Orthostatic (or postural) hypotension is defined as a sustained reduction of systolic blood pressure of at least 20 mmHg and/or diastolic blood pressure of at least 10 mmHg, or Systolic blood pressure fall >30 mmHg in hypertensive patients with supine systolic blood pressure > 160 mmHg, when assuming a standing position or during a head-up tilt test of at least 60°.

Orthostatic Hypotension results from an inadequate physiological response to postural changes in blood pressure. In people with the condition, standing leads to an abnormally large drop in blood pressure, which can result in symptoms such as light-headedness, dizziness, blurring of vision, syncope and falls.

Orthostatic hypotension may be idiopathic or may arise as a result of disorders affecting the autonomic nervous system (for example, Parkinson's disease, multiple system atrophy or diabetic autonomic neuropathy), from a loss of blood volume or dehydration, or because of certain medications such as antihypertensive drugs.

Orthostatic hypotension is more common in older people, and estimates of prevalence range from 5% to 30% of people aged over 65 years (in the general population), up to 60% of people with Parkinson's disease, and up to 70% of people living in care homes. It is estimated that about 0.2% of people aged over 75 years are admitted to hospital with problems relating to orthostatic hypotension.

**Referral Criteria**

- These guidelines are for patients over 18 years of age.
- 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 patients’ GP.
- Safe prescribing must be accompanied by effective monitoring.
- When transfer is agreed, the patient will be given a supply of medication sufficient for 4 week maintenance therapy.
- The doctor who prescribes the medication has the clinical responsibility for the drug and the consequences of its use.

**SHARED CARE RESPONSIBILITIES**

**Consultant**

1. Undertake the necessary testing to confirm a diagnosis of orthostatic hypotension.
2. Ensure the patient’s concurrent drug therapy is stabilised and there are no contra-indications to treatment options for orthostatic hypotension.
3. Ensure that patient is aware of risks and benefits of medication and has read appropriate information leaflets.
4. Ensure the patient understands the shared care agreement and has signed the Patient Agreement Letter (Page 12).
5. Perform baseline tests (see Monitoring section) and provide results to GP.
6. Initiate treatment and prescribe until the GP formally agrees to share care (as a minimum, prescribe the first 3 months or until patient is stabilised).
7. Send a letter to the GP requesting shared care for this patient.
8. Review the patient in outpatients as clinically appropriate and advise the GP promptly after these reviews on when to adjust the dose, stop treatment or consult with the specialist.
9. Inform GP, by letter, of each clinic attendance and action taken for the management of the patient ensuring current dose, most recent blood results and frequency of monitoring are stated.
10. Evaluate any reported adverse effects by GP or patient.
11. Inform GP of patients who do not attend clinic appointments, admin to contact patient to rearrange.
12. Ensure that backup advice is available at all times. (see Contacts section)
13. To report any adverse events to the CHM and GP: [https://yellowcard.mhra.gov.uk/](https://yellowcard.mhra.gov.uk/)
MANAGEMENT OF ORTHOSTATIC (POSTURAL) HYPOTENSION

General Practitioner
1. Monitor patient’s overall health and well-being.
2. Respond to the request for Shared Care as soon as practicable. If concerns regarding shared care, urgently contact the Consultant and complete attached letter (page 11) with clinical reasons and return to Consultant and Pharmacy department.
3. Ensure compatibility with other concomitant medication.
4. Prescribe at the dose recommended.
5. Monitor Creatinine, electrolytes, LFTs, BP, HR at recommended frequencies (see monitoring section) and refer if abnormal.
6. Adjust the dose as advised by the specialist.
7. Stop treatment on advice of specialist or immediately if any urgent need to stop treatment arises (see monitoring section).
8. Report any adverse events to the specialist and CHM: https://yellowcard.mhra.gov.uk/
9. Inform specialist of any change in the medical condition of patient which may have effect on disease / medications.

Patient
1. Report to specialist or GP if there is not a clear understanding of their treatment and discuss any concerns in relation to treatment
2. Report any adverse effects to their GP and/or specialist whilst using their treatment (Refer to adverse effects section)
3. Urinary Retention: Midodrine may induce an increase in the tone of the internal sphincter of the urinary bladder which may lead to urinary retention. Midodrine also may affect the bladder trigone which may result in a delayed response to bladder filling. Patients should be told to report promptly any indication of urinary retention (e.g. hesitancy or frequency of micturition) which may be a sign of urinary retention.
4. Report any changes in disease symptoms to GP and/or specialist whilst taking Midodrine or fludrocortisone
5. Alert GP and/or specialist of any changes of circumstance which could affect management of disease
6. Inform GP or specialist of any other medicines being taken including over-the-counter products.
7. Attend for regular reviews and monitoring tests.

CONTACT NUMBERS FOR ADVICE AND SUPPORT

Princess Alexandra Hospital NHS Trust – Geriatric Medicine
Consultant: Dr Gunasekera
Tel: 01279 444455 Ext: 7011

Princess Alexandra Hospital NHS Trust – Neurology
Consultant: Dr Gnanapavan
Tel: 01279 444455 Ext: 7422

Princess Alexandra Hospital NHS Trust – Cardiology
Consultant: Dr Jagathesan
Tel: 01279 444455 Ext: 7203

Princess Alexandra Hospital NHS Trust – Pharmacy
Medicines Information (for medicines related queries) 01279 827054
MANAGEMENT OF ORTHOSTATIC (POSTURAL) HYPOTENSION

CLINICAL INFORMATION

Prescribed Indications covered by this Shared Care Agreement
Management of severe orthostatic hypotension due to autonomic dysfunction when corrective factors have been ruled out and other forms of treatment are inadequate

**Fludrocortisone Acetate Tablets (Florinef®):** “Off-Label” indication

**Midodrine Hydrochloride (Bramox®):** Licensed Indication

This shared Care Agreement does not cover management of Neurocardiogenic Syncope

Therapeutic Summary

**Fludrocortisone Acetate Tablets (Florinef®):**
Fludrocortisone acetate is a synthetic mineralocorticoid with minimal glucocorticoid effects. It increases renal sodium reabsorption and expands plasma volume. Sensitization of α- adrenoceptors may augment the action of noradrenaline. After oral administration, fludrocortisone is readily absorbed and peak plasma levels are reached within 45 min. Elimination half-life is around 7 h. It is licensed for partial replacement therapy for primary and secondary adrenocortical insufficiency in Addison's disease and for the treatment of salt-losing adrenogenital syndrome. Fludrocortisone does not have marketing authorisation in the UK for treating postural hypotension, so use for this indication is off label.

**Midodrine Hydrochloride (Bramox®):**
Midodrine is a prodrug with an active metabolite, desglymidodrine that is a peripherally acting α-1-adrenoceptor agonist. It increases BP via vasoconstriction. Midodrine does not cross the blood brain barrier after oral administration and does not increase heart rate. The absolute bioavailability is 93% and the elimination half-life of desglymidodrine is 2 – 3 h. The duration of action of midodrine is approximately 4 hours. It is excreted mainly in urine. Midodrine Hydrochloride is now licensed for orthostatic hypotension due to autonomic dysfunction: use for other types of orthostatic hypotension is off-label. Midodrine is not recommended for hypotension due to loss of blood volume or dehydration or medications such as anti-hypertensives. These causes should be excluded before considering midodrine treatment

**Symptoms suggestive of Orthostatic Hypotension**

Diagnosis confirmed with Head-Upright Tilt Testing (Where possible)
Secondary and otherwise treatable causes should be excluded and medication reviewed

**Non-Pharmacological treatment**

**Hydration Advice:** 250mL hourly fluid intake between 08:00 and 18:00
>65 years and no systemic hypertension: Additional table salt in diet (NB: Caution in heart failure or volume overload)
**Venous Compression:** Graded compression hosiery (if tolerated and practicable)

**Pharmacological Treatment**

**Pharmacological treatment:**
**Volume Expansion**
Fludrocortisone 100mcg at night initially (50mcg if >65 years)
Titrated dose according to response up to a maximum of 300mcg daily in 2-3 divided doses

**Pharmacological treatment:**
**Midodrine:**
2.5mg TDS. The third dose of the day should be by or before 17.00 to avoid supine hypertension.
The dose may be increased weekly up to 10mg TDS daily depending on response and tolerability
Fludrocortisone may also be continued in combination
MANAGEMENT OF ORTHOSTATIC (POSTURAL) HYPOTENSION

**Dose and Route of Administration**

**Fludrocortisone Acetate Tablets (Florinef®):**
Fludrocortisone **100mcg** at night initially (50mcg if >65 years)
Titrate dose according to response up to a maximum of **300mcg** daily in 2-3 divided doses

**Midodrine Hydrochloride (Bramox®):**
Midodrine (Bramox®) is available in 2.5 mg and 5 mg tablets: Ideally midodrine is given **first thing** in the morning (before getting out of bed), mid-morning and mid-afternoon:
- Week 1: 2.5mg TDS
- Week 2: 5mg TDS
- Week 3: 7.5mg TDS
- Week 4: 10mg TDS (maximum dose)

Clinical response should be assessed at each stage and dose titrated until symptoms are controlled.
Effects can be seen from as little as half to 1 hour following doses and the increase in standing systolic pressure can be sustained for up to 6 hours or more
Avoid dosing within 4 hours of bedtime/ lying down

https://www.medicines.org.uk/emc/medicine/32649 Fludrocortisone Acetate
https://www.medicines.org.uk/emc/medicine/32647 Midodrine Hydrochloride 2.5mg tablets
https://www.medicines.org.uk/emc/medicine/32651 Midodrine Hydrochloride 5mg tablets

**Duration of Treatment**

Duration of treatment is subject to patients’ response to treatment and tolerability

**Adverse Effects and Management**

**Fludrocortisone Acetate Tablets (Florinef®):**
Most common side effects: Hypertension, sodium and water retention, and potassium and calcium. High doses can cause Cushing’s syndrome, with moon face, striae, and acne
Gastro-intestinal effects: dyspepsia, abdominal distension, acute pancreatitis, oesophageal ulceration and candidiasis
Musculoskeletal effects: muscle weakness, vertebral and long bone fractures, tendon rupture
Endocrine effects: menstrual irregularities and amenorrhoea, hirsutism, weight gain, hypercholesterolaemia, hyperlipidaemia, negative nitrogen and calcium balance, increased appetite; increased susceptibility to and severity of infection, reactivation of dormant tuberculosis
Neuropsychiatric effects: psychological dependence, insomnia, aggravation of schizophrenia, aggravation of epilepsy, increased intracranial pressure with papilloedema in children
Ophthalmic effects: glaucoma, papilloedema, posterior subcapsular cataracts, corneal or scleral thinning and exacerbation of ophthalmic viral or fungal disease, increased intra-ocular pressure, exophthalmos;
Other side effects: impaired healing, petechiae, ecchymoses, facial erythema, suppression of skin test reactions, urticaria, hyperhidrosis, skin atrophy, bruising, telangiectasia, myocardial rupture following recent myocardial infarction, congestive heart failure, leucocytosis, hyperglycaemia, thromboembolism, nausea, malaise, hiccups, headache, vertigo.

Side-effects can be minimised by using lowest effective dose for minimum period possible.

**Midodrine Hydrochloride (Bramox®):**
Common side effects: nausea, dyspepsia, stomatitis, supine hypertension (dose dependent), paraesthesia, headache, urinary disorders, piloerection, pruritus, chills, flushing, rash;
Less commonly side effects: reflex bradycardia, sleep disorders, restlessness, excitability, irritability; rarely tachycardia, palpitations, hepatic dysfunction; also reported abdominal pain, vomiting, diarrhoea, anxiety, confusion
MANAGEMENT OF ORTHOSTATIC (POSTURAL) HYPOTENSION

**Supine hypertension:** regular monitoring of supine and standing blood pressure due to the risk of hypertension in the supine position; treatment must be stopped if supine hypertension is not controlled by reducing the dose. The risk of supine hypertension at night can be reduced by raising the head of the bed. Manufacturer advises that patients report symptoms of supine hypertension (such as chest pain, palpitations, shortness of breath, headache and blurred vision) immediately.

### Cautions

**Fludrocortisone Acetate Tablets (Florinef®):**

**Adrenal suppression:** During prolonged therapy, adrenal atrophy develops and can persist for years after stopping. 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. Patients on long-term systemic therapy with Fludrocortisone Acetate may require supportive corticosteroid therapy in times of stress (such as trauma, surgery or severe illness) both during the treatment period and up to a year afterwards. If corticosteroids have been stopped following prolonged therapy they may need to be reintroduced temporarily.

**Anti-inflammatory/immunosuppressive effects:** Suppression of the inflammatory response and immune function increases the susceptibility to infections and their severity. The clinical presentation may often be atypical and serious infections such as septicaemia and tuberculosis may be masked and may reach an advanced stage before being recognised. Chickenpox, shingles and measles are of particular concern since these illnesses may be fatal in immunosuppressed patients. Patients should be advised to avoid exposure to these diseases, and to seek medical advice without delay if exposure occurs.

Particular care is required in patients with the following conditions and frequent patient monitoring is necessary: recent intestinal anastomoses, diverticulitis, thrombophlebitis, existing or previous history of severe affective disorders (especially previous steroid psychosis), exanthematous disease, chronic nephritis, or renal insufficiency, metastatic carcinoma, osteoporosis (post-menopausal females are particularly at risk); in patients with an active peptic ulcer (or a history of peptic ulcer), myasthenia gravis, systemic fungal infections or in active infections not controlled by antibiotics, in acute psychoses; in acute glomerulonephritis, hypertension, congestive heart failure, glaucoma (or a family history of glaucoma), previous steroid myopathy or epilepsy, liver failure.

Corticosteroid effects may be enhanced in patients with hypothyroidism or decreased in hyperthyroid patients. Diabetes may be aggravated, necessitating a higher insulin dosage. Latent diabetes mellitus may be precipitated. Patients with rare hereditary problems of galactose intolerance, the Lapp lactase deficiency or glucose-galactose malabsorption should not take this medicine. Aspirin should be used cautiously in conjunction with corticosteroids in patients with hypoprothrombinaemia.

**Midodrine Hydrochloride (Bramox®):**

**Severe orthostatic hypotension with supine hypertension:** Regular monitoring of supine and standing blood pressure is necessary due to the risk of hypertension in the supine position.

**Severe disturbances of the autonomic nervous system:** In patients suffering from a severe disturbance of the autonomic nervous system, administration of midodrine may lead to a further reduction of blood pressure when standing.

**Atherosclerotic disease:** Caution must be observed in patients with atherosclerotic disease especially with symptoms of intestinal angina or claudication of the legs.

**Prostate disorders:** Caution is advised in patients with prostate disorders. Use of the drug may cause urinary retention.

**Renal and hepatic function:** It is recommended to evaluate the renal and hepatic parameters before starting treatment with midodrine and on a regular basis.

**Heart rate:** Slowing of the heart rate may occur after midodrine administration, due to vagal reflex. Caution is advised when midodrine is used concomitantly with cardiac glycosides (such as digitalis preparations) and other agents that directly or indirectly reduce heart rate. Patients should be monitored for signs or symptoms suggesting bradycardia.
MANAGEMENT OF ORTHOSTATIC (POSTURAL) HYPOTENSION

Contraindications

Fludrocortisone Acetate Tablets (Florinef®):
- Hypersensitivity to any of the ingredients.
- Systemic infections unless specific anti-infective therapy is employed.
- Because of its marked effect on sodium retention, the use of Fludrocortisone Acetate in the treatment of conditions other than those indicated is not advised.

Midodrine Hydrochloride (Bramox®):
- 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.

Pregnancy and Lactation

Fludrocortisone Acetate Tablets (Florinef®):

**Pregnancy**: there is evidence of harmful effects in pregnancy in animals. There may be a small risk of cleft palate and intra-uterine growth retardation. Hypoadrenalism may occur in the neonate. Patients with pre-eclampsia or fluid retention require close monitoring. It may be decided to continue a pregnancy in a woman requiring replacement mineralocorticoid therapy, despite the risk to the foetus. When corticosteroids are essential however, patients with normal pregnancies may be treated as though they were in the non-gravid state.

**Breastfeeding**: corticosteroids are found in breast milk. Infants born of mothers who have received substantial doses of corticosteroids during pregnancy or during breast feeding should be carefully observed for signs of hypoadrenalism. Maternal treatment should be carefully documented in the infant's medical records to assist in follow up.

Midodrine Hydrochloride (Bramox®):

**Pregnancy**: there are no data from the use of midodrine hydrochloride in pregnant women. Studies in animals have shown reproductive toxicity at maternally toxic doses. Bramox 2.5 mg tablets are not recommended during pregnancy and in women of childbearing potential not using contraception.

**Breastfeeding**: It is unknown whether midodrine and its metabolites are excreted in human milk. A risk to newborns/infants cannot be excluded. Bramox 2.5 mg tablets should not be used during breastfeeding.
MANAGEMENT OF ORTHOSTATIC (POSTURAL) HYPOTENSION

Monitoring Standards
Fludrocortisone Acetate Tablets (Florinef®):

Monitoring by specialist
The specialist will be responsible for the monitoring required during initial titration – First 3 months.

Pre-treatment:
- Assessment for risk factors or pre-existing conditions that may potentially be exacerbated by GC therapy, such as diabetes, dyslipidemia, CVD, GI disorders, affective disorders, or osteoporosis.
- U&E, glucose, BP, weight, FBC, BMD, Lipids, supine blood pressure
- Monitor Electrolytes weekly in the first month and 3 monthly thereafter

Ongoing monitoring by the GP
- U&E, lying and standing blood pressure 3 monthly
- Monitor for signs of developing heart failure or volume overload
- Salt restriction and/or potassium supplements may be necessary
- Withdraw slowly over several weeks to avoid the effects of adrenal suppression

Secondary care to review the continuation of treatment at 6 months then at 12 months

GP will only prescribe Fludrocortisone off label for the management of Orthostatic Hypotension under shared care agreement

Patients should carry steroid treatment cards which give clear guidance on the precautions to be taken to minimise risk and which provides details of prescriber, drug, dosage and the duration of treatment.

Midodrine Hydrochloride (Bramox®):

Monitoring by specialist

Pre-treatment
- Arrange initial lying and standing blood pressure, monitoring regularly (at least twice a week) during initial 4 weeks of treatment
- Urea and Electrolytes
- Renal Function
- Liver Function
- Heart rate

Ongoing monitoring by GP
- Renal and hepatic function every 6 months, monitor renal function 3 monthly if there are signs of dysfunction
- Monitor for signs or symptoms of bradycardia at review and on an ad hoc basis.
- Monitor supine and standing blood pressure (due to the risk of hypertension in the supine position) every 6 months.
- Monitor for symptoms of supine hypertension such as chest pain, palpitations, shortness of breath, headache and blurred vision, and advise patients to self-monitor and report immediately

Secondary care to review the continuation of treatment at 6 months then at 12 months
### MANAGEMENT OF ORTHOSTATIC (POSTURAL) HYPOTENSION

**How is Lying and Standing Blood Pressure Measured?**

- Automated equipment can be used but where measurements are difficult it will be necessary to use a manual sphygmomanometer
- Ascertain if the patient is able and safe to stand: Illness may impair their ability to bear weight and severe symptoms resulting from a profound fall in blood pressure on standing could lead to a fall. Sitting blood pressure can be taken however this can reduce the sensitivity of the test
- Ask the patient to lie on the bed
- Wait at least 5 minutes, then apply the cuff securely such that its position will be unchanged when the patient stands up
- Take Blood Pressure lying down
- Ask or assist the patient to stand up or sit on the edge of the bed if the patient is unable to stand
- Take BP immediately AND repeat after 3 minutes of standing/sitting on edge of bed
- Stop if the patient is unable to stand/sit unsupported or is at risk of falling
- Keep the patient standing/sitting for the full 3 minutes

**What is Abnormal?:** Postural hypotension is said to be present if: systolic Blood Pressure falls by >20mmHg on standing OR Diastolic Blood Pressure falls by >10mmHg on standing

### Action and Advice

**Review and discontinuation of fludrocortisone by GP**

<table>
<thead>
<tr>
<th>Adverse Event</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Symptoms of adrenal suppression:</strong> Weakness/fatigue. Malaise, nausea, vomiting, diarrhoea, abdominal pain, headache (usually in the morning) fever, anorexia/weight loss, myalgia, arthralgia, psychiatric symptoms</td>
<td>A patient information leaflet should be supplied to every patient when a systemic corticosteroid is prescribed. Patients should especially be advised of the following: Infections, Adrenal Suppression, Psychiatric Reactions, and Withdrawal of Corticosteroids</td>
</tr>
<tr>
<td>Mood and behaviour changes</td>
<td><strong>Seek specialist advice.</strong> 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</td>
</tr>
<tr>
<td>Serious gastro-intestinal, musculoskeletal, and ophthalmic effects which require medical help can also occur</td>
<td>Consider prescribing potassium supplements</td>
</tr>
<tr>
<td>Hypokalaemia</td>
<td></td>
</tr>
<tr>
<td>Symptoms of supine hypertension such as chest pain, palpitations, shortness of breath, headache and blurred vision</td>
<td>Usually dose related. Consider dose reduction following discussion with specialist. If persistent despite dose reductions consider discontinuation in consultation with specialist</td>
</tr>
<tr>
<td>Persistently labile blood pressure after the initial titration</td>
<td>Refer back to specialist for further advice</td>
</tr>
</tbody>
</table>
# MANAGEMENT OF ORTHOSTATIC (POSTURAL) HYPOTENSION

## Adverse Event and Discontinuation of Midodrine by GP

<table>
<thead>
<tr>
<th>Adverse Event</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms of supine hypertension immediately such as chest pain, palpitations, shortness of breath, headache and blurred vision</td>
<td>Check lying and standing blood pressure. If supine hypertension present see below</td>
</tr>
<tr>
<td>Supine hypertension (systolic BP &gt; 160 mmHg)</td>
<td>Usually dose related but check last dose is taken at least 4 hours before bedtime. Consider dose reduction or withhold and discuss with specialist. If persistent despite dose reductions consider discontinuation in consultation with specialist</td>
</tr>
<tr>
<td>Urinary retention</td>
<td>Withhold and discuss with specialist team.</td>
</tr>
<tr>
<td>Acute or severe renal impairment</td>
<td>Withhold until discussed with specialist team. The active metabolite is almost exclusively cleared via the kidneys and thus toxicity is likely, check for urinary retention.</td>
</tr>
<tr>
<td>AST, ALT &gt; twice upper limit of reference range</td>
<td>Withhold until discussed with specialist team.</td>
</tr>
<tr>
<td>Lying or standing Blood pressure increases above 180/100 mm Hg or is considered clinically significant</td>
<td>Withhold until discussed with specialist team.</td>
</tr>
<tr>
<td>Persistently labile blood pressure after the initial titration</td>
<td>Discontinue treatment</td>
</tr>
</tbody>
</table>

## Clinically relevant Drug Interactions — see SPC for complete listing

**Fludrocortisone Acetate Tablets (Florinef®):**

<table>
<thead>
<tr>
<th>Oral Anticoagulants</th>
<th>Corticosteroids may potentiate or decrease anticoagulant action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antidiabetics</td>
<td>Corticosteroids may increase blood glucose; diabetic control should be monitored, especially when corticosteroids are initiated, discontinued, or changed in dosage.</td>
</tr>
<tr>
<td>Anthypertensives, including diuretics</td>
<td>Corticosteroids antagonise the effects of anthypertensives and diuretics. The hypokalaemic effect of diuretics, including acetazolamide, is enhanced</td>
</tr>
<tr>
<td>CYP3A inhibitors</td>
<td>Co-treatment with CYP3A inhibitors, including cobicistat-containing products, is expected to increase the risk of systemic side-effects. The combination should be avoided unless the benefit outweighs the increased risk of systemic corticosteroid side-effects</td>
</tr>
<tr>
<td>Digitalis glycosides</td>
<td>Co-administration may enhance the possibility of digitalis toxicity</td>
</tr>
<tr>
<td>Oestrogens, including oral contraceptives</td>
<td>Corticosteroid half-life and concentration may be increased and clearance decreased.</td>
</tr>
<tr>
<td>Hepatic Enzyme Inducers (e.g. aminoglutethemide, barbiturates, carbamazepine, phenytoin, primidone, rifabutin, rifampicin):</td>
<td>There may be increased metabolic clearance of Fludrocortisone Acetate. Patients should be carefully observed for possible diminished effect of steroid, and the dosage should be adjusted accordingly.</td>
</tr>
<tr>
<td>Ketoconazole</td>
<td>Corticosteroid clearance may be decreased, resulting in increased effects</td>
</tr>
<tr>
<td>NSAIDS</td>
<td>Corticosteroids may increase GI bleeding and ulceration associated with NSAIDS. They can reduce serum salicylate levels reducing their efficacy. Stopping corticosteroids when on high-dose NSAIDS may result in salicylate toxicity</td>
</tr>
<tr>
<td>Thyroid drugs</td>
<td>Metabolic clearance of adrenocorticoids is decreased in hypothyroid patients and increased in hyperthyroid patients. Changes in thyroid status of the patient may necessitate adjustment in adrenocorticoid dosage.</td>
</tr>
<tr>
<td>Vaccines</td>
<td>Neurological complications and lack of antibody response may occur when patients taking corticosteroids are vaccinated</td>
</tr>
</tbody>
</table>

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Produced by the Medicines Optimisation Team, approved by MOPB September 2017 Review Date September 2019
MANAGEMENT OF ORTHOSTATIC (POSTURAL) HYPOTENSION

Midodrine Hydrochloride (Bramox®):

<table>
<thead>
<tr>
<th>Sympathomimetics and other vasopressor agents</th>
<th>Concomitant treatment with sympathomimetics and other vasoconstrictive substances such as reserpine, guanethidine, tricyclic antidepressants, antihistamines, thyroid hormones and MAO-inhibitors, including treatments that are available without prescription, should be avoided as a pronounced increase in blood pressure may occur.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha-adrenergic antagonists</td>
<td>As with other specific α-adrenergic agonists, the effect of midodrine is blocked by α-adrenergic antagonists such as prazosin and phentolamine.</td>
</tr>
<tr>
<td>Heart rate reducing drugs</td>
<td>Monitoring is recommended if midodrine is combined with other drugs that directly or indirectly reduce the heart rate.</td>
</tr>
<tr>
<td>Glycosides</td>
<td>Simultaneous use of digitalis preparations is not recommended, as the heart rate reducing effect may be potentiated by midodrine and heart block may occur.</td>
</tr>
<tr>
<td>Corticosteroid preparations</td>
<td>Midodrine may potentiate or enhance the hypertensive effects of 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.</td>
</tr>
</tbody>
</table>

References

- https://www.medicines.org.uk/emc/medicine/32649
- https://www.medicines.org.uk/emc/medicine/32647
- https://www.medicines.org.uk/emc/medicine/32651
MANAGEMENT OF ORTHOSTATIC (POSTURAL) HYPOTENSION

GP response to Shared Care Agreement
(only complete & send if NOT participating in shared care)

This shared care agreement has been approved by the Medicines Optimisation Programme Board September 2017

<table>
<thead>
<tr>
<th>Patient Name:</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 agreement. 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. ANONYMISED COPY OF THIS FORM ONLY to the E-MAIL: tpa-tr.ClinicalPharmacy@nhs.net

(sending a copy of this form to the PAH pharmacy 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 Medicines Optimisation Team of the reasons shared care is not being undertaken by GPs allowing for changes to be made in future updates to improve patient safety)
Information for patients:

**SHARED CARE:**
Agreement information and confirmation

**Patient name:**

**Medicine:**

We would be grateful if you would take time to read this information as it will help us work with you to manage your condition and ensure safe prescribing of the specific medicine listed above.

**What is a Shared Care Agreement (SCA)?**

A Shared Care Agreement (SCA) enables the care you have for a specific condition to be shared between the hospital and your GP.

The agreement means that the medicine the hospital has started, can be continued by your GP, so you won’t have to visit the hospital to collect your medicine.

The SCA gives information on your medicine, guidance on the prescribing and monitoring responsibilities for your consultant (in the hospital), your GP and you. For an SCA, to work everyone involved must understand it and communicate effectively.

Your consultant and your GP will need to sign the agreement and if you agree to this approach, we would ask you to sign this letter, to indicate your agreement to have your care managed in this way.

**How does shared care work?**

**Your consultant and GP share responsibility for your care.**

The consultant is a specialist in your condition and will start prescribing your medicine, making sure it is suitable for you. There will come a point in your treatment when you may not need to be monitored by the consultant as often and this monitoring can be done by your GP.

Once your GP has agreed to the SCA, they will be able to prescribe the same medicine for you at the dose recommended by the consultant.

The organisation which regulates GPs, the General Medical Council, says that 'when a GP prescribes a medicine, the GP needs to satisfy themselves that the prescription is needed, appropriate for the patient and within the limits of their competence'.

So, your GP can only issue a prescription if the consultant and you keep to the responsibilities you have agreed (see below). If responsibilities are not kept or if the GP no longer feels it is safe to prescribe the medicine, he/she will explain the reasons to you and your consultant, then prescribing responsibilities will be transferred back to the hospital.

**What do I need to do to ensure the SCA can continue?**

- **Attend hospital outpatients**
  You must still attend the hospital for regular reviews as directed by your consultant (these may be less frequent than before and you may be seen by a specialist pharmacist or a specialist nurse). If you do not attend your hospital appointments, your GP will not be able to continue issuing prescriptions for this medication.

- **Attend GP appointments**
  You must attend any appointments you have with your GP in relation to this medicine, so they can look after you effectively.
Have blood tests as you have been advised to: Your consultant should have informed you if and how often you need to have blood monitoring tests. You can usually have your blood taken at an appropriate clinic and not need to go to the hospital.

If you do not have the blood monitoring tests as advised by your consultant, your GP will no longer be able to issue you with prescriptions as it would not be safe to do so.

What do I do if I am having side-effects to the medicine?
Your consultant should have informed you of the common side-effects to expect and what to do if you experience them. If you think you may be having side-effects from a medicine report these directly to your consultant. Your GP may need to seek advice from your consultant before issuing you with another prescription; this is to ensure it is safe for you to continue on the medication.

What if my disease symptoms change or get worse?
Report any changes in disease symptoms or circumstances that could affect management of your disease to your consultant.

What about the other medicines I take?
Inform your GP and the consultant of all other medicines you are taking, including those you may have bought yourself. Do not take new medicines (including those you could buy) until you have discussed this with your pharmacist, GP or consultant.

If you would like to go ahead with a shared care agreement for the specific medication identified on page 1, please sign below to confirm that you:

- Understand the shared care agreement.
- Are happy to have your care for this aspect of your health managed by a shared care agreement.
- You agree to attend regular review appointments as requested.
- You agree to have blood tests as required.

What happens if I change GP Practice?
If you register at a new GP Practice a new agreement needs to be put in place between your new GP and the specialist team.

The specialist team can start this process if you provide them with information before you move to make sure there is a smooth handover.

Patient’s signature ..................................................
Date .................................................................
Print name ..........................................................

If at any point in time you would like this shared care agreement to stop, please talk to your GP.
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