Palliative care for Parkinson's disease: A summary of the evidence and future directions

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Abstract

Background: Parkinson's disease is a common, life-limiting, neurodegenerative condition. Despite calls for improved access to palliative care for people with Parkinson's disease, services have been slow in developing. Obstacles include poor understanding and recognition of palliative care needs, the role for specialist palliative care services and an agreed structure for sustainable palliative care provision.

Aim: To summarise the evidence base for palliative care in Parkinson's disease, linking current understanding with implications for clinical practice and identifying areas for future research.

What is known: Convention recognises a final 'palliative phase' in Parkinson's disease, while qualitative studies suggest the presence of palliative care need in Parkinson's disease from diagnosis. Clinical tools to quantify palliative symptom burden exist and have helped to identify targets for intervention. Dementia is highly prevalent and influences many aspects of palliative care in Parkinson's disease, with particular implications for end-of-life care and advance care planning.

Implications for clinical practice: The 'palliative phase' represents a poor entry point for consideration of palliative care need in Parkinson's disease. An alternative, integrated model of care, promoting collaboration between specialist palliative and neurological services, is discussed, along with some specific palliative interventions.

What is unknown: Limited evidence exists regarding timing of palliative interventions, triggers for specialist referral and management of terminal care.

Implications for future research: Research examining access to palliative care and management of terminal symptoms will assist development of sustainable, integrated palliative care services for Parkinson's disease.

Keywords

Parkinson's disease, palliative care, terminal care, dementia, advance care planning

Introduction

Parkinson's disease (PD) is a common degenerative and life-limiting neurological condition, with an estimated prevalence of 27.4/10,000 people, which is predicted to rise.[1] Extending palliative and supportive care services to people with long-term neurological conditions is a stated aim of national health policy, enshrined in National Health Service (NHS) End-of-Life Care Strategy[2] and the National Institute for Health and Clinical Excellence PD guidelines,[3] yet specialist palliative care (SPC) services for PD have been slow to develop.

In order to encourage the development of new services, which address this inequality in palliative care access, we need to understand the nature of palliative care needs in PD and have a sustainable model for the integration of SPC, alongside existing chronic care services.

What is known?

In PD, a 'palliative phase' of disease has been proposed, lasting on average for 2.2 years, defined by a waning response to dopaminergic treatments and cognitive decline.[4,5] Identifying the specific palliative and supportive care needs associated with PD is key to service planning and implementation.

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Qualitative assessment of need: 'Information Tension'

In addition to providing insight into the patient/carer experience, the qualitative literature also highlights the potential role for palliative care from the early stages of disease. Hudson et al.[6] draw parallels between the experience of living with PD and that of cancer, identifying palliative needs from diagnosis (Theme: *emotional impact of diagnosis*) to end-stage disease (Theme: *finding help for advanced stages*).

Recurrent themes across studies include the following: the emotional impact of diagnosis,[6,7] changing social roles, financial difficulties and the carer strain which results when a family member develops PD.[6–8] Study participants also describe a lack of information around the time of diagnosis[6,7,9] and difficulty requesting information from health-care professionals.[6,9] Furthermore, Hasson et al.,[8] studying the end-of-life experience of family members, described a lack of preparedness for the death of loved ones and poor knowledge of SPC services, with some participants even unaware that PD was incurable. Such missing information may lead to a fear for the future and particularly of the later stages of disease.[6] Separate work in the same population confirmed this misperception of palliative services and highlighted carers' difficulty in initiating discussions around advanced disease and end-of-life care.[7]

Moreover, attitudes towards disease-specific information may be complex, as captured by Giles and Miyasaki's[9] phenomenon of '*wanting but not wanting*' – a desire to be informed, existing alongside a paradoxical ambivalence towards prognostic information. A recent systematic review identified a similar dynamic at work in general practitioner (GP) discussions of palliative care, describing how '*most patients report that they want full information but sometimes they seem reluctant to know about a bad prognosis*'.[10] Often discussion of treatment restrictions in degenerative neurological conditions such as amyotrophic lateral sclerosis (ALS) is reactive, triggered by life-threatening events, rather than planned.[11]

Health-care professionals may be reluctant to initiate discussions due to an understandable fear of destroying hope or causing distress, leading to a reliance on 'intuition' as to timing of discussions.[12] Thus, both patients and clinicians may feel conflicted as to the need for, and timing of, discussions around disease progression and advance care planning (ACP), creating an 'Information Tension'. The concept of a lack of available information for patients and carers is strengthened by the consistency of findings in qualitative research, across three continents, suggesting that this is an important aspect of PD palliative care for an international audience.

Quantitative assessment of need: symptom burden

Several authors have sought to identify the palliative symptom burden associated with PD. Lee et al.[13] found that the Palliative Care Assessment (PACA) tool generated a comprehensive list of symptoms and was better than the Unified Parkinson's Disease Rating Scale (UPDRS) in detecting non-motor symptoms (NMS), although this is likely rectified by the updated Movement Disorder Society–sponsored revision of the UPDRS (MDS-UPDRS), which has been designed to cover non-motor features in greater depth.[14] The study produced a list of the top 10 symptoms perceived by patients to 'dominate the day' (see Table 1).

Table 1. Top 10 symptoms 'dominating the day' (n = 123).

PACA	
Symptom	Frequency (%)
Immobility	28.5
Pain	20.3
Slowness of movement	17.1
Insomnia	15.4
Stiffness	8.9
Urine urgency	8.9
Urine incontinence	8.9
Anxiety	8.9
Urine frequency	8.1
Drowsiness	7.3

Source: Adapted from the study by Lee et al.[13]
PD: Parkinson's disease; PACA: Palliative Care Assessment.
This is not an exhaustive list of symptom burden in PD.

More recently, the Palliative Outcome Scale for Symptoms (POS-S) has been adapted for Parkinsonism (POS-PP) and used for longitudinal and cross-sectional assessments of symptom burden.[15,16] Extracting those symptoms identified by at least 50% of patients, at baseline, produces a list, which is largely congruent with that from the PACA (Table 2).

Quantitative assessment of need: importance of dementia

Dementia is common in PD; up to 60% of patients will have developed it by 12 years,[17] and the vast majority of survivors have cognitive impairment or dementia at 15 years.[18,19] Furthermore, the risk of Mild Cognitive Impairment is double that of the general population even at presentation.[20]

Quantitative assessment of need: end of life

A North American study explored patient end-of-life experience, as perceived by carers, and concluded that care needs in PD are similar to those in ALS.[21] In fact, patients with PD experienced greater levels of confusion at the end-of-life, were less mentally alert, less aware of imminent death and less likely to say goodbye to loved ones.

Table 2. Symptoms reported in >50% of patients.

POS-PP		
Symptom	Overall frequency (%)(PD, MSA, PSP)	Frequency in PD alone (%)
Problems using legs	84.2	80.0
Fatigue/lack of energy	84.2	84.0
Feeling sleepy	82.9	86.0
Pain	81.7	86.0
Mouth problems	72.0	70.0
Problems using arms	69.5	64.0
Difficulty communicating	65.9	58.0
Spasms	61.0	60.0
Constipation	59.8	54.0
Difficulty sleeping	59.8	58.0
Difficulty controlling urine	54.9	52.0
Problems in swallowing	51.2	40.0
Shortness of breath	51.2	54.0

Source: Adapted from the study by Higginson et al.[16]
MSA: multi-system atrophy; PSP: progressive supranuclear palsy; PD: Parkinson's disease.
This is not an exhaustive list of symptom burden in PD.

In the PD group, carers often perceived their loved ones to have significant pain without adequate analgesia. Anxiety, confusion and difficulty communicating were prominent, and the majority of patients were unable to make decisions regarding care in the last month of life.[22]

Implications for clinical practice

Information needs

The current evidence suggests that in PD, we are failing to address the complex information needs of patients and carers. Resolving this 'Information Tension' may be key for those wishing to adopt a palliative approach, facilitating discussions of prognosis and ACP, as well as fostering a patient-centred approach to disease management in the early stages.

Symptom burden

The quantification of palliative symptoms supports the claim that NMS are central to disease burden[23] and provide a target for good palliative care. A full review of symptom management in PD is beyond the scope of this article. An evidence-based review of NMS treatments was recently published by the Movement Disorders Society.[24]

Palliative care professionals may encounter the latter stages of disease, where dopaminergic therapies are less well tolerated, principally due to neuropsychiatric side effects (*hallucinations, psychosis*) and motor complications (*dyskinesia, motor fluctuations*).

Inter-current illness should always be excluded as the cause for acute cognitive deterioration, while anticholinergic drugs and Amantadine may be implicated and can usually be withdrawn. PD psychosis may respond to quetiapine, which is often first choice, in practice, despite an inferior evidence base to clozapine, which is complicated by the need for regular blood monitoring for agranulocytosis.[24,25] The cholinesterase inhibitor, rivastigmine, is used in PD dementia and can help reduce hallucinations and agitation.[26]

Ultimately, reduction in dopaminergic medication, with concomitant loss of motor function, may be necessary. Adjunctive therapies are typically removed before reduction in levodopa doses, with a 'last in, first out' policy.[27]

Stopping dopaminergic treatments can be complex and should be undertaken in collaboration with a PD specialist. Neuroleptic malignant-like syndrome may result from sudden withdrawal of Levodopa, and there is increased awareness of the Dopamine Agonist Withdrawal Syndrome (DAWS), characterised by anxiety, panic attacks, depression, dysphoria and insomnia.[28] Clinicians should also be alert to the non-motor implications of tapering dopaminergic therapy, with the possibility of non-motor 'off' effects.

Finally, omitted medication should be considered as a cause for acute deterioration in PD patients, particularly where global decline may have been attributed to co-morbid conditions, such as inter-current infection. This may be pertinent in the acute setting, where patients are unable to take oral medication, before diagnosing a terminal decline.

End of life

Preservation of patient autonomy demands ACP and engagement with patients while they retain decision-making capacity. In PD, due to the prevalence of dementia, this will often mean that discussions are held early in the course of disease. Without this forethought, best interest decisions, taken on behalf of patients, may be the best that can be achieved, at significant cost to patient autonomy.[29] The challenge is particularly acute in the United Kingdom, where use of documented advance decisions is less common than in the United States, and evidence suggests that few patients with PD access hospices in the terminal stages of disease.[30]

Models of service provision: prognosis or need-based delivery?

In the United Kingdom, a prognosis-based system for consideration of palliative care is most familiar,[2] with professionals encouraged to ask 'would I be surprised if this patient died in the next 12 months'.[31] However, this may be less appropriate in chronic non-malignant conditions.[32] In PD, the traditional 'palliative phase' of disease is likely to be a poor entry point to palliative services, as the opportunity to provide support around diagnosis, prepare for disease progression, support carers and institute ACP will often have been lost.

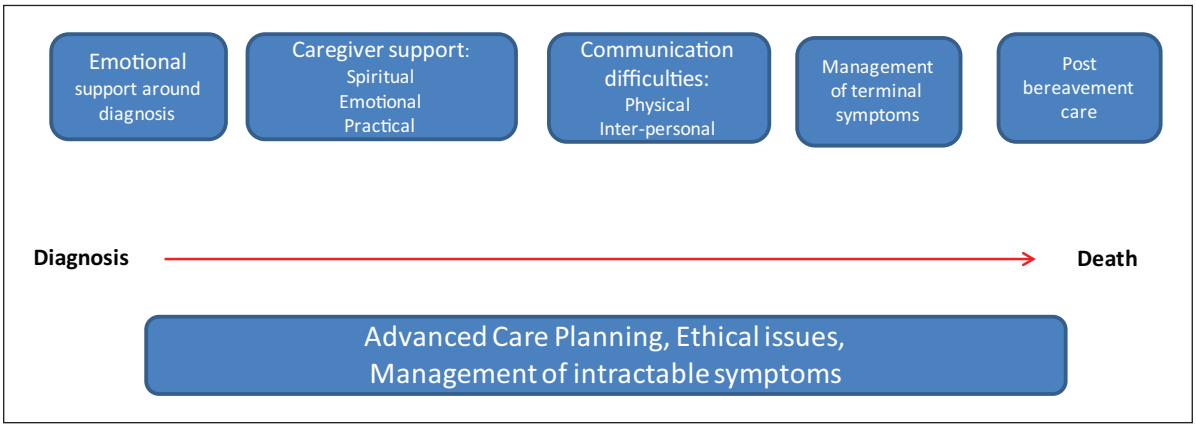

Figure 1. Timeline for potential specialist palliative care involvement.

Integrated models of care, similar to those proposed in other chronic conditions, such as heart failure,[33] have also been proposed for long-term neurological conditions.[34] These recognise the potential for SPC to benefit patients from the time of diagnosis and the fluctuating nature of palliative need.

Integrated care requires monitoring and recognition of unmet palliative care need, identification of triggers for SPC referral and close working between neurological and SPC services. In general, it seems neither feasible nor desirable that palliation be the sole remit of SPC. Instead, the majority of palliative care needs could be met through a palliative approach in existing neurological services, with recourse to SPC for training and support on a case-by-case basis. Over time, as skills are enhanced, it is likely that a greater range of problems can be addressed without SPC referral.

International variations may require that this model is adapted, but collaboration between specialists seems essential. Resource-poor settings may encounter particular challenges, for example, levodopa availability, but the predominance of NMS, many of which are non-levodopa-responsive, means that there is still potential benefit in adopting a palliative approach.

What is not known?

Timing of palliative interventions

There is little evidence to guide the timing of palliative interventions. The identification of 'red flags' for unmet palliative care need and 'trigger' events for SPC referral will facilitate the implementation of the integrated model of care discussed above.

Clinical features heralding the onset of end-of-life care in long-term neurological conditions have been suggested[34] (see Box 1). First episode of aspiration may be particularly pertinent in PD where pneumonia is the commonest cause of death.[35]

Box 1. Indicators for end-of-life care.

- Swallowing problems
- Recurrent infections
- Marked decline in physical function
- First aspiration pneumonia
- Cognitive difficulties
- Weight loss
- Significant complex symptoms

Source: Adapted from the National End of Life Care Programme.[34]

In PD, the occurrence of four key clinical features (1 – *visual hallucinations*, 2 – *regular falls*, 3 – *dementia* and 4 – *admission to residential care*) has been shown to consistently herald the terminal phase of disease, regardless of age at onset, and could serve as important milestones for palliative review.[36] To our knowledge, the utility of these as point of access to palliative services has yet to be examined.

Terminal care strategies

There is little published evidence relating to the occurrence or management of terminal phase complications in PD, and common drugs such as haloperidol, metoclopramide and levomepromazine are relatively contraindicated. Case studies describe the parenteral use of anticholinergic drugs to control terminal tremor[37,38] and the relief of severe bradykinesia and terminal agitation with apomorphine.[39]

Implications for future research

Future research should seek to further clarify the disease events associated with increased palliative care need and to examine these, prospectively, in an integrated palliative care service. The development of brief clinical tools to screen for, rather than quantify, palliative need may aid clinicians in daily practice. Collaboration is urgently required to draw together the experience of clinicians and develop a more robust evidence base for managing terminal symptoms.

Conclusion

There is little doubt that patients, carers and clinicians would benefit from improved palliative care provision in PD. There is a compelling argument to move away from the traditional prognosis-based model towards fully integrated, need-based provision. This is rooted in the literature concerning patient/carer experience as well as the natural history of the condition and may be fundamental to maximising patient autonomy. Meanwhile, understanding the 'red flags' that should alert us to unmet need and developing efficient methods of assessment will be key to negotiating the development of integrated services, which are both effective and sustainable.

Declaration of conflicting interests

The authors declare that there is no conflict of interest.

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