

Parkinson's disease

Parkinson's disease - G20 ((Secondary Parkinsonism - G21.9, Secondary Parkinsonism due to drugs - G21.1, Essential tremor - G25.0, DSM - IV 294.1 Dementia due to Parkinson's disease)

Introduction

Parkinson's disease (PD) is the second most common neurodegenerative disease after Alzheimer's disease. The prevalence rate in the UK for PD is approximately 100-200 / 100,000 of the population. The prevalence increases above the age of 50 years to 500 / 100,000 (1 in 200) giving estimates of around 100,000 patients with PD in the UK.

Diagnostic features

The clinical diagnosis of Parkinson's disease (PD) is based entirely on clinical history and examination. Although the majority are correctly diagnosed, there are inconsistencies between the clinical diagnosis and the neuropathological diagnosis in 20 to 25% of patients.

The diagnosis requires a combination of:

- bradykinesia - poverty of movement
- tremor - typically at rest affecting the upper limbs and "pill-rolling"
- rigidity - increase in tone (either lead pipe or cogwheel due to superimposed tremor)
- postural instability - usually a feature of the illness after several years.

Symptoms usually begin unilaterally in PD, although asymmetric onset is neither sensitive or specific as a marker for PD.

Nonmotor clinical features develop in PD. These features are common and include:

- Dementia - cognitive deficits occur later in the disease course in 30-40%. Typically in the older than younger patient.
- Autonomic disturbances - PD patients may demonstrate gastrointestinal or urinary dysfunction (frequently constipation, and urgency with urge incontinence respectively), orthostatic hypotension, and sexual dysfunction. Prominent autonomic symptoms suggest that the diagnosis may be an atypical parkinsonism such as Multiple System Atrophy (MSA).
- Depression - may occur in 40% of patients
- Pain and sensory symptoms - occurring in up to 50% of patients and often related to the degree of motor impairment.

Differential diagnosis

The presence of atypical clinical features suggests other neurodegenerative disorders, (often termed Atypical Parkinsonism).

Errors in the diagnosis of PD are more likely in the early stages of the illness when atypical features may not have yet developed. Therefore it is prudent to review the diagnosis should this occur.

Essential tremor (ET): The tremor is usually upper limb, symmetrical and worse with posture and action as compared to at rest in PD. It may also involve the head and voice. ET is dominantly inherited, and may respond to beta-blockade, primidone.

Drug - induced parkinsonism: neuroleptic medication used for psychiatric illness such as chlorpromazine and haloperidol and other major tranquillisers can cause a parkinsonism that may be difficult to distinguish from PD. Conventional anti-emetics (prochlorperazine, metoclopramide) and drugs that deplete dopamine (such as tetrabenazine) may result in a similar parkinsonian syndrome.

Parkinsonism “plus”: the term is used when the clinical state has additional features to the parkinsonism. The most commonly recognized are Multiple System Atrophy (MSA) and Progressive Supranuclear Palsy (PSP) (also known as Steele-Richardson-Olszewski disease). In these conditions there is additional pathology in multiple regions other than the substantia nigra. Both conditions respond relatively poorly to conventional therapy used in PD and shorten life expectancy. In MSA there can be severe autonomic disturbances. Whilst PSP commonly present with early postural instability, speech and swallowing difficulties, and dementia of variable severity.

Essential information for patients and family

The clinical management of PD is dependent on three main principles:

1. accurate diagnosis of the parkinsonian state.
2. symptomatic therapy when needed to reduce functional disability and handicap in the community
3. planning of treatment for each individual over the long-term.

Parkinson's disease is more common in the elderly but can affect younger people too. The progression of the disease is variable - there is as yet no proven therapy that significantly delays disease progression. Although life expectancy is shortened by the illness, most patients can live a good quality life with modern therapy. The principles of management is not just pharmacological. Remaining physically active with advice from a physiotherapist, occupational and speech therapist when needed can help to maintain independence.

Advice and support for patient and family

The majority of patients with PD do not have a family history of the illness. In those with a family history of PD there is an increased risk of PD occurring in other family members.

Although PD usually presents with a disorder of movement, non-motor symptoms may occur particularly as the disease progresses. These include neurobehavioural problems such as depression, personality change, sleep disorders (such as vivid dreams) and psychosis. It can be difficult to separate the effects of medication from that of the disease with for example neuropsychiatric effects. Such symptoms should be reported and discussed with their physician.

The management of PD involves a dialogue between patient and family and the doctor (with Nurse Practitioner) in order to establish individual need. The pharmacological management can be complicated using several different agents in order to achieve control of symptoms throughout the day with the minimum of side effects.

Medication

The vast majority of patients with PD respond to levodopa based therapy. The foundation of treatment for the patient with disabling motor symptoms is dopaminergic in the early stages of the disease. An inability to tolerate or lack of a significant relief of symptoms in response to levodopa based therapy should lead to the diagnosis being reassessed.

There are many different drugs available to treat symptoms of PD. Traditional drugs such as anticholinergics have little place in modern therapy due to potential side effects. Fluctuations in the motor response can occur in up to 50% of patients after 5 years of the illness - sparing the total daily dosage of levodopa therapy with the use of long acting dopamine agonists can reduce the frequency and duration of the fluctuations and associated dyskinesia (involuntary movements). Taking medication at regular intervals in the day can help to reduce the incidence of fluctuations.

Early recognition and effective treatment of non motor symptoms such as depression in PD can relieve distress to the patient and their family / carer. Sleep disorders are very common in PD. Nocturnal akinesia and rigidity may respond to a long acting levodopa therapy. Sleep attacks with sudden drowsiness may be related to the disease with the use of dopaminergic therapy. Patients should be told of the risk of such attacks. Should they occur adjustment of medication can be tried. The patient with sleep attacks should avoid situations of risk by for example stopping driving.

Parkinsonian psychosis can be very disabling and distressing. Management includes review of medication, looking for secondary causes of confusion such as infection, and if necessary the use of atypical neuroleptic medication (such as quetiapine). There is an increased risk of dementia in PD particularly in the elderly. This may necessitate alteration in drug therapy with a detrimental effect on the motor state in order to reduce confusion, hallucinations and nightmares. It is important to recognise the effects of the disease and in particular dementia on the health and welfare of other family members and carers.

Referral

Referral to a Neurologist, or health care of the elderly physician with an interest in movement disorders is essential for:

- correct diagnosis
- discussion of the disease and prognosis
- initiation of appropriate medication to meet the needs of the patient
- referral to therapists and social services if needed to maintain independence
- an understanding of the range of presentations as the disease progresses and intervention when necessary
- becoming a point of contact for support, education and advice.

Operative treatment

Deep brain stimulation has become a therapeutic alternative in some patients, especially those with fluctuating symptoms who do not respond well to levodopa.

References & resources

References 189 –194 (see [References \(Adult disorders\)](#)) are articles that give an overview of the evidence base for this subject.

Parkinson's disease at your fingertips. 2nd Edition. Oxtoby M, Williams A. London: Class Publishing, 1999.

Understanding Parkinson's disease. Pearce JMS. A Family Doctor Publication in association with the BMA, July 2000.

Parkinson's Disease Society 020 7931 8080, Fax: 020 7233 9908
Website: <http://www.parkinsons.org.uk>
215 Vauxhall Bridge Road, London SW1V 1EJ.