainstay of pharmacological treatment of PD, allied to nurse-specialist, physiotherapy, occupational therapy, speech and language therapy and psychosocial support.

This essay will consider the reasons why patients with PD attend hospital, review the quality of care they receive as inpatients and, where deficiencies are apparent, propose simple measures by which the standard of care may be improved.

Why do PD patients attend hospital?

PD patients attend hospital for many reasons, most commonly as outpatients. NICE guidelines recommend that PD diagnoses are made by specialists with expertise in the differential diagnosis of PD and subsequent care shared between general practitioners (GPs) and hospital-based specialists. However, as age remains the greatest risk factor for PD, patients tend to be elderly, with multiple co-morbidities, necessitating multi-specialty medical and surgical care as
inpatients and outpatients. Nevertheless, the frequency of admission for PD patients is significantly higher than age-matched individuals.

A large Canadian study including 15,304 PD patients and 30,608 age-matched controls found PD patients had a 1.5-times higher rate of hospital admission. Aspiration pneumonia, affective psychosis, hip fractures, urinary tract infections, septicaemia and electrolyte imbalance were between 6.3-times and 2.3-times more common compared to controls [2]. This is supported by a smaller UK study which found falls (17%), pneumonia (13%), reduced mobility (8%) and neuropsychiatric manifestations of PD (8%) were the most common primary causes of emergency admission in PD patients [3].

Undoubtedly, these pathologies are related to the disease process: aspiration pneumonia may be caused by dysphagia, psychosis is a neuropsychiatric presentation of PD and the postural hypotension caused by dopaminergic medication plus intrinsic postural instability, contribute to the overrepresentation of hip fractures in PD patient populations. Interestingly, Woodford et al noted that 73% of patients were admitted from their own homes [3]. Therefore, could better management of PD in primary care reduce the number of acute admissions to hospital?

**Is optimum care delivered to inpatients with Parkinson's disease?**

The hospital experiences of patients with and without PD differ significantly. Woodford et al found the length of stay for patients with PD following emergency admission was, on average, 1.2 times longer than age-matched controls [3]. Pepper et al noted that following elective surgery, the hospital stay of patients with PD was, on average, 2.34 days longer and patients suffered significantly greater post-operative morbidity, particularly urinary-tract infections and aspiration pneumonia [4]. The reasons underlying increased morbidity and
length of stay in PD inpatients remain under-explored, but some studies suggest an avoidable component to these observations.

Magdalinou et al reviewed the prescribing of physicians during acute admissions of PD patients to a large district general hospital in Kent. Of the 35 patients with PD admitted via A&E over a 13-month period, 74% of patients had their dopaminergic medications stopped, omitted or an inappropriate medication (e.g. metoclopramide) prescribed. 61% of the patients consequently developed clinically significant sequelae including dehydration, a fractured neck of femur and severe Parkinsonian rigidity, misdiagnosed as a dense stroke [5].

Another recent study audited prescribing during elective and emergency surgical admissions in Aberdeen. The pharmacological management of 68 patients with PD was retrospectively reviewed and, on average, 0.7 doses of anti-Parkinsonian medication were missed per patient per day. Furthermore, 22% of patients received inappropriate medication including haloperidol and metoclopramide [6].

Delay or withdrawal of anti-Parkinsonian medication will exacerbate PD and potentially lead to life-threatening complications such as malignant neuroleptic syndrome and at increased risk of pressure sores and thrombosis. So why does this occur? The historical timing of inpatient drug rounds is contrary to the precise and personalised medication schedule of an individual PD patient [7]. Disrupting established medication schedules might aggravate the long-term side effects of dopaminergic medication including on-off and wearing-off effects and dyskinesias. Furthermore, Parkinsonian symptoms worsen in hospital environments due to the physiological stress of acute illness or surgery the patient’s medication requirements. Thus, a PD patient may present and evolve unpredictably along the akinetic-dyskinetic spectrum, making prescribing challenging for inexperienced physicians. Conforming to hospital routines, particularly mealtimes, when medication schedules are not optimal is problematic. A poorly managed PD patient may be “off” or dyskinetic at
mealtimes, leading to aspiration pneumonias, dehydration or inappropriate nil-by-mouth instruction which further compromises drug administration. Moreover, verbal (dysarthria, hypophonia) and non-verbal (mask-like facies, akinesia) communication is adversely affected by worsening Parkinsonism making it difficult for patients to convey their needs [7].

**How can the hospital care of PD patients be improved?**

Educating health-care professionals about the specific requirements of Parkinsonian patients must form the cornerstone of improving care. The phenomenon of “neurophobia”, a lack of confidence in diagnosing and managing neurological disease is well documented, arising from the relative complexity of neurology and paucity of structured neurology teaching in undergraduate curricula [8]. Furthermore, falls prevention, pain management and other aspects of geriatric and PD care are not financially rewarded within the Quality Outcome Framework in General Practice, and are not, perhaps, prioritised. By restructuring undergraduate neurology and incentivising high-quality primary care, two important outcomes may be facilitated.

Firstly, GPs may recognise the motor and non-motor complications of PD earlier and intervene to prevent hospital admissions. Secondly, GPs may become the focus for appropriate planning of elective hospital admissions, informing hospital staff of individual patient’s needs including medication, mobility and feeding requirements and encouraging relatives or carers to act as advocates for PD patients during their stay. One study found the PD nurse specialist was only informed of 2% of surgical admissions involving PD patients [6], yet nurse specialists are vital facilitators of multi-disciplinary care for PD inpatients, identifying common problems (e.g. medication scheduling, nil-by-mouth regimens, communication problems, falls risk-assessment) and providing practical solutions (e.g. non-oral dopaminergic therapy for nil-by-mouth patients, speech and language referrals for dysphagic and dysarthric patients,
ensuring appropriate nursing care for patients at risk of falls, particularly at night, where nocturia, a tendency towards the off-state and nocturnal dehydration markedly increases falls risk in PD patients). In the acute setting, link-nurses on each ward may undertake a similar role, contacting the PD nurse specialist when a PD patient is admitted. Some hospitals now have electronic systems to alert the PD team when any patient with a PD diagnosis is admitted [7].

With regards to medication, ultimately, the most knowledgeable person with regards to their condition is the patient. Consequently, the Parkinson’s Disease Society has promoted the “Get It On Time” campaign which emphasises the importance of dopaminergic medication and its timing and aims to increase self-medication amongst PD inpatients, which currently stands at 5.8%.

Simple measures such as these should be set in the context of broadly improving the care of elderly patients in the NHS. The recent Health Service Ombudsman Report, found more than twice as many complaints were made regarding the care of elderly patients than all other age groups put together; dignity, nosocomial infection, personal care, nutrition and appropriate discharge from hospital were common areas of concern [9]. Indeed, the sub-standard care that contributed to the death of a patient with PD, including the prescription of inappropriate doses of anti-psychotic medication, poor records of nutrition and fluid balance and poor nursing care formed a case-study in the report. By emphasising and developing the standards of care laid out within the National Service Framework for Older People, basic nursing and medical care for all elderly patients, including those with PD, may be improved.

Finally, appropriate end of life care for PD patients is also extremely important. Only one study has investigated where PD patients die; Snell et al reported that Parkinsonian patients were less likely to die in their own homes than the general population (9% vs. 17%), more likely to die in a care home (36% vs. 21%) and over half of PD patients who died in hospital were admitted in their last week of
life [10]. A delicate balance must be struck between emergency hospital admission for treatable conditions and upholding patient choice and dignity towards the end of life, which requires considerable forward planning and multi-disciplinary input in accordance with the NHS National End of Life Care Programme.

Conclusion:

In conclusion, while the management of PD is challenging, particularly when complicated by acute co-morbidity, this essay proposes that by better educating health-care professionals about the medical and nursing management of PD and its complications, hospital admissions may be avoided through improved primary care and inpatients better managed within active multi-disciplinary teams. These goals should be set in the wider context of improving elderly patient care throughout the NHS.
References:


