**DRUG:** AMIODARONE (Adults)

### Introduction:

**Indication:**
- Treatment of ventricular and supraventricular arrhythmias including arrhythmias associated with Wolff-Parkinson-White syndrome when other treatments are not effective, cannot be used or are contra-indicated.

**Licensing Information:**
- Atrial flutter and fibrillation when other drugs cannot be used.
- All types of tachyarrhythmias of paroxysmal nature including supraventricular, nodal and ventricular tachycardias and ventricular fibrillation when other drugs cannot be used.
- Tachyarrhythmias associated with Wolff-Parkinson-White Syndrome.

**Formulations:** 100mg tablets and 200mg tablets

### Dosage & administration:

- Initially, 200mg THREE times daily for 1 week, then reduced to 200mg TWICE daily for 1 week, and then reduced to 200mg daily (or the minimum dose to control arrhythmia). NB- rarely does a patient need more than 200mg daily.

### Contraindications & Warnings:

- Amiodarone is contraindicated in:
  - Patients with sinus bradycardia, and sino-atrial heart block. (Note it should be used only in conjunction with a pacemaker in patients with severe conduction disturbance or sinus node disease).
  - Patients with evidence or history of thyroid dysfunction or known hypersensitivity to iodine or amiodarone.
  - Combination with drugs that increase the risk of torsades de pointes.
  - Pregnancy (unless exceptional circumstances).
  - Breast feeding.

### Interactions:

- Amiodarone has a long half life and there is potential for interactions to occur for several weeks after treatment with amiodarone has been stopped. This is a list of commonly occurring drug interactions.

  - **Anticoagulants** - enhances anticoagulant effect of warfarin, phenindione and dabigatran. Smaller doses are required.
  - **Digoxin** - increases plasma concentration of digoxin and half doses are usually required.
  - **Flecainide** - plasma concentration of flecainide is increased
  - **Diltiazem, verapamil and beta blockers** - increased risk of bradycardia and myocardial depression
  - **Any medication that prolongs QTc interval** - this may increase the risk of torsades de pointes if used in combination with amiodarone. These include Class 1a and Class III antiarrhythmic drugs e.g. quinidine, procainamide, disopyramide and sotalol; IV erythromycin, co-trimoxazole or pentamidine injection; antipsychotics; quinolone
antibiotics; lithium and tricyclic antidepressants; antimalarials. Concomitant use of these medicines is contra-indicated with amiodarone. If further advice is required, this should be discussed with the cardiologist.

- **Statins** - the risk of muscular toxicity is increased with statins metabolised by CYP 3A4 such as simvastatin, atorvastatin and lovastatin. Manufacturer of simvastatin recommends using a maximum of 20mg and atorvastatin a lower maximum dose.

- **Grapefruit juice** inhibits cytochrome P450 3A4 and may increase the plasma concentration of amiodarone.

For full list see BNF or SPC at [www.medicines.org.uk/EMC](http://www.medicines.org.uk/EMC)

### Adverse Effects:
(Refer to SPC for full list)

Many adverse effects are dose-related and reversible with reduction in dose; however, because of its long half-life this can take some time and adverse effects may develop after treatment is stopped.

- **Gastro-Intestinal** – nausea, vomiting and taste disturbance.

- **Cardiovascular** – bradycardia (reduce dose or if severe withdraw treatment, conduction disturbances (withdraw treatment). Note amiodarone has a long half life so may require pacemaker, beta-adrenostimulants or glucagon – see SPC for further information.

- **Endocrine disorders**- hypothyroidism (20% patients) and hyperthyroidism (5% of patients) occur commonly and thyroid function should be carefully monitored. If the patient becomes hypothyroid amiodarone may be withdrawn if clinically acceptable in which case the hypothyroidism usually resolves within 12 months. However some patients may need treatment for their hypothyroidism with levothyroxine – see under monitoring for more information. If patients become thyrotoxic refer for specialist endocrine advice immediately.

- **Eye disorders**- corneal micro deposits occur almost always in patients on continuous therapy. They may be associated with dazzling light or blurred vision. Corneal micro-deposits consist of complex lipid deposits and are reversible following discontinuation of treatment and do not require discontinuation of amiodarone. Optic neuropathy and/or optic neuritis require amiodarone withdrawal. Drivers should be advised that this may cause them to be dazzled by headlights at night.

- **Hepato-biliary disorders**- increases in serum transaminases are very common early in therapy and these may resolve spontaneously, or with reduction of dosage. Acute liver disorders, with high transaminases/jaundice have been reported. Very rarely chronic liver reactions have been seen, including hepatitis and cirrhosis. See monitoring requirements below.

- **Respiratory**- pulmonary toxicity is a common side effect and patients should be advised to report new respiratory problems.

- **Skin**- photosensitivity is very common and patients should be cautioned to avoid exposure of skin to direct sunlight or sun lamps. A wide spectrum sunscreen such as RoC Total Sunblock should be used to protect against both long ultraviolet and visible light. Amiodarone may also cause slate-grey pigmentation of the skin. This is slowly reversible on discontinuation of treatment.
Responsibilities of the specialist initiating treatment:

- For full list see SPC at www.medicines.org.uk/EMC

General:
- To assess the suitability of the patient for treatment.
- Ensure that the patient/carer has received counselling and understands the therapy, its benefits, limitations, continued monitoring (where applicable), adverse effects, and is aware of actions to take if adverse effects are suspected.
- Inform the GP of the information provided to the patient.
- To review patient as agreed intervals and copy all relevant results for GP
- Carry out disease and initial drug monitoring as listed below.
- Formally hand over to GP by letter and patient informed - send a copy (either electronically or paper copy) of the Shared Care Guideline to the GP and ask whether they are willing to participate in shared care.

Prescribing:
- Prescribe amiodarone until GP agrees to shared care.

Disease & drug monitoring:
- Monitor bloods according to schedule:
  
  | Baseline | ECG, potassium levels, liver function tests, thyroid function tests (including free thyroid hormone levels) and chest x-ray. |

- Discuss shared care arrangement with patient.
- Support and advise GPs as required.
- Assess response to treatment and initiate any dose changes as clinically appropriate including discontinuation of treatment.

General and Prescribing:
- To reply to the request for shared care within 2 weeks of receipt of the Consultant letter.
- Prescribe follow up prescriptions for amiodarone- ensure continued prescribing of amiodarone remains clinically appropriate at dose advised by initiating team
- Notify Consultant if treatment with amiodarone is discontinued.
- Ensure there are no drug interactions with any other medications initiated in primary care

Disease & drug monitoring:
- Carry out drug monitoring as listed – and communicate abnormal results to the Consultant Cardiologist.
- Urgent drug discontinuation/ referral to specialist as clinically appropriate
- To stop treatment on the advice of the specialist.
- To refer back to the Specialist if the patient's condition deteriorates.
- Identify adverse effects to amiodarone and report these to the Specialist and where appropriate to the Commission on Human Medicines/MHRA (Yellow card scheme).

Unless otherwise stated by the secondary care Specialist, apply the following monitoring frequencies following handover from secondary care:

Name: Amiodarone Shared Care Guideline
Version: 1.1
Issue Date: March 2013
Review Date: March 2015
Liver function tests | Every 6 months
---|---
*Initial elevation of serum transaminases can occur and these may resolve spontaneously, or with reduction of dosage. Rarely, acute liver disorders may occur that warrants withdrawal of treatment. It is difficult to be certain of appropriate action if LFTs change. However, a relatively high threshold is probably appropriate before action. The cardiologist should be contacted if there are any concerns about raised LFTs.*

Thyroid Function Tests (including free thyroid hormone levels) | At 3 months, then (if normal) every 12 months for at least 12 months following discontinuation of amiodarone therapy. If suspicion of evolving thyroid dysfunction repeated again in a further 3 months- but see note below re patients who become thyrotoxic.

(**Note manufacturer recommends 6 monthly tests**)

- A minor elevation of TSH is frequently observed but is of no clinical significance in the absence of abnormal thyroid hormone levels. If the patient become thyrotoxic refer for specialist endocrine advice immediately. If treatment withdrawal is recommended this should be communicated to the patient’s cardiologist.

Chest X-ray | Should be repeated if the patient develops symptoms of respiratory disease.

*The usual finding is of upper lobe fibrosis. If no cause for the respiratory symptoms is evident clinically or radiologically the patient should be referred promptly for specialist investigation by a respiratory physician.*

Ophthalmological Examination | Routine ophthalmological examination is not required. Micro deposits may be evident but these rarely cause any symptoms. Patients should be advised of this in case they are seen by an optician. Any changes in vision should be investigated.

Cardiac | ECG monitoring is not required. Monitor patient based on pulse and symptoms

### Responsibilities of the Patient / Carer:

**General:**

- Report any possible adverse reactions to the GP – in particular changes in vision, new respiratory problems.
- Avoid exposure of skin to direct sunlight or sun lamps during treatment and for several months after stopping
- Avoid grapefruit juice
- If taking a statin and amiodarone report any signs of unexplained muscle pain, tenderness or weakness or dark coloured urine.
- Ensure they have an adequate supply of medication.
- Attend appointments
Disease & drug monitoring:
As above - contact GP or initiating team if side effects develop (see adverse effects) and attend appointments including those for routine blood tests/investigations.

Communication:

Specialist to GP:
- The specialist will inform the GP when they have initiated amiodarone and when there are any subsequent changes in treatment – standard clinic letter.
- Send a copy (either electronically or paper copy) of the Shared Care Guideline to the GP and ask whether they are willing to participate in shared care.
- Inform the GP of the information provided to the patient

GP to Specialist:
- To reply to the request for shared care within 2 weeks of receipt of the Consultant letter.
- Irrespective of whether you accept prescribing responsibility or not, you should inform the consultant of relevant medical information regarding the patient and changes to the patient’s medication regime irrespective of indication.
- Notify Consultant if treatment with amiodarone is discontinued.

Contact names & details:
If you have any concerns regarding individual patients, see consultant letter for medical contact details or contact one of the following:

<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Location</th>
<th>Telephone / Bleep / Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emily Waterman</td>
<td>Cardiology Pharmacist</td>
<td>4591 Speed dial via switchboard</td>
</tr>
</tbody>
</table>

Cost:
Amiodarone 200mg x 28 Drug Tariff £2.01 Feb 2013

References:
- BNF 63, March 2012
- Summary of Product Characteristics for Cordarone, last updated on the eMC 15/02/2012
- Drug Tariff May 2012

Document Control:
This information is not inclusive of all prescribing information and potential adverse effects. Please refer to the SPC (data sheet) or BNF for further prescribing information.

The original Microsoft Word file of this document is located on: York Teaching Hospital NHS Foundation Trust Pharmacy Department X:\MEDICINES INFORMATION\Shared Care Guidelines\Approved Shared Care Guidelines\Amiodarone Shared Care Guideline V1.1

Shared Care Guidelines are also available electronically via http://www.yorkandscarboroughformulary.nhs.uk/

Prepared by: Melissa Lacey/ Emily Waterman

Checked by: Jane Crewe (Pharmacist YH) Clarr Ranns (Pharmacist NY and Humber Commissioning Support Unit)

Version: 1.1 (Updated August 2013 to include new x drive location)

Date of Issue / Review: March 2013

Date for next Review: March 2015

Approved by: Drug and Therapeutics Committee