DERBYSHIRE JOINT AREA PRESCRIBING COMMITTEE  
(JAPC)  
SHARED CARE AGREEMENT

Apomorphine in the treatment of Parkinson’s disease

1. REFERRAL CRITERIA
   • Shared Care is only appropriate if it provides the optimum solution for the patient.
   • Prescribing responsibility will only be transferred when it is agreed by the consultant and the patient’s GP that the patient’s condition is stable or predictable.
   • Safe prescribing must be accompanied by effective monitoring
   • Patients will only be referred to the GP once the GP has agreed in each individual case, subject to receiving the relevant clinical information.
   • Once stable the patient will be given a supply of Apomorphine sufficient for 4 weeks maintenance therapy.

2. AREAS OF RESPONSIBILITY

<table>
<thead>
<tr>
<th>GP responsibilities</th>
<th>Specialist responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reply to the request for shared care as soon as practicable.</td>
<td>1. Discuss the possible benefits and side effects of treatment with the patient.</td>
</tr>
<tr>
<td>2. Prescribe apomorphine at the dose recommended by the specialist</td>
<td>2. Perform initial full blood count (FBC). FBC should also be performed at 6-12 monthly intervals and results should be appropriately actioned. Coombs Test is to be undertaken if patient is found to be anaemic. Perform an ECG prior to using domperidone – see MHRA drug safety update (May 2014)</td>
</tr>
<tr>
<td>3. Report to and seek advice from the specialist on any aspect of patient care that is of concern to the GP and may affect treatment. Particularly any significant development or deterioration in the following areas: motor performance, hallucinations, confusional states, psychosis, depression or an inability to administer apomorphine</td>
<td>3. The total daily dose should not exceed 100mg (doses in excess of 100mg should be discussed with the GP prior to handover)</td>
</tr>
<tr>
<td>4. The GP may adjust the dose of domperidone, if necessary, but should not adjust the dose of apomorphine unless under the instruction of the specialist team</td>
<td>4. Provide training/instruction to the patient or carer regarding method and frequency of administration, preparation, dosage of apomorphine</td>
</tr>
<tr>
<td>5. GP to be aware of drugs which prolong QT interval (concomitant domperidone and apomorphine). As per MHRA drug safety update, April 2016 advice.</td>
<td>5. Prescribe the apomorphine until the patient is stable</td>
</tr>
<tr>
<td>6. The specialist should be informed if any patient is found to be anaemic through opportunistic testing</td>
<td>6. Review the patient's condition and monitor response to treatment regularly.</td>
</tr>
<tr>
<td>7. Report any adverse effects to the referring specialist and the MHRA yellow card scheme</td>
<td>7. Provide clear written information to the GP about the recommended dose, strength and form of apomorphine to be used. As there are different strengths of apomorphine available it is important to refer to mg/hr when communicating information about dosing</td>
</tr>
<tr>
<td>8. Stop treatment on advice of specialist</td>
<td>8. Before starting treatment, carefully consider whether the benefits of concomitant apomorphine and domperidone treatment outweigh the small increased risk of cardiac side effects. (MHRA drug safety update, April 2016)</td>
</tr>
<tr>
<td></td>
<td>9. Check the QT-interval before staring domperidone, during the apomorphine initiation phase and if clinically indicated thereafter (e.g. if a QT - prolonging or interacting drug is started or if symptoms of cardiac side effects are reported)</td>
</tr>
<tr>
<td></td>
<td>10. Provide clear written information to the GP about the recommended dose and length of treatment for domperidone.</td>
</tr>
<tr>
<td></td>
<td>11. Ensure that clear backup arrangements exist for GPs to obtain advice and support</td>
</tr>
<tr>
<td></td>
<td>12. Report adverse events to MHRA yellow card scheme and GP.</td>
</tr>
</tbody>
</table>
Patient responsibilities
- Report any adverse effects to the specialist or GP whilst taking apomorphine
- Share any concerns in relation to treatment with apomorphine
- Report to the specialist or GP if they do not have a clear understanding of their treatment
- Report any changes that could increase the risk of arrhythmia to the specialist or GP, such as:
  - Symptoms of cardiac or hepatic disorders
  - Conditions that could cause electrolyte disturbances (e.g. gastroenteritis or starting a diuretic)
  - Starting any other medicines

3. COMMUNICATION AND SUPPORT

<table>
<thead>
<tr>
<th>i. Hospital contacts: Chesterfield Royal Hospital NHS FT</th>
<th>ii. Out hours contacts and procedures:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr R Genever – 01246 277271</td>
<td>On call Pharmacist 01332 340131</td>
</tr>
<tr>
<td>Christine Smith, PD Nurse Specialist</td>
<td>Bleep 1395</td>
</tr>
<tr>
<td>01246 277271</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Derby Hospitals NHS FT</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr L Sugathapala – 01332 785328</td>
<td></td>
</tr>
<tr>
<td>Dr R Skelly – 01332 785447</td>
<td></td>
</tr>
<tr>
<td>L Brown, Specialist Nurse</td>
<td></td>
</tr>
<tr>
<td>01332 783535/6</td>
<td></td>
</tr>
</tbody>
</table>

4. CLINICAL INFORMATION

<table>
<thead>
<tr>
<th>i. Prescribed indications</th>
<th>The treatment of disabling motor fluctuations in patients with PD which persist despite individually titrated treatment with L- dopa and/or dopamine agonists</th>
</tr>
</thead>
<tbody>
<tr>
<td>ii. Therapeutic summary</td>
<td>Apomorphine is a directly acting dopaminergic agonist, licensed for use in patients with Parkinson’s Disease who have frequent and/or severe akinesia (“off periods”) not controlled by levodopa or other dopamine agonists. Research has shown that apomorphine reduces the daily “off” period time by up to 50% in patients with late-stage Parkinson’s disease associated with refractory on-off oscillations. Treatment is by intermittent sub-cutaneous injection at the onset of an “off” period; or by continuous sub-cutaneous infusion usually over 12 hours. Following a single dose, apomorphine has an onset of action of 5-15 minutes and lasts for 45-90 minutes. Candidates for apomorphine therapy are those capable of recognising and anticipating “off” episodes. They must also be capable and motivated in order to use the treatment properly. Although apomorphine is not commonly used, it is a relatively safe drug.</td>
</tr>
<tr>
<td>iii. Dose &amp; Route of administration</td>
<td>Dose and means of administration These will be determined and adjusted by the specialist team. The total daily dose should not exceed 100mg (doses in excess of 100mg should be discussed with the GP prior to handover) Use by subcutaneous infusion This is a common method of administration and is delivered via a subcutaneous needle attached to a syringe driver. The patient and their carers will be instructed in the use of this system and patient held information will be provided for their own use and to support Primary Care personnel who may be involved in problems with the infusion system. Apomorphine is available as: Pre –filled syringes of apomorphine 5mg/ml, each 10ml pre-filled syringe contains 50mg apomorphine hydrochloride (APO-go PFS)</td>
</tr>
</tbody>
</table>
- ampoules containing 10mg/1ml, 50mg/5ml (APO-go)
- disposable multiple dose pen injector system containing 30mg/3ml (APO-go Pen)

As there are different strengths available it is important to refer to mg/hr when communicating information about dosing

Pre-treatment and associated co-treatment with domperidone is essential (see section v).

### iv. Duration of treatment

Indefinite

### v. Adverse effects

Apomorphine is usually highly emetogenic, so all patients are treated with domperidone 10mg TDS starting at least 3 days prior to initiation of therapy. Domperidone will be gradually withdrawn. Domperidone should be avoided in patients who are taking concomitant medication known to cause QT prolongation, an ECG should be performed prior to using domperidone and the decision to use made by the specialist. It is sometimes possible to withdraw this after a couple of months. The domperidone may also prevent/reduce postural hypotension. See [MHRA drug safety update (May 2014)](https://www.gov.uk/government/publications/mhra-drug-safety-update-april-2014)

Apomorphine may provoke:
- nausea and vomiting
- postural hypotension – usually only transient on initiation of treatment
- Neuro-psychiatric disturbances, e.g. hallucinations, delusions and confusional states.
- Inflammation and formation of nodules at injection sites.
- dyskinesias (abnormal involuntary movements)
- eosinophilia in up to 10% of patients
- Coomb’s reaction in 6% of patients
- haemolytic anaemia and thrombocytopenia

### vi. Monitoring Requirements

Specialist:
For benefits and ADRs.
Haematology tests:
FBC to be undertaken at 6 – 12 monthly intervals by the consultant.
Coombs test to be undertaken if patient is found to be anaemic

### vii. Clinically relevant drug interactions

Neuroleptic medicinal products may have an antagonistic effect if used with apomorphine these include:
- haloperidol
- chlorpromazine
- promazine
- trifluoperazine

### viii. Contraindications

- Respiratory depression
- Hypersensitivity to opioids
- Not suitable if ‘on’ response to levodopa marred by severe dyskinesia, hypotonia or psychiatric effects
- Hepatic impairment
| ix. Supply of ancillary equipment eg. syringe drivers, tubing | (a) **APO-go Pens**  
These are prescribable on FP 10. The patient will usually have been given one by the hospital. Please prescribe in multiples of 5. This is a disposable multiple dose pen injector system incorporating a clear glass cartridge. The company provides needles FOC with the pack of pens, and thereafter, as and when required by the patient. Needles supplied are 8mm (30G)  
(b) **APO-go ampoules and Pre-filled syringes**  
These are for use with a syringe driver for continuous sub-cutaneous infusion. It is usually diluted with sodium chloride 0.9% injection which will need to be prescribed on the FP 10. Syringe drivers are supplied by Britannia. Subcutaneous infusion lines (Neria lines-1 per day) should be prescribed on FP10. Individual clinician decides lines appropriate to the patient need. |
| --- | --- |
| x. Supply, storage and reconstitution instructions | Apomorphine is prescribable on FP10 but is not available from local wholesalers, only direct from the manufacturers:  
Britannia Pharmaceuticals Limited,  
200 Longwater Avenue,  
Green Park,  
Reading. RG2 6GP  
Tel: 0118-920-9500  
Fax: 0118-920-9594  
The community pharmacist will therefore require a few days notice to obtain apomorphine. If ordered before noon, delivery is next working day.  
**Ampoules**  
The manufacturers recommend that since APO-go ampoules do not contain a preservative, once an ampoule is opened any unused portion should be discarded after 24 hours. Filled syringes can be stored in the fridge for 24 hours. The ampoule should be used in the most economic way possible.  
**Pen system**  
APO-go pens should be stored in a cool dry place (below 25C) but not in the refrigerator. Each pen should be discarded 48 hours after first use. Do not use the solution if it has turned green.  
| xi. Original documents prepared by | Peter Burrill, Specialist in Pharmaceutical Public Health North Derbyshire Public Health Network  
Dr Pippa Medcalf, Consultant Physician, Chesterfield & North Derbyshire Royal Hospital |
| Review by | Derbyshire Medicines Management Guidelines & Shared Care Group  
Dr R Skelly, Consultant Physician, Derby Hospitals NHS Foundation Trust  
Dr R Genever, Parkinson’s Disease Consultant, Chesterfield Royal Hospital  
Lisa Brown, Parkinson’s Disease Nurse Specialist, Derby Hospitals NHS Foundation Trust |

This does not replace the SPC, which should be read in conjunction with it.  
**Date Approved:** September 2014  
**Updated:** September 2016  
**Review date:** August 2018  
(Updated April 2016 post MHRA drug safety warning)
DERBYSHIRE JAPC SHARED CARE AGREEMENT LETTER

Dear «GP_TITLE» «GP_SURNAME»

«FORENAME_1» «SURNAME» «DATE_OF_BIRTH»
«CURRENT_ADDRESS_1» «CURRENT_ADDRESS_2» «CURRENT_ADDRESS_3»
«CURRENT_ADDRESS_4» «CURRENT_POSTCODE»

Your patient was seen on {Insert date} with a diagnosis of {Insert diagnosis}. I have initiated the following medication {Insert drug name} and am writing to ask you to participate in the shared care for this patient.

This medication has been accepted as suitable for shared care by the Derbyshire Joint Area Prescribing Committee (JAPC). I agree to the secondary care responsibilities set out in the shared care agreement for this medication (available from www.derbyshiremedicinesmanagement.nhs.uk/clinical_guidelines/shared_care_guidelines). I am therefore requesting your agreement to share the care of this patient. Where preliminary tests are set out in the agreement I have carried these out and results are below.

<table>
<thead>
<tr>
<th>Dose Regimen</th>
<th>Date {Insert medicine name} started</th>
<th>Date for GP to start prescribing {Insert medicine name} from</th>
</tr>
</thead>
</table>

The baseline test results are (if applicable):
See overleaf for initiation criteria.

I confirm I have explained to the patient: the risks and benefits of treatment, the baseline tests conducted the need for monitoring, how monitoring will be arranged, and the roles of the consultant / nurse specialist, GP and the patient in shared care. I confirm the patient has understood and is satisfied with this shared care arrangement at this time.

If you do NOT wish to participate in shared care for this patient, usually under clinical grounds, please complete the attached form.

Yours sincerely

{Consultant name}
GP RESPONSE TO SHARED CARE (only complete & send if NOT participating in shared care)

Shared care is produced by GPs and specialists knowledgeable in the field of that drug usage. The shared care has been approved by the JAPC. This allows a more convenient service to the patient and cost effective use of NHS resources.

<table>
<thead>
<tr>
<th>Patient:</th>
<th>NHS No:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultant:</td>
<td>Medicine requested for shared care:</td>
</tr>
</tbody>
</table>

I will NOT be undertaking the GP responsibilities as described in the agreed shared care guideline. My clinical reasons for declining shared care for this patient are listed in the box below:

Yours sincerely

(GP name)
(Surgery)

Please send a copy of this response to:

1. The specialist/consultant requesting shared care
2. AN ANONYMISED COPY OF THIS FORM ONLY to the Medicines Management Clinical Effectiveness Team, 1st Floor East Point, Cardinal Square, 10 Nottingham Road, Derby, DE1 3QT or E-MAIL: sderccg.derbyshiremedicinesmanagement@nhs.net

(Sending a copy of this form to the Clinical Effectiveness Team will help to identify any inappropriate requests for shared care e.g. indication not covered, hospital monitoring requirements not fulfilled. It will also help to inform the CCG prescribing group of the reasons shared care is not being undertaken allowing for changes to be made in future updates to improve patient care).