Parkinson's Disease (PD) is a progressive neurological condition. It affects about 1:1000 people overall but about 1:100 of the elderly and up to 1:10 in nursing home residents. The disease affects around 120,000 people in the UK.

PD is progressive, disabling and distressing.

The National Institute for Clinical Excellence (NICE) released guidelines for the treatment and management of PD in June 2006. These are soon to be reviewed. The Wirral PD Planning Group have developed these guidelines to assist you in managing patients with this complex disease.

**DIAGNOSIS STAGE: PARKINSON'S DISEASE GUIDELINES**

**PD Suspected**

**Features of PD are:**
- Slowness
- Stiffness
- Tremor (at rest, usually starts unilaterally)
- Loss of balance/Falls

**Check Prescription for Antidopaminergics**
e.g. Prochlorperazine (Stemetil), Metoclopramide, Haloperidol and other anti-psychotics

Refer Untreated to Specialist PD Clinic (NICE Guidelines 2006)
- New referrals should be seen within 6 weeks
  - <60 years Neurologist/Walton Centre
  - >60yrs Physician or Neurologist specialising in PD WUTH (Dr M O' Neill/Consultant Neurologist)

**Referral to Therapies:**
- Physiotherapy – Sharon Chapman / Sue Mansfield
- Speech and Language Therapy – Beth Bell
- Dietetics – Catherine Cliff
- Occupational Therapy
- Aids and Adaptations
- Access to ‘Advice & Education groups’ for newly diagnosed patients via Consultant or PDNS (Nuala Browning / Rachel Gregson)

Consider Referral to Parkinson’s Disease Nurse Specialist (PDNS) for regular access to additional support and advice:
- Telephone 0151 643 5330
- Fax 0151 643 5440

Monitor for disease progression and consider additional pharmacological and non-pharmacological interventions

**Referral to PDNS (new referrals should be seen within 2 weeks - NICE 2006)**

Consider referral for:
- Physio and OT
- Speech/Language therapy
- Dietician
- Social services
- Financial Support

Regular review and monitoring of patients

**USEFUL CONTACTS**

PDNS (Parkinson's Disease Nurse Specialist) Tel: 643 5330
Wirral PCT, 3 Port Causeway, Bromborough Fax: 643 5440
Parkinson’s Information and Support Worker (Welfare Advice) Tel: 08442253658
Parkinson’s Disease UK Helpline Tel: 0808 800 0303
Social Services (Central Advice and Duty Team) Tel 606 2006
Age UK Wirral Tel: 666 2220
Citizens Advice Bureau Tel: 0844 477 2121
Wired and Wirral Carers Tel: 670-0777

**WEBSITES:**
- NICE Guidelines - [www.nice.org.uk](http://www.nice.org.uk)
- Parkinson's Disease Society - [www.parkinsons.org.uk](http://www.parkinsons.org.uk)

**REFERENCES**

National Institute for Health & Clinical Excellence (NICE) Guideline 35: Parkinson’s Disease in Primary and Secondary Care June 2006

Parkinson’s Aware in Primary Care. A Guide for Primary Care Teams developed by: The Primary Care Taskforce for the PDS (UK) 1000

Drug therapy – for specialist initiation only

1st line Levodopa
- Co-beneldopa, co-careldopa
  - Relief of bradykinesia, rigidity, tremor and improvement of ADLS
  - Low acquisition cost
  - TDS administration
  - Slow titration to therapeutic dose to avoid adverse effects
  - Long term: can lead to motor fluctuations and dyskinesias
  - Dispersible form available
  - Co-beneldopa – quicker onset of action and easier to swallow.

1st line Dopamine agonists
- E.g. ropinirole, pramipexole
  - Long acting, some once daily preparations available if tablet burden problematic
  - Lower incidence of long term motor fluctuations and dyskinesias
  - Less effective for bradykinesia and improving ADLS
  - Adverse effects: hallucinations, low blood pressure, sudden onset of sleep, confusion in older patients and possible gambling / hypersexuality or punding
  - Rotigotine patch may be used for patients intolerant of or unable to take other dopamine agonists or those with prominent nocturnal / early morning symptoms. (Consultant only initiation)

1st line MAOBI. Selegiline/ragasgiline
- Once daily administration
- Possible disease modifying effect
- Adverse effects: confusion, postural hypotension (especially with selegiline)
- Mild efficacy
- Interactions with SSRIs / pethidine and nasal decongestants (pseudoephedrine)

Rasagiline may be used for patients intolerant of or unable to take other MAOBI’s or where compliance is a concern (Consultant only initiation)

1st line Anticholinergics.
- Trihexyphenidyl (benzhexol)
  - Used in young patients where tremor predominates
  - Benzhexol most potent
  - Adverse effects: dry mouth, urinary retention, constipation, blurred vision, impaired cognitive function
  - Rarely indicated in older patients due to risk of confusion, orphenadrine may occasionally be used

Inadequate symptom control/unable to tolerate dopamine agonist:
- Replace with/add in levodopa

Severe dyskinesias consider amantadine:
- Relieves moderate dyskinesias
- Rapid response
- Effects mild and unsustained
- Confusion with higher doses

Later disease with motor fluctuations

- Increase frequency of levodopa
- Add dopamine agonist to levodopa, may require dosage adjustment of levodopa
- Add entacapone (COMTI) to levodopa (can use combination product - stalevo). If intolerant of entacapone then consider tolcapone (consultant only)

Modest effect in most patients
Add MAOBI. Slightly reduced effect.
- Propranolol/metoprolol reduce postural and action tremor. Consider anticholinergic if appropriate (see above)
- Apomorphine. Persistent motor fluctuations unresponsive to above measures or where adverse effects from other dopamine treatments are unacceptable.
  - Use duodopa where severely handicapped by motor fluctuations, despite above

Apomorphine is used for a number of indications:
1. For patients with persistent motor fluctuations who are still responsive to dopaminergics, who have failed to respond sufficiently to maximum recommended doses or are intolerant of, or cannot take because of contraindications, other dopaminergic agents e.g. dopamine agonists, MAOBI and COMTI; AND who are prepared to consider an injectable preparation and have the necessary support to make that possible. This will follow an apomorphine trial to establish responsiveness and minimum effective dose (in most cases).
2. For patients who are unable to take oral medications - usually temporarily e.g. for surgery or in ITU etc but who are dopaminergic responsive.
3. For patients with neuroleptic malignant syndrome.

Severe dyskinesias consider amantadine:
- Relieves moderate dyskinesias
- Rapid response
- Effects mild and unsustained
- Confusion with higher doses
# Prescribing Information for Non-Motor Features of Parkinson’s Disease

This guidance provides information on the drug choices that will minimise interactions and adverse effects in patients already receiving treatment for Parkinson’s Disease (PD). Treatment for complex PD-related problems should be initiated in secondary care.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Recommendation</th>
<th>Cautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression. The clinical features may overlap with motor features of PD</td>
<td>Best choice: SSRIs, particularly sertraline (NB increased risk of serotonin syndrome with all antidepressants and selegiline &amp; rasagiline)</td>
<td>Avoid: Tricyclics – poorly tolerated as they can worsen cognitive problems, constipation and autonomic dysfunction</td>
</tr>
<tr>
<td>Psychosis and hallucinations. Do not treat Mild psychotic symptoms if patient and carer can tolerate them</td>
<td>Reduce medication first where possible starting with anticholinergics then TCADs, MAOBIs, Amantadine, Dopamine agonists, COMTIs, Apomorphine and finally L-Dopa. Best choice: Quetiapine (start at 25mg – usual dose 75mg) If dementia present then start at a lower dose. Where hallucinations present with dementia then consider starting acetylcholinesterase inhibitor rivastigmine (Consultant in Movement Disorders use only. on going prescriptions to be provided from hospital)</td>
<td>Avoid: Haloperidol and all other antipsychotics (quetiapine &amp; Clozapine are the safest from the PD point of view). If clozapine is needed, a Psychiatry referral is necessary.</td>
</tr>
<tr>
<td>Anxiety and panic attacks</td>
<td>Best choice: Psychological management. Short term tranquillisers (lorazepam) only if essential.</td>
<td>Avoid antipsychotics. Benzodiazepines may antagonise levodopa</td>
</tr>
<tr>
<td>Moderate dementia and Lewy body dementia</td>
<td>Best choice: Rivastigmine (Specialist initiation only). May improve cognition, hallucinations &amp; delusions but tremor may deteriorate.</td>
<td>Avoid in patients with heart block and epilepsy. Caution with asthma, and COPD and in patients with gastric or duodenal ulcers. Nausea and vomiting can be a problem</td>
</tr>
<tr>
<td>Sleep disturbance</td>
<td>Take a full sleep history – there are many causes of poor sleep in PD. Provide sleep hygiene and relaxation advice. Zopiclone or lorazepam can be used short-term if the problem is not due to a movement disorder. In REM Sleep Disorder clonazepam can be used 500mcg to 2mg nocte.</td>
<td>Refer back to specialist service if PD medication may need adjusting</td>
</tr>
<tr>
<td>Daytime hypersomnolence</td>
<td>This is common particularly with dopamine agonists. Modafinil may be considered – this is an unlicensed indication</td>
<td>Avoid in moderate to severe uncontrolled hypertension and ischaemic heart disease</td>
</tr>
<tr>
<td>Nocturnal akinesia</td>
<td>Refer back to specialist service as medication may need adjusting or modified release preparations or dopamine agonists may be appropriate</td>
<td></td>
</tr>
<tr>
<td>Nausea and vomiting. Side effect of PD medication (however tolerance can develop)</td>
<td>Best choice: Domperidone or Cyclizine Rarely, use of ondansetron is justified</td>
<td>Avoid: Metoclopramide, prochlorperazine and other phenothiazines (dopamine antagonists) Caution with high dose domperidone in elderly patients as risk of prolonged QT interval.</td>
</tr>
<tr>
<td>Constipation</td>
<td>Best choice: more fibre in diet, increase mobility and fluid intake. Then a mild laxative such as lactulose.</td>
<td>Avoid strong laxatives that may cause faecal incontinence but can use senna, macrogol, suppositories and enemas if needed.</td>
</tr>
</tbody>
</table>
## Parkinson's Disease Clinical Guideline

<table>
<thead>
<tr>
<th>Problem</th>
<th>Recommendation</th>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gastro-oesophageal reflux</td>
<td>Best choice: H2 blockers and PPIs</td>
<td>Dopamine agonists do not help with dysphagia. NG or PEG feeding may be required.</td>
</tr>
<tr>
<td>Dysphagia</td>
<td>May require investigation: refer to Speech and Language. If severe weight loss, refer to dietetics service. Levodopa helps with dysphagia so co-beneldopa dispersible could be helpful.</td>
<td>Be particularly aware of detection of postural hypotension and consider treatment for osteoporosis</td>
</tr>
<tr>
<td>Falls (Very common)</td>
<td>Conduct a full falls assessment (NICE CG21). Consider prescribing alendronic acid with calcium and vitamin D to reduce fracture risk</td>
<td>Hyoscine and atropine can exacerbate urinary retention. Causes confusion, drowsiness and dizziness.</td>
</tr>
<tr>
<td>Sialorrhoea</td>
<td>Hyoscine patches can be used but only if patient is not confused. The PD society suggests sucking clove sticks. Sucking other things can help. Atropine 1% eye drops twice daily in the mouth can be used (unlicensed indication)</td>
<td></td>
</tr>
<tr>
<td>Urinary dysfunction</td>
<td>Refer patients with refractory or persistent bladder problems to a urologist as a comprehensive assessment is needed. Solifenacin is least likely to cause anticholinergic effects</td>
<td>Anticholinergics should only be used with caution as they cross the blood-brain barrier</td>
</tr>
<tr>
<td>Erectile dysfunction</td>
<td>Phosphodiesterase inhibitors plus lots of support and advice. This is free for patients on NHS scripts.</td>
<td></td>
</tr>
<tr>
<td>Orthostatic hypotension. Side effect of levodopa</td>
<td>Increase fluids and sodium intake. Refer back to specialist service. Prescribe fludrocortisone (salt retaining steroid). Can use support tights. Midodrine is an unlicensed medication option where fludrocortisone is not unsuccessful.</td>
<td>Reduce or eliminate antihypertensive medication.</td>
</tr>
<tr>
<td>Sweating and flushing attacks</td>
<td>May respond to propranolol, starting with 10mg tds and increasing as necessary and if tolerated</td>
<td>Not to be given to patients with contraindications to betablockers</td>
</tr>
</tbody>
</table>

### Drugs that interact with Parkinson's medication
- Iron and pyridoxine interact with Madopar. Give at different times of day. Benzodiazepines may antagonise the effects of levodopa.

### When to refer back to the specialist service
- Poorly controlled disease. Specific PD related problems
- Adverse effects such as dysphagia, weight loss, severe hallucinations
- NB: When initiating changes in PD medication, the specialist service will prescribe the first two months supply

### Other points of contact for medication advice
- PD specialist nurses 0151 643 5330
- Medicines Management Team 0151 643 5319

### Guidelines written by:
- Helen Dingle, Clinical Effectiveness Pharmacist, Wirral PCT
- Paula Morgan, Formerly PD Pharmacist, WUTH NHS Trust
- Alison Monaghan, Formerly PD Specialist Nurse
- Reviewed by: Dr M O Neill Consultant in Elderly Medicine, WUTH 2012
- Nuala Browning, PD Nurse Specilaist, Wirral PCT
- Geraldine McKerrell, DME Pharmacist WUTH 2012
- Helen Dingle, Prescribing Adviser, NHS Wirral

---

*Parkinson's Disease – Clinical Guideline v7*  
*Approved by Medicines Clinical Guidelines Subcommittee: Jan 2013*  
*Review Date: Jan 2016*