

EMERGENCY MANAGEMENT OF PATIENTS WITH PARKINSON'S

PARKINSON'S^{UK} CHANGE ATTITUDES. FIND A CURE. JOIN US.

Missing doses of Parkinson's medication increases care needs and can cause serious complications, including rare but potentially fatal neuroleptic-like malignant syndrome –

DO NOT STOP PARKINSON'S MEDICATION.

- Keep to same dose (if medication is brand or generic, keep to this as well as the type of preparation) and check prescribed times with the patient/carers where possible – dosages are individualised to each person and may not coincide with drug round timings.
- Write up first dose as stat. prescription.
- If the patient/carers have brought in medication suitable to use, support continuation of their usual routine (including self-administration where able).

- Make sure they have enough medication (use emergency drug cupboard or contact on-call pharmacist if necessary).
- Only adjust prescribed medication routine in consultation with Parkinson's specialist (see below for special circumstances).
- Consider timing of interventions (eg scheduling of operations, therapy sessions) to enable maintenance of the patient's medication routine.

Emergency observations.¹

- Temperature and respiratory rate.
- Blood pressure lying and standing.
- Dipstick urine.
- Mental test score (eg AMT, MMSE).
- Swallowing assessment.

NBM status before surgery?

Patients can still take prescribed oral medication with clear fluids up to two hours before elective surgery.⁴

Therefore, put patients with Parkinson's at start of operating lists to optimise medication.

Confirm timing of surgery with anaesthetist when decision for regional (which would allow continuation of usual medication routines) versus general anaesthesia agreed.

Difficulty taking oral medication? Treat underlying issue.¹

Swallowing difficulties (refer to SaLT for urgent swallowing assessment and advice).

- Consider posture for effective swallow (ie sitting upright with chin neutral).

- Consider placing tablets one at a time on teaspoon with thickened fluids/soft foods (eg yoghurt – may be bitter so use sweetened foods/fluids).
NEVER crush/split modified release preparations (labelled CR, MR, XL or PR).
- Consider dispersible or liquid versions of drug preparations.

Nausea/vomiting

- **AVOID** metoclopramide (Maxalon) and prochlorperazine (Stemetil) (can worsen Parkinson's symptoms).²
- Consider oral/PR domperidone (Motilium).
- Note cyclizine and ondansetron can also be used post-operatively.³

Altered level of consciousness/ confusion/agitation/hallucinations

- Check for history of cognitive impairment.

- Check for underlying cause (eg infection, dehydration, constipation) and treat accordingly.
- **AVOID** haloperidol (Serenace/Haldol) and chlorpromazine (Largactil) and other anti-psychotics (can worsen Parkinson's symptoms)²
 - if necessary, consider a benzodiazepine.

If the patient is still not able to take next prescribed oral dose, consider:

Administration via NG/NJ/PEG tube

- Assess for any contraindications.
- Insert as per local protocol.
- See page 8 for Preparing Parkinson's medication for NG/NJ/PEG tube use.

Administration via rotigotine patches (if unable to tolerate NG/NJ/PEG tube)

- Alert to Parkinson's specialist as priority.
- See page 12 for guide for estimating equivalent levodopa dosages.

Priority is maintenance of dopaminergic medication

Preparing Parkinson's medication for NG/NJ/PEG tube use

- The objective is to continue **short-term** management of Parkinson's with the most appropriate therapy (prioritising dopaminergic medication) given the level of access enabled – consult with specialist about alternative methods if long-term, non-oral administration of medications required.
- The table identifies licensed proprietary use of each medication. Speak to your local pharmacy for further advice.
- For medication given in liquid form, flush tube afterwards to ensure complete administration and to prevent blockages.
- Return to **usual** medication routine (and routes of administration) **as soon as clinically possible**.

Levodopa (main site of absorption is the jejunum – NG recommended)

Co-beneldopa (Madopar)

Use dispersible versions.

For CR doses, because of reduced bioavailability, convert to dispersible equivalent by multiplying total daily levodopa dose by 0.7 and rounding to nearest available dispersible preparation⁴ – monitor as dose frequency may need to be altered accordingly.

Co-careldopa (Sinemet/Lecado/Caramet)

Use dispersible co-beneldopa versions (using equivalent dosage of levodopa).

For CR doses, use co-beneldopa dispersible equivalent conversion equation (see above).

Co-careldopa and entacapone (Stalevo)

Treat co-careldopa constituent of Stalevo as above (ie administer equivalent dispersible co-beneldopa dose).

Entacapone not licensed for use in enteral feeding systems – can be usually safely omitted temporarily (see MAO-B/COMT inhibitors).

Dopamine agonists

Pramipexole (Mirapexin)

Ropinirole (Requip)

Bromocriptine (Parlodel)

Cabergoline (Cabaser)

Pergolide

Not licensed for use in enteral feeding systems. Therefore, consider rotigotine patches as substitute for dopamine agonist medication (see page 12).

MAO-B/Comt Inhibitors

Selegiline (Eldepryl/Zelapar)

Use Eldepryl (as also available in liquid form) – for NJ tubes, dilute with equal volume of water immediately prior to administration.

Rasagiline (Azilect)

Tolcapone (Tasmar)

Entacapone (Comtess)

Not licensed for use in enteral feeding systems – can usually be safely omitted temporarily.

Glutamate Antagonist

Amantadine (Symmetrel)

Use liquid version.

Anticholinergics

Orphenadrine hydrochloride (Disipal)

Use liquid (generic) version.

Procyclidine (Kemadrin)

Use liquid (generic or Arpicolin) version.

Guide for estimating equivalent levodopa dosages for rotigotine patches.⁶

1. Calculate Adjusted Levodopa Equivalent Daily Dose (LEDD):

$$[(A) + (B)] \times 0.55 = \text{_____mg}$$

(A) Total adjusted daily levodopa dose

Total daily levodopa dose in mg (excluding benserazide or carbidopa)

[eg Madopar 125mg

QDS = 4x100=400mg/24h]

X 0.7 (if MR/CR preparation) **or**

X 1.3 (if on COMT inhibitor) **or**

X 0.91 (if MR/CR preparation and on COMT inhibitor)

= _____mg

(B) Total adjusted daily dopamine agonist estimate levodopa equivalent dose

Total daily dopamine agonist in mg

X 100 (if on pramipexole/
cabergoline/ pergolide)

X 20 (if on ropinirole/rotigotine)

X 10 (if on apomorphine/
bromocriptine)

= _____mg

(the above figures refer to each medication's levodopa equivalent factor)

(continue overleaf)

NB (A) or (B) = 0 if not taking that type of medication

2. Calculate dosage for rotigotine patch
= Adjusted LEDD / 20 = ____mg

- Round to nearest 2mg (to max of 16mg) and prescribe as 24-hour patch.
- DO NOT cut patches – available as 2mg/4mg/6mg/8mg patches (can use more than one patch).
- Treat each patient individually and adjust doses accordingly:
 - if increased stiffness/slowness observed, increase dose and review daily
 - if increased confusion/hallucinations observed, decrease dose and review daily
- If adjusted LEDD >350mg, use rotigotine 16mg and consult with specialist regarding administration of apomorphine.

Is the patient taking apomorphine (APO-go) or duodopa infusion or using deep brain stimulation?

Apomorphine (APO-go)

- This is a dopamine agonist administered via an intermittent sub-cut injection or a pump – it is not morphine-based, is not an analgesic and is not a controlled drug.
- Patients who are established on an apomorphine routine need to be continued at the prescribed dose and frequency (injection) or rate (pump) – **do not change the pump settings** unless requested to do so.
- For further support, call the APO-go Helpline on **0844 880 1327** or contact the specialist (eg Parkinson's nurse).

Duodopa infusion

- This is co-careldopa (levodopa and carbidopa) in gel form delivered into the jejunum via a PEJ tube.
- Patients who are established on a Duodopa routine need to be continued at the prescribed rate (providing gastric emptying is not delayed and the PEJ tube is patent – if not, discontinue and commence on rotigotine patches).

Deep brain stimulation (DBS)⁷

- This involves stimulation of target sites within the brain (either in the thalamus, the globus pallidus or the subthalamic nucleus) through electrodes connected to a neurostimulator placed under the skin around the chest or stomach area.
- Patients who are established on DBS need to be maintained on the same routine.

- For further support, contact the neurological department that implanted the system (the patient should carry a patient ID card listing contact details and model number of the DBS system).

Complications of Parkinson's¹

- Delirium (acute confusion due to drugs or infection).
- Chest infection, especially aspiration pneumonia.
- Urinary tract infections.
- Postural hypotension and falls – check meds and BP lying/sitting then standing.
- Neuroleptic-like malignant syndrome.

References

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For help contact

Parkinson's specialist:

Tel: _____

On-call pharmacist:

Tel: _____

We're the Parkinson's support and research charity. Help us find a cure and improve life for everyone affected by Parkinson's.

Parkinson's UK is working with pharmaceutical companies to improve information and standards of care for people affected by Parkinson's. Our partners have no editorial control over the content of the material we produce.

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