

Midodrine in Postural Hypotension Shared Care Guideline

V3.0

February 2019

1. Aim/Purpose of this Guideline

1.1. This guideline applies to medical, nursing and pharmacy staff in the safe and appropriate prescription and administration of midodrine when used in postural hypotension.

1.2. Postural (orthostatic) hypotension is defined as a fall in blood pressure of over 20 mm Hg systolic, (or 10 mm Hg diastolic), on standing or during head-up tilt to at least 60°. It may be a presenting feature in certain autonomic disorders (e.g. Primary Autonomic Failure, Diabetic neuropathy), or a pointer towards an alternative diagnosis (as in multiple system atrophy presenting with parkinsonian features), and it may complicate drug therapy (as with levodopa and other dopaminergic treatments). Postural hypotension is associated with increased morbidity and also mortality, especially in elderly people due to falls resulting in injuries.

The incidence of Postural Hypotension increases with age and is more common in the over 75 age group.

Midodrine is a prodrug which is converted to desglymidodrine and stimulates α -1 adrenoreceptors. It improves orthostatic BP by increasing vasomotor and venomotor tone.

1.3 This shared care guideline sets out details for the sharing of care of adults with postural hypotension prescribed midodrine. These guidelines provide additional limited information necessary to aid in the treatment of these patients. As with all shared care guidelines they highlight relevant prescribing issues but should be used in conjunction with relevant guidance and do not replace them.

1.4. Data Protection Act 2018 (General Data Protection Regulation – GDPR) Legislation

The Trust has a duty under the DPA18 to ensure that there is a valid legal basis to process personal and sensitive data. The legal basis for processing must be identified and documented before the processing begins. In many cases we may need consent; this must be explicit, informed and documented. We can't rely on Opt out, it must be Opt in.

The DPA18 covers how the Trust obtains, hold, record, use and store all personal and special category (e.g. Health) information in a secure and confidential manner. This Act covers all data and information whether held electronically or on paper and extends to databases, videos and other automated media about living individuals including but not limited to Human Resources and payroll records, medical records, other manual files, microfilm/fiche, pathology results, images and other sensitive data.

DPA18 is applicable to all staff; this includes those working as contractors and providers of services.

For more information about your obligations under the DPA18 please see the 'information use framework policy', or contact the Information Governance Team rch-tr.infogov@nhs.net

2. The Guidance

2.1. Midodrine is recommended for the adjunctive treatment of postural hypotension in those whose postural drop is 20mm Hg or more under the following conditions:

- The hypotension is due to a neurogenic failure such as Parkinson's disease with autonomic failure and not a physical or pharmacological cause.
- Midodrine is used only after non pharmacological measures are unsuccessful
- Midodrine is used only after the recommended first line treatment, the mineralocorticoid fludrocortisone, has been tried or considered and found to be unsuitable. A dose of 50-300 micrograms fludrocortisone once a day is recommended. At the higher doses, hypokalaemia and excessive fluid retention may occur. Its benefits may not be realised until it is stopped.
- Midodrine may be added to ongoing fludrocortisone use. If the latter is not tolerated it would normally be withdrawn slowly. Withdrawal of corticosteroids after prolonged therapy must always be gradual to avoid acute adrenal insufficiency and should be tapered off over weeks or months according to the dose and duration of treatment
- Careful monitoring is needed if fludrocortisone and midodrine are taken together (see drug interactions).
- Midodrine treatment should be initiated by specialists but can be continued by general practitioners under a shared-care guideline

2.2. Preparations and Dosage

Midodrine (Bramox) - 2.5mg, 5mg tablet

2.2.1. Dosing is initially 2.5 mg 2-3 times daily, increased if necessary at weekly intervals in small increments until an optimal response is obtained. Most patients are controlled at or below 30 mg daily given in divided doses. Doses in excess of 30 mg daily are not recommended. The use of midrodine should be stopped if supine hypertension increases excessively.

2.2.2. Dosing of midodrine should occur during the daytime, when the patient needs to be upright. A dosing schedule of 3-4 hour intervals is suggested. The last dose should be taken at least four hours before bedtime to reduce the risk of supine hypertension.

2.2.3. Although there is no evidence to suggest that dosage requirements are different in the elderly, it is recommended that the initial dose used be small and that increases in dosage be titrated against the patient's clinical condition with caution.

2.3. Contraindications

Midodrine is contraindicated in severe organic heart disease (e.g. bradycardia, heart attack, congestive heart failure, cardiac conduction disturbances or aortic aneurysm), Hypertension, Serious obliterative blood vessel disease, cerebrovascular occlusions and vessel spasms, Acute kidney disease, Severe renal impairment (creatinine clearance of less than 30 ml/min), Serious prostate disorder, Urinary retention, Proliferative diabetic retinopathy, Pheochromocytoma, Hyperthyroidism, Narrow angle glaucoma, Hypersensitivity to the active substance or to any of the excipients.

2.4. Precautions

2.4.1. The patients should be cautioned to report symptoms of supine hypertension immediately such as cardiac awareness (chest pain, palpitations, shortness of breath), headache, blurred vision etc, and the patient should be advised to discontinue the medication immediately. Patients with a history of cerebrovascular accidents or with known risk factors for CVA should be monitored closely.

Midodrine should be prescribed with care in patients with prostate disorders as use of the drug may cause urinary retention.

2.4.2. Great caution should be exercised in patients with mild to moderate renal insufficiency (creatinine clearance > 30 mL/min and <60 mL/min).

2.4.3. Slowing of the heart rate may occur after administration of midodrine, primarily due to vagal reflex, therefore great caution should be taken when using it together with other agents that directly or indirectly slow the heart rate. Patients experiencing any signs or symptoms suggestive of bradycardia (pulse slowing, increased dizziness, syncope, and cardiac awareness) should be advised to discontinue midodrine.

2.4.4. The use of midodrine in patients who have an increased risk of or suffer from glaucoma / increased intra-ocular pressure or who are treated with mineralocorticoids / fludrocortisone acetate (which may increase intra-ocular pressure) should be avoided or monitored very closely.

2.4.5. Treatment with midodrine in patients with liver impairment has not been studied. It is therefore recommended to monitor liver function before starting treatment with midodrine and on a continuous basis

2.5. Monitoring

2.5.1. It is essential to monitor supine and sitting blood pressures during the use of the drug. The supine hypertension may often be controlled by an adjustment in the midodrine dosage. Supine hypertension may also be controlled by elevation of the head.

2.5.2. The supine and standing blood pressure should be monitored regularly during initial treatment (at least two times a week). The administration of midodrine should be stopped if the blood pressure in either position increases above 180/100 mm Hg or is considered clinically significant. Patients with persistent labile blood pressure after stabilisation on midodrine should discontinue treatment.

2.5.3. Specialist team:

2.5.3.1. The specialist team should review the patient to assess compliance and tolerance to the drug. A medication review will be carried out and any agents known or suspected to have contributed to postural hypotension stopped or reduced.

2.5.3.2. The aim of therapy is to provide low risk therapy, ensure appropriate mobility and function, prevent falls and associated trauma, and maintain a suitable quality of life. Reducing the postural blood pressure fall should not be the singular aim, as often there is dissociation between symptoms and the level of blood pressure. During the titration stage, the specialist will have arranged for a schedule of regular blood pressure monitoring to be undertaken by the community nurse team, for short term regular monitoring producing a data trend of the Blood Pressure readings (Lying, Standing, Standing for 2-3 minutes).

2.5.3.3. After the first 4 weeks, regular assessments with a maximum of 6 months gap should be carried out by specialists.

The drug should normally only be continued if benefiting the patient and if this is not apparent the specialist should stop the drug at a review consultation.

2.5.4. General Practice:

2.5.4.1. Monitoring of postural BP post titration according to the specialists direction, usually every 3 months, or if symptoms recur.

2.5.4.2. Renal and liver function should be monitored before starting treatment with midodrine (specialist to undertake) and every 3 months or more frequently if evidence of dysfunction (GP to undertake).

2.6. Side Effects

Very common > [1 in 10] > Common > [1 in 100] > Uncommon > [1 in 1000] > Rare > [1 in 10000] > Very rare [<1/10,000]
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2.6.1. *Psychiatric disorders*, Uncommon: Sleep disorders, insomnia. *Nervous system disorders*; Common: Paraesthesia, Headache Uncommon: restlessness, excitability, irritability.

2.6.2. *Cardiac disorders*: Uncommon: Reflex bradycardia.

Rare: Tachycardia, Palpitations.

2.6.3. *Vascular disorders*: Common: Supine hypertension (Blood pressure above or equal to 180/110 mmHg) more common with daily doses above 30mg.

2.6.4. *Gastrointestinal disorders*; Common: Nausea, Dyspepsia, Stomatitis. Uncommon: abdominal pain, vomiting, diarrhoea

2.6.5. *Hepatobiliary disorders*: Rare: Abnormal hepatic function, Raised liver enzymes

Skin and subcutaneous tissue disorders: Very common: Piloerection, Pruritus (mainly of the scalp). Common: Chills, Rash, Flushing.

2.6.6. *Renal and Urinary disorders*: Very common: Dysuria. Common: Urinary retention. Uncommon: Urinary urgency.

2.6. Common/Significant Drug Interactions

2.6.1. Patients taking midodrine should avoid concomitant use of other adeno-sympathomimetic drugs including over the counter remedies.

2.6.2. The concomitant use of midodrine with vasoconstrictor, sympathomimetic pressor agents e.g. decongestants, some appetite suppressants and other drugs such as reserpine, guanethidine, methyl dopa, tricyclic antidepressants, antihistamines, thyroid hormones, MAO-inhibitors *including over-the-counter remedies should be avoided*.

2.6.3. The effects of midodrine may be antagonised by α -adrenergic blocking drugs, such as prazosin and phentolamine. The concomitant use of alpha- and beta-receptor blocking agents (which reduce the heart rate) and midodrine requires careful monitoring.

2.6.4. Glycosides

Great caution should be taken when administering midodrine tablets to patients experiencing bradycardia produced by digitalis (or other glycosides) or psychopharmaceutical drugs since midodrine may potentiate reflex bradycardia and other kinds of conduction disorders or arrhythmias.

2.6.5. Atropine

Midodrine may enhance or potentiate the blood-pressure raising effect of atropine.

2.6.6. Corticosteroid preparations

Patients being treated with midodrine in combination with, mineralocorticoids or glucocorticoids (e.g. fludrocortisone) may be at increased risk of glaucoma/increased intraocular pressure, and should be carefully monitored. Midodrine may enhance or potentiate the possible hypertensive effect of corticosteroid preparations, neuromuscular blockers, beta-blockers, digoxin and

galantamine.

2.7. References:

Summaries of Product Characteristics (Brancaster Pharma Ltd)

NICE NG 71 (Jul'17) Parkinson's disease in adults

NICE. ESUOM5: Postural hypotension in adults: Midodrine. Feb'13

<http://publications.nice.org.uk/esuom5-postural-hypotension-in-adults-midodrine-esuom5/>

2.8. Areas Of Responsibility For The Sharing Of Care

2.8.1. These are suggested ways in which the responsibilities for the management of adult patients with postural hypotension who are prescribed **midodrine** can be shared between the specialist and the general practitioners. 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. If a specialist asks the GP to prescribe this drug the GP should reply to this request as soon as practical. Sharing of care assumes communication between the specialist, GP and patient. The intention to share care should be explained to the patient and be accepted by them.

2.8.2. In the NHS E guidelines on responsibility for prescribing (January 2018) between hospitals and GPs, it is advised that legal responsibility for prescribing lies with the doctor who signs the prescription.

2.8.2.1. Specialist:

- Identify criteria to be used to assess response to treatment and make a baseline assessment - Studies ideally should utilise a tilt table, as patients with neurological disabilities or a profound fall in blood pressure can rapidly and safely be returned to the horizontal position. Additional screening tests can provide information on sympathetic vasoconstrictor and cardiac parasympathetic function. Non-neurogenic causes of postural hypotension which include intravascular volume depletion (blood or fluid loss and Addison's disease), vasodilatation (drugs such as levodopa or glyceryl trinitrate), and cardiac impairment, should be considered in diagnosis.
- Make the diagnosis of postural hypotension and assess whether the patient is suitable for treatment.
- Seek consent from the patient and his/her carer or advocate. Assess likelihood of patient/carers compliance if midodrine is prescribed as part of care and if necessary identify a suitable person to ensure concordance with treatment (e.g. relative or other carer).
- Make the patient aware of the nature of the effect of treatment and that it could be stopped.
- Initially prescribe and titrate the dose up to a maintenance level.

- Review the patient regularly and ensure systems are in place to monitor BP at least twice weekly for about 8 weeks and assess whether the patient is tolerating the treatment and complying with therapy.
- Assess the response to treatment between 4-8 weeks. If response is satisfactory and maintenance dose is reached ask the GP whether they are willing to participate in shared care using the shared care agreement letter.
- Liaise with carers or care agencies as appropriate.
- Assess at six monthly intervals whether the treatment should be discontinued or modified.
- Prompt communication with GP of any changes in treatment, results of monitoring undertaken and assessment of adverse events.
- Provide the GP with relevant contact information with clear arrangements for back-up advice and support should further assistance be required relating to this drug.
- Reporting adverse events to the MHRA

2.8.2.2. General Practitioner:

- If the GP disagrees to undertake shared care he/she will notify the consultant in writing without undue delay by completing the shared care agreement letter.
- Prescribing of midodrine after communication with specialists regarding the need for treatment and once the maintenance dose has been established.
- Provide any information available about the patient's progress to the consultant.
- Ensure that shared care arrangements around monitoring and follow-up by specialists are in place before continuing treatment.
- Reporting to and seeking advice from a specialist on any aspect of patient care which is of concern to the GP and may affect treatment.
- Arrange to review the patient on a regular basis to monitor their wellbeing, postural BPs (usually every 3 months, or if symptoms recur) and renal and liver function tests (every 3 months or more frequently if evidence of dysfunction)
- Avoid prescribing adeno-sympathomimetic drugs, as these may reduce the efficacy of midodrine

- Reporting adverse events to the specialist and MHRA
- Stopping treatment in the case of severe adverse event or as per shared care guideline

2.8.2.3. Patient: and parent / carer responsibilities

- Sign the shared care agreement letter
- Report any adverse effects to their GP and/or specialist regarding their treatment
- Ensure that they have a clear understanding of their treatment
- Ensure they attend for monitoring requirements as per shared care guideline
- Be aware that treatment will be stopped if patient does not attend for monitoring

BACK-UP ADVICE AND SUPPORT IS AVAILABLE FROM THE RELEVANT CLINICAL TEAM.

3. Monitoring compliance and effectiveness

Element to be monitored	Compliance with prescribing and administration in accordance with this guideline (or other safe practice)
Lead	Head of Prescribing Support Unit
Tool	No specific tool
Frequency	As required according to clinical incident reports
Reporting arrangements	Via Cornwall Area Prescribing Committee / Medication Practice Committee
Acting on recommendations and Lead(s)	Relevant Clinical Staff
Change in practice and lessons to be shared	Lessons and changes in practice will be communicated through various channels to relevant staff

4. Equality and Diversity

4.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the ['Equality, Inclusion & Human Rights Policy'](#) or the [Equality and Diversity website](#).

4.2. Equality Impact Assessment

The Initial Equality Impact Assessment Screening Form is at Appendix 2.

Appendix 1. Governance Information

Document Title	Midodrine in Postural Hypotension Shared Care Guideline V3.0		
Date Issued/Approved:	November 2018		
Date Valid From:	November 2018		
Date Valid To:	November 2021		
Directorate / Department responsible (author/owner):	Care of the Elderly Team / Head of Prescribing Support Unit		
Contact details:	01872 253548		
Brief summary of contents	Some clinical issues and details of prescribing responsibilities for GP and specialists		
Suggested Keywords:	Midodrine, postural hypotension		
Target Audience	RCHT	CPFT	KCCG
	✓		✓
Executive Director responsible for Policy:			
Date revised:	Nov'18		
This document replaces (exact title of previous version):	Shared care guideline for midodrine in postural hypotension		
Approval route (names of committees)/consultation:	Cornwall Area Prescribing Committee		
Divisional Manager confirming approval processes	Karen Jarvill		
Name and Post Title of additional signatories	Not required		
Name and Signature of Divisional/Directorate Governance Lead confirming approval by specialty and divisional management meetings	{Original Copy Signed}		
	Name: Kevin Wright		
Signature of Executive Director giving approval	{Original Copy Signed}		
Publication Location (refer to Policy on Policies – Approvals and Ratification):	Internet & Intranet	✓	Intranet Only

Document Library Folder/Sub Folder	Pharmacy
Links to key external standards	
Related Documents:	
Training Need Identified?	No

Version Control Table

Date	Version No	Summary of Changes	Changes Made by (Name and Job Title)
20 Nov'13	V1.0	New version in this format	M Wilcock
25 Mar'14	V2.0	Slight correction to title in EIA page 9	M Wilcock
Sept' 2015	V2.1	Inclusion of branded product rather than unlicensed and slight text amendments in line with Summary of Product Characteristics	M Wilcock
Nov'2018	V3.0	New format and slight text amendments to 2.3, 2.8. Also shared care agreement letter included.	M Wilcock

All or part of this document can be released under the Freedom of Information Act 2000

This document is to be retained for 10 years from the date of expiry.
This document is only valid on the day of printing

Controlled Document

This document has been created following the Royal Cornwall Hospitals NHS Trust Policy for the Development and Management of Knowledge, Procedural and Web Documents (The Policy on Policies). It should not be altered in any way without the express permission of the author or their Line Manager.

Appendix 2. Initial Equality Impact Assessment Form

This assessment will need to be completed in stages to allow for adequate consultation with the relevant groups.


Midodrine in Postural Hypotension Shared Care Guideline V3.0						
Directorate and service area: Pharmacy			Is this a new or existing Policy: Existing			
Name of individual completing assessment: Dan Thomas, Pharmaceutical Services Contracting Team, NHS Kernow			Telephone: 01726 627953			
1. <i>Policy Aim*</i> <i>Who is the strategy / policy / proposal / service function aimed at?</i>		To provide information on prescribing of midodrine to enable General Practitioners to take over prescribing responsibility from secondary care.				
2. <i>Policy Objectives*</i>		To promote a consistent level of shared care between primary and secondary care (in relation to RCHT catchment area)				
3. <i>Policy – intended Outcomes*</i>		Confident and competent prescribers, enabling medicines to be access in a primary care setting.				
4. <i>*How will you measure the outcome?</i>		Six monthly review				
5. Who is intended to benefit from the <i>policy?</i>		General practitioners, hospital specialists and community pharmacists – from understanding local guidance around use of these medicines. Patients/carers, from being able to access medicines from their GP.				
6a Who did you consult with		Workforce	Patients	Local groups	External organisations	Other
		X		X		
b). Please identify the groups who have been consulted about this procedure.		Please record specific names of groups Cornwall Area Prescribing Committee				

What was the outcome of the consultation?	Agreed
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7. The Impact				
Please complete the following table. If you are unsure/don't know if there is a negative impact you need to repeat the consultation step.				
Are there concerns that the policy could have differential impact on:				
Equality Strands:	Yes	No	Unsure	Rationale for Assessment / Existing Evidence
Age		X		
Sex (male, female, trans-gender / gender reassignment)		X		
Race / Ethnic communities /groups		X		
Disability - Learning disability, physical impairment, sensory impairment, mental health conditions and some long term health conditions.		X		
Religion / other beliefs		X		
Marriage and Civil partnership		X		
Pregnancy and maternity		X		
Sexual Orientation, Bisexual, Gay, heterosexual, Lesbian		X		

You will need to continue to a full Equality Impact Assessment if the following have been highlighted:

- You have ticked “Yes” in any column above and
- No consultation or evidence of there being consultation- this excludes any *policies* which have been identified as not requiring consultation. **or**
- Major this relates to service redesign or development

8. Please indicate if a full equality analysis is recommended.		Yes		No	
9. If you are not recommending a Full Impact assessment please explain why.					
Not required					
Signature of policy developer / lead manager / director M Wilcock				Date of completion and submission November 2018	
Names and signatures of members carrying out the Screening Assessment		1. M Wilcock 2. Human Rights, Equality & Inclusion Lead			

Keep one copy and send a copy to the Human Rights, Equality and Inclusion Lead
c/o Royal Cornwall Hospitals NHS Trust, Human Resources Department, Knowledge Spa,
Truro, Cornwall, TR1 3HD

This EIA will not be uploaded to the Trust website without the signature of the Human Rights, Equality & Inclusion Lead.

A summary of the results will be published on the Trust's web site.

Signed ___M Wilcock_____

Date ___28/11/18_