WORKING IN PARTNERSHIP WITH

Surrey (East Surrey CCG, Guildford & Waverley CCG, North West Surrey CCG, Surrey Downs CCG & Surrey Heath) North East Hampshire & Farnham CCG, Crawley CCG, Horsham & Mid-Sussex CCG

SHARED CARE PRESCRIBING GUIDELINE

Apomorphine hydrochloride for the Treatment of motor fluctuations (‘on-off’ phenomena) in patients with Parkinson's disease which are not sufficiently controlled by oral anti-Parkinson medication

Prescribing Clinical Network classification: Amber

N.B. The eligibility criteria included here apply to new patients commencing treatment under this guideline & not to existing patients whose treatment was initiated under the previous version. However, monitoring and discontinuation criteria apply to all patients.

NOTES to the GP

Amber drugs: Prescribing to be initiated by a hospital specialist (or if appropriate by a GP with specialist interest) but with the potential to transfer to primary care. The expectation is that these guidelines should provide sufficient information to enable GPs to be confident to take clinical and legal responsibility for prescribing these drugs.

The questions below will help you confirm this:
- Is the patient's condition predictable?
- Do you have the relevant knowledge, skills and access to equipment to allow you to monitor treatment as indicated in this shared care prescribing guideline?
- Have you been provided with relevant clinical details including monitoring data?

If you can answer YES to all these questions (after reading this shared care guideline), then it is appropriate for you to accept prescribing responsibility. Sign and return a copy of page 4 to the requesting consultant at the Acute Trust. Until the requesting consultant at the Acute Trust has received a signed copy of page 4 indicating that shared care has been agreed all care (including prescribing) remains with the consultant at the Acute Trust.

If the answer is NO to any of these questions, you should not accept prescribing responsibility. You should write to the consultant outlining your reasons for NOT prescribing. If you do not have the confidence to prescribe, we suggest you discuss this with your local Trust/specialist service, who will be willing to provide training and support. If you still lack the confidence to accept clinical responsibility, you still have the right to decline. Your PCT pharmacist will assist you in making decisions about shared care.

Prescribing unlicensed medicines or medicines outside the recommendations of their marketing authorisation alters (and probably increases) the prescriber’s professional responsibility and potential liability. The prescriber should be able to justify and feel competent in using such medicines.

The patient’s best interests are always paramount

The GP has the right to refuse to agree to shared care, in such an event the total clinical responsibility will remain with the consultant

Reason for Update: New
Valid from: 
Version: 0.1
Prepared by: 
Review date: 
Supersedes version: 
Approved by: 
Approved by: 
Information
This information sheet does not replace the SPC, which should be read in conjunction with this
guidance. Prescribers should also refer to the appropriate paragraph in the current edition of
the BNF.

INTRODUCTION / BACKGROUND INFORMATION
Parkinson’s disease (PD) is a common neurodegenerative disorder with a prevalence of about
120/100,000; typical age of onset is between 50-65 years. Motor symptoms (bradykinesia, rigidity and
tremor) dominate the clinical picture. The aetiology of PD is unknown but motor symptoms are
believed to be caused by a dopamine deficit in the striatum due to progressive loss of dopaminergic
neurons that project to the striatum from the substantia nigra.

Drug therapy with levodopa (a precursor to dopamine) and oral dopamine agonists usually provide
good symptomatic relief without significant side effects in early disease. However, after some years of
treatment many patients develop motor complications which include fluctuations in motor control and
dyskinesias. As the disease progresses, the motor fluctuations often cause increasing disability.

Disabling motor fluctuations include unpleasant “off” periods. “Off” periods can be associated with
dystonia, depression, pain, sleep dysfunction, bladder dysfunction and swallowing difficulties. With
disease progression ‘off’ periods can occur suddenly rendering someone immobile in a matter of
minutes. Apomorphine is a dopamine agonist, which acts directly on D1 and D2 receptors, stimulating
areas of the brain where dopamine works. It produces a similar effect to levodopa, that is, the ability to
prevent and reverse disabling “off” periods. However optimizing treatment can be difficult and complex
for many patients.

Apomorphine is available generically as a 2mL or 5mL ampoule but the majority of prescribing is for
prefilled syringes marketed as APO-go®.

Link to the relevant SPC website:
APO-go®: [http://www.medicines.org.uk/emc/medicine/12941]
APO-go® Pre-Filled Syringe: [http://www.medicines.org.uk/emc/medicine/15992]

Dose
Apomorphine is available as either an intermittent subcutaneous injection, via a prefilled pen, or by
continuous subcutaneous infusion, during waking hours (or in some individuals over 24 hours), using
the Crono APO-go ambulatory infusion pump.

The dosage is determined on an individual patient basis and can range from a few milligrams daily by
intermittent subcutaneous injections, up to 100mg daily by continuous infusion. Individual bolus
injections should not exceed 10mg. The total daily dose should not exceed 100mg.

Apomorphine has an onset of action of between 5-15 minutes, lasting usually for about one hour.
The optimal dosage of apomorphine varies between individuals but, once established, remains
relatively constant for each patient. In rare cases it may be necessary to give higher doses. For
patients being treated with a continuous infusion of apomorphine, the dose is titrated over a period of
several weeks (and sometimes months) as the oral anti-parkinsonian drugs are reduced.

Cautions
Apomorphine should be given with caution: to patients with renal, pulmonary or cardiovascular
disease, prone to nausea and vomiting, or with pre-existing postural hypotension; in pregnant women
and women of child-bearing age. Female patients should not breast feed.

Contraindications
Apomorphine is contra-indicated in: patients with respiratory depression, dementia, psychotic diseases
or hepatic insufficiency; children and adolescents under 18.
Apomorphine should not be administered to patients who have a hypersensitivity to apomorphine or
any excipients of the medicinal product.
Apomorphine treatment is not suitable for patients who have an ‘on’ response to levodopa, which is
marred by severe dyskinesia or dystonia.
Side effects
Nausea, vomiting, drowsiness (including sudden onset of sleep), confusion, hallucinations, injection-site reactions (including nodule formation and ulceration) – change injection sites in rotation; less commonly postural hypotension, breathing difficulties, dyskinesias during ‘on’ periods (may require discontinuation), haemolytic anaemia with levodopa (haematology monitoring required), and rash; rarely peripheral oedema, eosinophilia, pathological gambling, increased libido, and hypersexuality also reported.

Positive Coombs’ tests have been reported for patients receiving apomorphine and levodopa,

Interactions
Patients should be monitored for potential interactions during initial stages of apomorphine therapy. Particular caution should be given in patients with pre-existing cardiac disease or in patients taking vasoactive medicinal products such as antihypertensives, and especially in patients with pre-existing postural hypotension.
• Effects of apomorphine antagonized by antipsychotics
• Effects of apomorphine possibly enhanced by entacapone
• Effects of dopaminergics possibly enhanced by memantine
• Antiparkinsonian effect of dopaminergics antagonized by methylidopa

NB: Domperidone
This is started 3 days prior to the ‘Response Test’ at a dose of 20mg tds. The MHRA issued a safety warning in 2012 highlighting that it may be associated with a small increased risk of serious ventricular arrhythmia or sudden cardiac death. These risks may be higher in patients older than 60 years and in patients who receive daily oral doses of more than 30mg. It should be used at the lowest effective dose.

Additional information
Apomorphine pre-filled syringes (APO-go® PFS) and apomorphine intermittent injection pens (APO-go® pens) can be prescribed on FP10.
Community pharmacists should obtain supplies direct from Genus Pharmaceuticals: 0844 880 1326

Novofine needles are supplied free of charge and should be ordered at the same time as the pens.

Neria infusion lines can be prescribed on FP10. Graseby lines are only available from homecare.

A Crono APO-go® Infusion pump is loaned to the hospital for each patient, free of charge, by Genus Pharmaceuticals. Dedicated syringes and connectors are supplied free of charge for use with the infusion pump and APO-go® PFS.

An APO-go Helpline is available for patients and healthcare professionals 24/7, 365 days a year: 0844 8801327. Replacement pumps can be dispatched for delivery within hours in the event of an emergency.

Training on the use of the APO-go pump can be provided to community nurses and other healthcare professionals by Genus Pharmaceuticals. Please call Genus Customer Services on 0844 8801327 to arrange contact with your local Hospital Business Manager.

APO-go® information is available for both patients and healthcare professionals:
http://www.apo-go.co.uk

A Nurse Advisor in APO-go® Therapy (NAA) is available to provide additional support to patients/carers and HCPs. The Nurse Advisor can work across primary and secondary care in all aspects of APO-go® therapy, under the direction of the Hospital’s lead Consultant and PD Nurse Specialist (where applicable) providing:
• Education and Counselling
• Clinical Support and development
• Patient support Initiation of APO-go therapy
• Documentation Therapy monitoring
• Adherence to and sharing of principles of best practice
• Work within and support local and national policies and guidelines
• Liaise with Hospital personnel to promote an integrated team approach to care
### Criteria for Use

**RESPONSIBILITIES and ROLES**

<table>
<thead>
<tr>
<th>Specialist responsibilities</th>
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</thead>
<tbody>
<tr>
<td>2. Discuss the aims, benefits and side effects of treatment with the patient/spouse/carer as well as their role.</td>
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<tr>
<td>3. Explain to the patient their treatment plan including the dosing schedule.</td>
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<tr>
<td>4. <strong>Apopomorphine response test:</strong> Start domperidone 20 mg** three times daily three days prior to apomorphine response test and arrange apomorphine response test. **For patients over the age of 60 years, and/or those with a history of cardiac problems, a lower dose of 10mg three times a day may need to be considered on an individual basis. Domperidone should be avoided in patients who are taking concomitant medication known to cause QT prolongation (such as ketoconazole and erythromycin). Once apomorphine treatment is established, the domperidone dose can be gradually reduced and then discontinued.</td>
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<tr>
<td>5. Ensure BP monitoring (e.g. standing and sitting) during initiation</td>
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<tr>
<td>6. Initiate therapy (either intermittent apomorphine injection or continuous infusion and optimise anti-parkinsonian drug therapy. Ensure prescribing for a minimum of 3 months, titrating dose accordingly over this initial treatment period.</td>
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<tr>
<td>7. Monitor and evaluate response to Apomorphine hydrochloride therapy, including adverse drug reactions, with the patient and continue/discontinue treatment in line with agreed treatment plan.</td>
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<td>8. Discuss the possibility of shared care with the patient and ensure they understand the plan for their subsequent treatment</td>
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<tr>
<td>9. Supply GP with summary of patient review (including anticipated length of treatment) and a copy of the shared care guidelines recommending that a shared care arrangement is initiated.</td>
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<tr>
<td>10. Ensure prompt communication with GP of any changes in treatment or dose requirements, results of monitoring undertaken and assessment of adverse events.</td>
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<tr>
<td>11. Provide telephone contact for patients, carers and health professionals, providing the GP with relevant contact information with clear arrangements for back-up advice and support should further assistance be required relating to this drug.</td>
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<tr>
<td>12. Clarify the roles of the PD CNS and / or the APO-go® Nurse Advisor.</td>
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<td>13. Advise GP when treatment is considered to be no longer efficacious or if side-effects outweigh benefit and treatment is to be discontinued.</td>
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<td>15. Specify review dates at clinically relevant time intervals for both the GP and the consultant.</td>
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<thead>
<tr>
<th>General Practitioner responsibilities</th>
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<tbody>
<tr>
<td>1. Reply to the request for shared care.</td>
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<tr>
<td>2. Subsequent prescribing of apomorphine at the dose recommended, when patient is stabilised</td>
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<tr>
<td>3. Inform the specialist team of any significant developments, or deterioration, such as the occurrence of side effects or an inability to administer apomorphine</td>
</tr>
<tr>
<td>4. Arrange and monitor blood test results. 4-6 month intervals FBC, LFT’s, U&amp;E’s, Coombs’</td>
</tr>
<tr>
<td>5. Consult promptly with the specialist or PDNS if the patient deteriorates, has problems administering apomorphine or when test results are abnormal, or patient defaults from blood test appointments; adjust the dose or stop or change treatment as advised by the specialist.</td>
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<tr>
<td>6. BP monitoring at 4-6 monthly intervals.</td>
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<tr>
<td>7. Facilitate the co-ordination of on-going patient care within the community and home environment, liaising with the Specialist Team when necessary.</td>
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<tr>
<td>8. Be aware of the MHRA advice regarding the use of domperidone in patients over 60 years or with underlying cardiac disease. See Specialist responsibilities. Most patients will have been able to discontinue domperidone prior to the shared care transfer to the General Practitioner.</td>
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<table>
<thead>
<tr>
<th>Patient’s / Carer’s role</th>
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<tbody>
<tr>
<td>1. Ask the specialist or GP for information, if he or she does not have a clear understanding of the treatment.</td>
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<tr>
<td>2. Share any concerns in relation to treatment with Specialist Team</td>
</tr>
<tr>
<td>3. Tell the specialist or GP of any other medication being taken, including over-the-counter products.</td>
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<tr>
<td>4. Read the patient information leaflet included with your medication and report any side effects or concerns you have to the specialist or GP</td>
</tr>
</tbody>
</table>
## BACK-UP ADVICE AND SUPPORT

<table>
<thead>
<tr>
<th>Contact details</th>
<th>Specialist</th>
<th>Telephone No.</th>
<th>Email address:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialist:</td>
<td>Dr Jeff Kimber</td>
<td>01737-768511</td>
<td><a href="mailto:Jeffery.Kimber@sash.nhs.uk">Jeffery.Kimber@sash.nhs.uk</a></td>
</tr>
<tr>
<td>Hospital Pharmacy:</td>
<td>Medicines Information</td>
<td>01737-768511 ext 6246</td>
<td><a href="mailto:MedicinesInformationPharmacists@sash.nhs.uk">MedicinesInformationPharmacists@sash.nhs.uk</a></td>
</tr>
<tr>
<td>Out of hours contact:</td>
<td>On-Call switchboard</td>
<td>01737-768511</td>
<td></td>
</tr>
</tbody>
</table>

**AUDIT / SURVEY** (to be carried out by specialist clinic)

Some information within this document has been adapted from Royal Cornwall Hospitals Trust Shared Care Guidelines for Treatment of Parkinson’s Disease with Apomorphine (Nov 2012), Bedfordshire Protocol for Apomorphine Shared Care in Parkinson’s Disease (2009).
**SHARED CARE PRESCRIBING GUIDELINE**

Apomorphine hydrochloride (APO-go®) for the Treatment of motor fluctuations (‘on-off’ phenomena) in patients with Parkinson’s disease which are not sufficiently controlled by oral anti-Parkinson medication

**Agreement for transfer of prescribing to GP**

**Patient details / addressograph:**

| Name…………………………………….. |
| Address……………………………………. |
| ……………………………………….. |
| DOB…………………………………….. |
| Hospital No…………………………………….. |

**Drug name and dose:**

The following tests, investigations have been carried out:

**List any relevant tests:**

**Date initiated:**……………………………………..  

At the last patient review the drug appeared to be effectively controlling symptoms/ providing benefit:  Yes / No

The patient has now been stabilised on a dose of: ………………………………………..  

I will arrange to review this patient regularly. Date of next clinic appointment:……………………………

<table>
<thead>
<tr>
<th>Consultant:</th>
<th>Agreement to shared care, to be signed by GP and Consultant.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td>Consultant Signature:……………………………………..</td>
</tr>
<tr>
<td>Contact Number</td>
<td>..........................................................</td>
</tr>
<tr>
<td>GP:</td>
<td>Date:..................................................................</td>
</tr>
<tr>
<td>Address:</td>
<td>GP Signature:..................................................................</td>
</tr>
<tr>
<td>Contact Number</td>
<td>..........................................................</td>
</tr>
<tr>
<td>Main Carer:</td>
<td>If shared care is agreed and GP has signed above please return a copy of this page to the requesting consultant or alternatively fax to:</td>
</tr>
<tr>
<td>Contact Number</td>
<td>Acute Trust please insert appropriate</td>
</tr>
</tbody>
</table>

Acute Trust please insert appropriate
Key worker if appropriate:
Contact Number:
PD CNS:

Fax Number: