Management of Parkinson's in patients with swallowing difficulties or requiring administration via enteral tube

BACKGROUND

Parkinson's is a progressive degenerative neurological disorder associated with loss of dopamine producing neurones in the substantia nigra.

The cardinal features of Parkinson's are:
1. Slowness of movement
2. Muscle rigidity
3. Tremor
4. Postural instability (not in early stages)

Parkinson's is a condition which affects movement and motor function but it is also a condition which causes many non motor symptoms including depression, anxiety and pain.

Medication is crucial in optimising management of Parkinson's and patient's condition will deteriorate significantly if medication cannot be given. This guideline provides information on alternative treatment options and method of administration when a solid oral dosage form cannot be administered via the oral route.

PURPOSE

The information included in this guideline is adapted from a Hull and East Yorkshire Hospital clinical guideline, and may help with queries arising on transfer of care. It may also be used by non-specialists to support prescribing, dispensing and administration of medicines for Parkinson's in patients with swallowing difficulties, whilst awaiting specialist review.

Contact details for further advice

Refer to Speech and Language Therapy service for review of swallowing difficulties (GP referral. See end of document)

Speech and Language Therapy
Unit 4, Henry Boot Way
Priory Park, Hull
HU4 7DY
Email: CHCP.247111@nhs.net

Neurology specialist team
Parkinson's Specialist Nurse: 01482 676438
Consultant Neurologist – as per clinic letter for previous treatment advice

Out of hours: contact Neurology registrar via HEY switchboard (01482 875875)

OPTIONS FOR ADMINISTRATION OF MEDICINES FOR PARKINSON'S IN PATIENTS WITH SWALLOWING DIFFICULTIES OR FOR ADMINISTRATION VIA ENTERAL ROUTE

The options listed below give alternative formulations or method of administration for patients already prescribed specified treatment for Parkinson's.

Crushing of tablets, dispersal of tablets in water (except Madopar dispersible) and administration via enteral tube are all unlicensed indications.

Levodopa

- **Co-careldopa (Sinemet / Caramet / generic)** – standard release preparations will disperse in water in 1-5 minutes for administration down enteral tubes, this must be given immediately as will degrade in the air and settling occurs which can reduce dose administered. Alternatively Sinemet can be converted to Madopar dispersible (as per the table below). See below for CR preparations
- **Co-beneldopa (Madopar)** – use the dispersible tablets. The capsules should not be opened and must be converted to dispersible tablets. See below for CR preparations.

Points to Note when prescribing;

- Levodopa is mainly absorbed in the jejunum, so effect may be unpredictable when administered NJ (time to onset may be quicker and may need to adjust the dose)
- Controlled release (CR) preparations cannot be crushed and must be converted to the appropriate standard release preparation (see table below). Dispersed tablets have a quicker onset, higher bioavailability and shorter duration of action so will need to give in two divided doses spaced out evenly. Due higher bioavailability multiply total daily CR levodopa dose by 0.7 and round to nearest available dispersible preparation
- Absorption may be altered by enteral feeds, particularly those with higher protein concentration. If poor control consider…
    - Reducing protein content in enteral feed (diets containing ≤ 0.8g/kg protein are reported to eliminate the problem
    - Increasing dose of levodopa medication
    - Withholding feed 1-2 hours either side of levodopa medication administration
- It may be appropriate to prescribe a small PRN dose of Co-beneldopa dispersible to cover any "on-off" effects

Table 1 – Converting from co-careldopa to co-beneldopa

Co-careldopa (Sinemet)	**Co-beneldopa (Madopar)**
Sinemet 50/12.5 (62.5) tablet	Madopar 50/12.5 (62.5) dispersible tablet
Sinemet 100/10 (110) tablet	Madopar 100/25 (125) dispersible tablet
Sinemet Plus 100/25 (125) tablet	Madopar 100/25 (125) dispersible tablet
Sinemet 250/25 (275) tablet	2 x Madopar 100/25 (125) dispersible tablet
Half Sinemet CR 100/25 (125) tablet	See text above
Sinemet CR 200/50 (250mg) tablet	

Entacapone and opicapone

this is not an essential medication in the acute situation

- Must be given at the same time of day as levodopa containing medication
- **Enteral feeding tubes:** The tablet can be dispersed in water for administration in 1-5 minutes. Dispersal may not be complete, so will need to flush the tube well. Note this may stain the feeding tube orange. Crushing may produce a red dust which may stain.
- **Swallowing difficultites:** Tablet can be crushed but has bitter taste, mixing with jam, honey or orange juice may help

- There is no information relating to crushing opicapone for enteral feeding tubes or for swallowing difficulties.

Sastravi®/ Stalevo®

- Combination product containing levodopa, carbidopa and entacapone
- **Enteral feeding tubes**: First line: convert to co-beneldopa dispersible tablets plus entacapone and give as described above. See table below for advice on dose conversion on co-beneldopa. Second line: crush the tablet, although this is from anecdotal information, dosage adjustment may be required.
- **Swallowing difficulties**: First line: convert to co-beneldopa dispersible tablets plus entacapone and give as described above. Second line: Tablet can be crushed but has bitter taste, mixing with jam, honey or orange juice may help

Table 2: Stalevo to co-beneldopa plus entacapone

Sastravi/Stalevo strength	Levodopa	Carbidopa	Entacapone	Conversion doses	
				Co-beneldopa	Entacapone
50/12.5/200	50	12.5	200	1x62.5	200
75/18.75/200	75	18.75	200	1.5x62.5	200
100/25/200	100	25	200	1x125	200
125/31.25/200	125	31.25	200	1x125 plus 0.5x62.5	200
150/37.5/200	150	37.5	200	1x125 plus 1x62.5	200
175/43.75/200	175	43.75	200	1x125 plus 1.5x62.5	200
200/50/200	200	50	200	2x125	200

Ropinirole and pramiprexole

- **Enteral feeding tubes:** ropinirole tablets disperse in 10ml water, best with food/NG feed to improve tolerability. Pramiprexole tablets can be crushed and mixed with water.
- **Swallowing difficulties:** ropinirole tablets can be crushed and mixed with soft food (ensure food is eaten). Pramiprexole tablets can be crushed and mixed with water.
- Both agents come as modified release (MR) preparations which cannot go down enteral feeding tubes or be crushed for patients with swallowing difficulties. If the patient is usually on an MR preparation the daily dose must be divided by three and given every 8 hours (eg ropinirole MR 6mg OD should be converted to standard release 2mg TDS)
- Pramipexole can be prescribed both in terms of salt or base. Please ensure prescribed clearly. See below for clarification.

For normal release tablets

88 micrograms base ≡ 125 micrograms salt;
180 micrograms base ≡ 250 micrograms salt;
350 micrograms base ≡ 500 micrograms salt;
700 micrograms base ≡ 1 mg salt

For MR tablets

260 micrograms base ≡ 375 micrograms salt;
520 micrograms base ≡ 750 micrograms salt;
1.05 mg base ≡ 1.5 mg salt;
1.57 mg base ≡ 2.25 mg salt;
2.1 mg base ≡ 3 mg salt;
2.62 mg base ≡ 3.75 mg salt;
3.15 mg base ≡ 4.5 mg salt.

Selegiline,rasagiline and safinamide

Not clinically urgent in acute situation

- **Enteral feeding tubes**: first line: selegiline use liquid and dilute with equal volume of water, second line crush tablets and disperse in water. Rasagline crush tablets and disperse in water. Selegiline oral lyophilisate is not suitable for crushing via enteral feeding tubes 1.25mg is equivalent to 10mg oral selegiline therefore convert to oral selegiline until safe to use. There is no information on crushing safinamide.
- **Swallowing difficulties:** first line: selegiline oral lyophilisate 1.25mg if patient able (tablet placed on tongue and disperses within 10 seconds – patient cannot drink, eat or rinse mouth out for 5 minutes after taking). Need moist mouth and be able to use an oral lyophilisate some oral mucosal absorption. If unable to use oral lyophilisate selegiline liquid. Rasagiline crush tablet and disperse in water, tablets are tasteless. There is no information on crushing safinamide.

Amantadine

Not clinically urgent in acute situation

- First line: Use the syrup (50mg/5ml). This contains sorbitol, so must be diluted with water prior to administration and can cause diarrhoea.
- Second line: The capsules can be opened and the contents mixed with water, the drug is very water soluble and this would be an option if diarrhoea becomes a problem.

REFERENCES

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- Brennan, KA and Genever, RW (2010) Managing Parkinson's disease during surgery. *BMJ.* **341:** 990-993
- Calabrese *et al* (1998) N=0923, a novel soluble dopamine D2 agonist in the treatment of Parkinsonism. *Movement Disorders.* **13** pp 768-74
- Lewitt *et al* (2007) Overnight switch from oral dopaminergic agonists to transdermal rotigotine patch in subjects with Parkinson disease. *Clinical Neuropharmacology.* **30:** 256-65
- Morgan, Jane (2011) Personal communication: MI pharmacist Hull & E Yorkshire Hospitals
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- Royal Cornwall Hospitals NHS Trust. Clinical Guideline for Management of inpatients with Parkinson's Disease. http://www.rcht.nhs.uk/DocumentsLibrary/RoyalCornwallHospitalsTrust/Clinical/Eldercare/ParkinsonsDisease.pdf
- Parkinson's UK. Emergency Management of Patients with Parkinson's 2013. http://www.parkinsons.org.uk/sites/default/files/publications/download/english/pk0135_emergencymanagement.pdf

APPROVAL PROCESS

Written by:	***Adapted from HEY in-patient guidance by Marie Miller, Interface Pharmacist***
Consultation process:	***In-patient guidance written by Neurology Specialist Pharmacist and approved by HEY D&T***
Approved by:	***MMIG, Hull PSC***
Ratified by:	***HERPC Nov 14 Updated September 19***
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HERPC
Hull & East Riding Prescribing Committee

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HULL & EAST RIDING SPEECH AND LANGUAGE THERAPY SERVICE REFERRAL
(a service for adults with acquired disorders of communication or swallowing)

***PLEASE NOTE:* INCOMPLETE FORMS MAY BE RETURNED RESULTING IN A DELAY IN CLIENT BEING SEEN BY SERVICE**

SURNAME:	**FORENAME:**
MR/MRS/MISS/MS, OTHER:	**DATE OF BIRTH :**
ADDRESS:	**NHS NO:**
	TEL NO:
	ALTERNATIVE TEL NO:
GP NAME & ADDRESS:	**GP TEL NO:**
	GP FAX NO:
	DIAGNOSIS:

Diagnosis: **Client aware of diagnosis? YES NO**

MEDICAL HISTORY (please include any relevant history, issues with hearing, vision, memory etc): please attach any other relevant documentation to referral i.e. past medical history, neurology or ENT reports

PLEASE ALSO INDICATE IF ANY OF THE FOLLOWING:

RECURRENT CHEST INFECTIONS	YES / NO
CONCERNS REGARDING RISK OF DEHYDRATION / WEIGHT LOSS	YES / NO
RAPIDLY DETERIORATING or RECEIVING END OF LIFE CARE	YES / NO

SOCIAL INFORMATION (does client live alone?)

RESPECT DOCUMENTATION IN PLACE?	YES / NO – if yes please give details overleaf
IS CLIENT AWARE OF REFERRAL?	YES / NO
IS THERE A LONE WORKING RISK?	YES / NO
IS THERE A SAFEGUARDING RISK?	YES / NO
ANY CONCERNS RE MENTAL CAPACITY	YES / NO

REASON FOR REFERRAL (please describe difficulties as fully as you can - including onset, impact on client or any pattern to difficulties):

COMMUNICATION? YES / NO

EXPRESSIVE DYSPHASIA	☐
RECEPTIVE DYSPHASIA	☐
DYSARTHRIA	☐
VERBAL DYPRAXIA	☐
DYSFLUENCY	☐
DYSPHONIA (VOICE)	☐

(if yes please attach recent ENT report)

SWALLOWING? YES / NO

COUGHING ON:	SOLIDS	☐
COUGHING ON:	FLUIDS	☐
EPISODES OF CHOKING		☐
WEIGHT LOSS		☐

CURRENT DIET & FLUIDS (if known)

……

ANY PREVIOUS SLT INVOLVEMENT / RECOMMENDATIONS IN PLACE?

……

FURTHER INFORMATION:

NAME OF REFERRER:	**JOB TITLE:**
WORK ADDRESS: **TEL NO:**	**SIGNED:** **DATE OF REFERRAL:**

PLEASE SEND TO:
Speech and Language Therapy
Unit 4, Henry Boot Way
Priory Park
Hull
HU4 7DY
Email: CHCP.247111@nhs.net

EXCLUSIONS:

- **GP not a Hull or East Riding GP**
- **Younger than 18 years**
- **Difficulties related to confirmed learning disability (refer to Community Team for Learning Disabilities)**
- **Voice difficulties and live in Hull or Holderness areas (refer to SLT Team at Hull Royal Infirmary)**
- **Speech or swallowing disorders due to head and neck cancer and live in Hull or Holderness (refer to SLT Team at Hull Royal Infirmary)**
- **Hull GP and diagnosis of stroke (refer to Hull Integrated Stroke Service)**