ACUTE MANAGEMENT OF PARKINSON'S PATIENTS WHO ARE NIL BY MOUTH (NBM) OR WHO HAVE A COMPROMISED SWALLOW

NHS LANARKSHIRE PARKINSON'S TEAM

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INTRODUCTION

Parkinson's disease (PD) is a common and progressive neurodegenerative condition characterised by the motor symptoms of bradykinesia, tremor and rigidity. Increasingly, the non-motor features of PD such as depression, anxiety, apathy, sleep disorders and dementia are being recognised as important causes of morbidity in these patients.

Patients with PD can present to a number of acute specialties within the hospital, not necessarily with issues related to their PD. It is therefore important to have an understanding of common pitfalls in their acute management, and how to avoid these, to try to improve the outcomes for PD patients and their families.

"Get it on time"- Parkinson's disease medication

In the acute hospital setting, problems often arise due to failure to prescribe usual medications at the correct time, lack of availability of medication, lack of flexibility of drug round timing and institution of a Nil by Mouth (NBM) approach without having a treatment strategy.

Failure to administer PD medication can initiate a vicious cycle of swallowing difficulties and many consequent complications. These include aspiration pneumonia, reduced mobility, falls, fractures, prolonged length of stay, increased care needs and pain/distress both for patients and their relatives.

In the most severe instance, Parkinsonism-hyperpyrexia syndrome can occur and this can be fatal. This syndrome is clinically indistinguishable from neuroleptic malignant syndrome and is precipitated by abrupt withdrawal or malabsorption of Levo-dopa.

Overall, these guidelines, adapted from those in existence in other NHS Boards (see references), are designed to help provide advice to those involved in the care of a Parkinson's patient on admission until specialist advice from the Parkinson's team can be sought.

WHAT SHOULD YOU DO WHEN A PD PATIENT IS ADMITTED?

1. Please prescribe **their usual** PD medication as **usual**:
   DO NOT STOP ANY PARKINSON'S MEDICATIONS

   (Obtain accurate medication history from patient, relative, emergency care summary (ECS) or Clinical Portal).

   Pay close attention to:

   a. Medication name (generic or brand name)
   b. Formulation (standard, dispersible, prolonged release)
   c. Doses
   d. Timings (These should be patient's usual times NOT those to suit drug rounds. Also please write exact time on cardex rather than identifying time window i.e. 10am not 10am-12noon)
   e. Route of administration (oral vs topical)

2. Ensure that the medication is obtained as soon as possible. It is not acceptable for Parkinson's medication to be marked as "4/ unavailable" on the cardex. If necessary, source medication from patient's own supply or borrow from the holding ward – see Appendix 2. If using the patient's own medication, the instructions from the NHSL Code of Practice should be followed see Appendix 1. For the holding wards and the list of stock held see Appendix 2.

   REMEMBER: when unsure - please seek help from the Pharmacy department (including the On-call pharmacist out of hours)

3. Do not prescribe any medications which can worsen the symptoms of Parkinson's. Please avoid use of haloperidol, metoclopramide, or prochlorperazine. If an anti-emetic is required, domperidone can be used orally. Please note that due to the risk of cardiac side effects with domperidone, the lowest effective dose should be used for the shortest possible time (please note MHRA guidance).

4. If the patient is on an advanced therapy such as Duodopa or Apomorphine, this should be continued as usual and specialist help should be sought from the Parkinson's Team (see contact details section)

5. Remember once oral therapy is to be restarted contact PD team for advice if required.

IF A PD PATIENT IS UNABLE TO SWALLOW OR NBM:

- Consider and treat the underlying issue causing swallowing difficulties (i.e. chest/ urine infection etc.)
- Refer to Speech and Language Therapy for formal assessment.
- Refer the patient to the Parkinson's team as soon as possible (see contact details).
- If unable to contact PD team (e.g. out of hours), follow the advice below regarding conversion of a patient's usual medication to an alternative. First of all use Table 1 to identify all the PD medications a patient is taking.

Table 1:

LEVO-DOPA PREPARATIONS	DOPAMINE AGONISTS	OTHER PD MEDICATIONS (Medications in this column can be safely omitted until swallow is restored)
Co-beneldopa = benserazide + levodopa (Madopar)	Ropinirole (Requip)	MAOB Inhibitors (Selegiline, Rasagiline, Zelapar)
Co-careldopa = carbidopa + levodopa (Sinemet)	Rotigotine (Neupro)	COMT inhibitors (Entacapone/ Tolcapone)
Carbidopa + levodopa + entacapone (Stalevo)	Pramipexole (Mirapexin)	Amantadine
Duodopa	Apomorphine	

If on levodopa preparations only, go to PAGE 6
If on dopamine agonists only, go to PAGE 8
If on a combination of levodopa and dopamine agonists, go to PAGE 9

IF ONLY ON LEVO-DOPA PREPARATIONS

Levo-dopa preparations can be converted to an equivalent dose of dispersible Madopar and administered via a naso-gastric tube if a patient is able to give consent and tolerate this.

Table 2 highlights how to calculate the required dose of dispersible Madopar tablets from the equivalent levodopa dose of commonly used medication regimens. As this is not an exhaustive list, please apply the same principles to higher doses or different frequencies of Madopar/ Sinemet/ Stalevo. Please note that dispersible Madopar tablets come in 62.5mg and 125mg strengths.

Table 2:

Current dose	Frequency	How much dispersible Madopar should I prescribe?
1 capsule of Madopar 62.5mg	Three times daily	62.5mg dispersible Madopar three times daily
1 capsule of Madopar 125mg	Three times daily	125mg dispersible Madopar three times daily
1 capsule of Madopar 125mg	Four times daily	125mg dispersible Madopar four times daily
1 tablet of Sinemet 62.5mg	Three times daily	62.5mg dispersible Madopar three times daily
1 tablet of Sinemet 125mg	Four times daily	125mg dispersible Madopar four times daily
Stalevo 50mg	Four times daily	62.5mg dispersible Madopar four times daily
Stalevo 100mg	Four times daily	125mg dispersible Madopar four times daily
Stalevo 150mg	Four times daily	187.5mg dispersible Madopar four times daily

IF ONLY ON LEVODOPA PREPARATIONS AND UNABLE TO USE NG TUBE

If it is not possible to administer dispersible Madopar down an NG tube, Table 3 can be used to switch levo-dopa preparations to a rotigotine patch equivalent dose. Patches should be changed every 24 hours and the maximum daily dose is 16mg Rotigotine.

Table 3:

Current levodopa regimen	Rotigotine patch at initiation
Madopar or Sinemet 62.5mg twice daily	2mg/24 hours
Madopar or Sinemet 62.5mg three times daily	2mg/24 hours
Madopar or Sinemet 62.5mg four times daily	2mg/24 hours
Madopar or Sinemet 125mg three times daily	4mg/24 hours
Madopar or Sinemet 125mg four times daily	4mg/24 hours
Madopar or Sinemet 187.5mg three times daily	4mg/24 hours
Madopar or Sinemet 187.5mg four times daily	8mg/24 hours
Madopar or Sinemet 250mg three times daily	8mg/24 hours
Madopar or Sinemet 250mg four times daily	8mg/24 hours
Current Stalevo regimen	Rotigotine patch at initiation
Stalevo 50/12.5/200 three times daily	2mg/24 hours
Stalevo 100/25/200 three times daily	4mg/24 hours
Stalevo 100/25/200 four times daily	4mg/24 hours
Stalevo 150/37.5/200 three times daily	8mg/24 hours
Stalevo 200/50/200 three times daily	8mg/24 hours

NB Controlled release dosing see below

The above recommended doses are based on guidelines as well as the PD team's own clinical experience. If further discussion is required on starting doses please contact the PD team.

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- Each patient should be treated as an individual. In the presence of delirium or underlying cognitive impairment, our team would advise a very cautious approach; initial dose may need lowered and up titrated slowly. Patients require review on a daily basis and also check patch is still attached if the patient is sweaty or has a high temperature.

- Once patch is applied it will take 24-48 hours for effect.

- Patches are available in 2mg/4mg/6mg and 8mg strengths. (Do not cut patches to achieve correct dose). Combinations of patches can be used to make correct total if necessary (i.e. 2 x 2mg = 4mg)

- 100mg controlled release levodopa is approximately equivalent to 2mg/24hour rotigotine, therefore adjust patch strength as appropriate e.g. if patient on Madopar 125mg three times a day + Madopar CR at night, patch initiation dose would be 6mg/24 hours.

IF ONLY ON DOPAMINE AGONIST (DA) TREATMENT

If a patient is only on dopamine agonist treatment, Table 4 highlights how crushed tablets can be administered on a short term basis (i.e. first 48 hours) through an NG tube. If tube blockage occurs, or longer term use is required, please see Table 5 with suggested conversions from oral dopamine agonist doses to equivalent patch treatment.

Table 4:

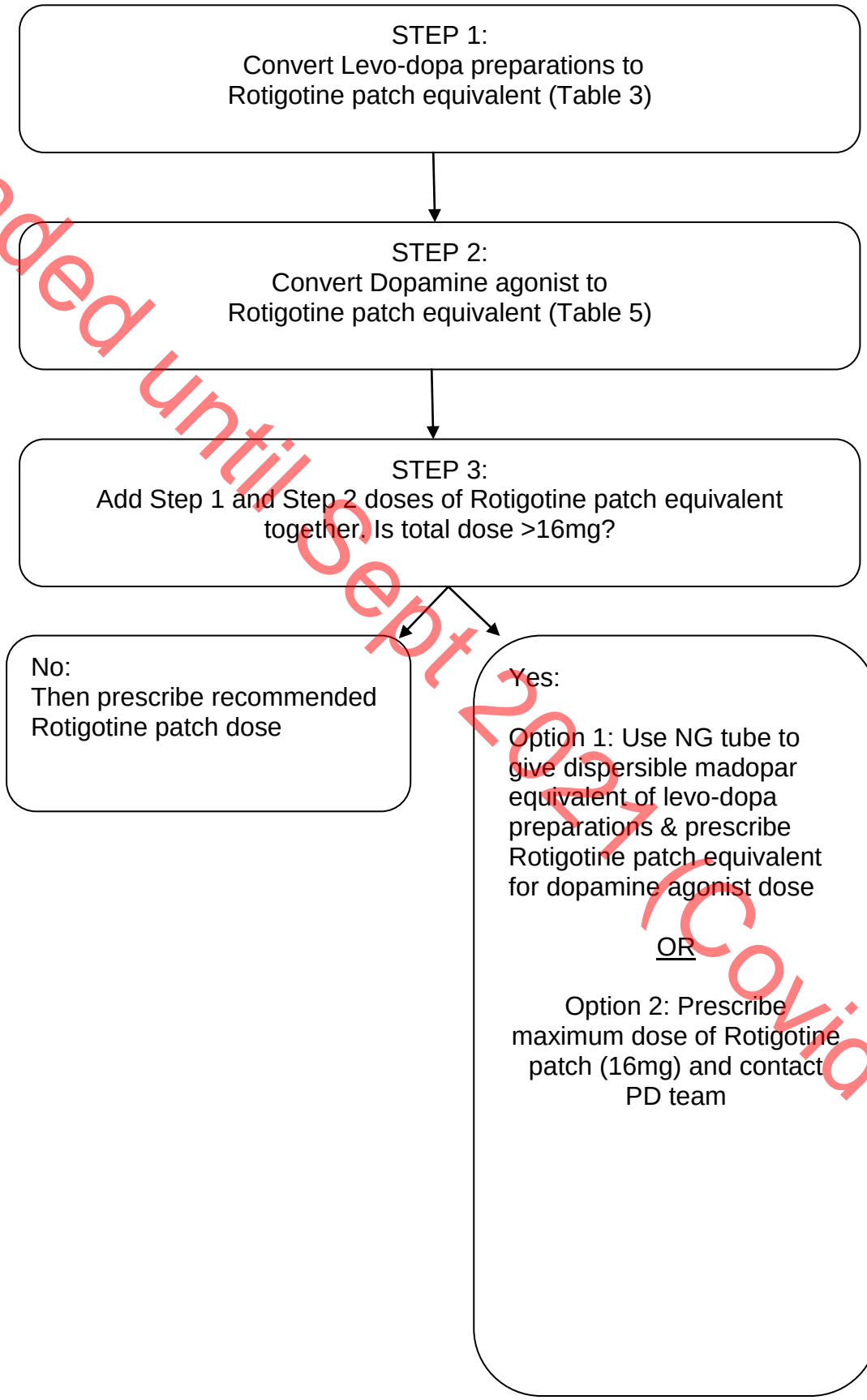
Dopamine agonist	Advice
Rotigotine patch (Neupro)	Continue
Ropinirole (Requip)	Maintain same dose, crush tablets* and mix with water prior to administration
Ropinirole XL (Requip XL)	Convert to standard dose ropinirole and crush as above* e.g. 18mg XL = 6mg TID
Pramipexole (Mirapexin)	Maintain same dose, crush tablets*
Pramipexole PR (Mirapexin PR)	Convert to standard does pramipexole and crush as above*
Apomorphine (subcut injection or infusion)	Continue. See Page 10 for further information.

* Unlicensed use but accepted practice in this clinical scenario hence no paperwork needs to be completed prior to use

Table 5:

Ropinirole	Ropinirole XL	Pramipexole (salt content)	Rotigotine patch
Starter pack	n/a	0.125mg three times daily	2mg/24hr
1mg three times daily	4mg/day	0.25mg three times daily	4mg/24hr
2mg three times daily	6mg/day	0.5mg three times daily	6mg/24hr
3mg three times daily	8mg/ day	0.75mg three times daily	8mg/24hr
4mg three times daily	12mg/ day	1mg three times daily	10-12mg/24hr
6mg three times daily	16mg/day	1.25mg three times daily	14mg/24hr
8mg three times daily	24mg/ day	1.5mg three times daily	16mg/24hr

IF ON LEVODOPA PREPARATIONS AND DOPAMINE AGONISTS



ADVANCED THERAPIES

1. APOMORPHINE

   Please remember that this treatment should NEVER be initiated without the involvement of a Parkinson's Specialist

   If a patient is admitted who is already on apomorphine, this should be continued and the Parkinson's Team should be contacted as soon as possible. The Apo-go helpline is also available 24 hours a day for advice (0844 880 1327).

2. DUODOPA

   Duodopa is an intrajejunal gel infusion of levodopa/carbidopa through a modified PEG tube. Once established, most complications are likely to be due to technical problems with the tube such a displacement or blockage.

   If a patient is admitted who is already on Duodopa and no tube problems are identified, this should be continued. Again, specialist input from the Parkinson's Team should be sought as soon as practically possible. There is also a 24 hour DUODOPA helpline on 0800 4584410.

CONTACT DETAILS FOR THE NHS LANARKSHIRE PARKINSON'S TEAM

Neurology Nurse Specialist: Chris McBrearty

Telephone number for nurse specialist: (01355) 576089

Consultants:

Dr Ben Adler, Wishaw Hospital
Dr Helen Morgan, Wishaw Hospital
Dr Alison Falconer, Monklands Hospital
Dr Laura Peacock, Hairmyres Hospital

References:

- NHS Fife “Acute Management of Parkinson’s patients”: http://www.fifeadtc.scot.nhs.uk/support/Acute%20management%20of%20Parkinsons%20%20Patients.pdf

- Jones SL, Hindle JV. Parkinson’s disease in the acute hospital. Clinical Medicine 2011, Vol 11, No 1:84-88.

- Brennan KA, Genever RW. Managing Parkinson’s disease during surgery. BMJ 2010; 341:c5718

- PDNS North West Acute Management of PD patients with compromised swallow or NBM http://www.cheshire-epaige.nhs.uk/ePaige%20Documents/Nil%20by%20Mouth%20Pathway%202012.pdf

APPENDIX 1: The use of a patient's own medication

Before the decision is made to use a patient's own medicine the integrity of the medicines must be assessed by medical staff or a registered nurse/midwife. A record must be made in the nursing or medical notes signed by the assessor giving details of the medicines suitable for use.

Patient's own medicines may only be used if they comply with the following:

a) The medicine is in an original dispensed container or blister pack clearly labelled with the name and strength of the drug and the name of the patient.

b) On inspection the contents of the container are all of the same appearance and can be identified as being the drug named on the outer container and are the correct strength and formulation.

c) The medicine is within three months of the dispensing date on the container and is not passed the expiry date on an original pack.

d) On examination the medicines and container are in good condition and acceptable for use.

If there is any doubt as to the identity or quality of the medicines to be used they must not be used. Further advice should be sought from Pharmacy.

Appendix 2: Parkinson's Drug Stocks

The list of medication below is held in the following wards and is topped up by pharmacy. Any ward requiring an urgent dose can borrow a dose as per Medicines Code of Practice until the drugs can be ordered / received from pharmacy.

Hairmyres ward 2: 01355 585021

Monklands ERU ward: 01236 712744

Wishaw ward 9: 01698 366091 / 366092

Madopar (co-beneldopa) dispersible 62.5mg tablets
Madopar 62.5mg (co-beneldopa 12.5 / levodopa 50mg) capsules
Madopar 125mg (co-beneldopa 25 / levodopa 100mg) capsules

Mirapexin Prolonged Release 260micrograms base (375micrograms salt)
Pramipexole 88micrograms base(125micrograms salt)

Ropinirole modified release Requip XL 2mg tablets
Ropinirole 1mg tablets
Rotigotine patches 2mg and 4mg

Sinemet (co-careldopa 12.5 / levodopa 50mg) 62.5mg tablets
Sinemet (co-careldopa 25 / levodopa 100mg) 125mg tablets

Stalevo
Stalevo 50 (levodopa 50mg, carbidopa 12.5mg, entacapone 200mg) tablets
Stalevo 75 (levodopa 75mg, carbidopa 18.75mg entacapone 200mg) tablets
Stalevo 100 (levodopa 100mg, carbidopa 25mg, entacapone 200mg) tablets
Stalevo 125 (levodopa 125mg, carbidopa 31.25mg, entacapone 200mg) tablets
Stalevo 150 (levodopa 150mg, carbidopa 37.5mg, entacapone 200mg) tablets
Stalevo 175 (levodopa 175mg, carbidopa 43.75mg, entacapone 200mg) tablets
Stalevo 200 (levodopa 200mg, carbidopa 50mg, entacapone 200mg) tablets