Leeds Teaching Hospitals
Guidelines on the use of Amiodarone for Treatment of Arrhythmias in Children and Neonates

Only to be used under the direction of a Consultant Cardiologist

Indication
Management of refractory supraventricular and ventricular arrhythmias and junctional ectopic tachycardia (JET), atrial fibrillation and flutter and tachyarrhythmias associated with Wolff-Parkinson-White syndrome. Shock resistant ventricular fibrillation and pulseless tachycardia in resuscitation.

Licensed use: not licensed for use in children under 3 years.

Contraindications (except in a cardiac arrest)
- Sinus bradycardia, sino-strial heart block, sinus node disease
- Thyroid dysfunction
- Iodine sensitivity
- Severe respiratory failure

Warnings
- Hypokalaemia
- Reduce dose in liver impairment
- Digoxin or Flecainide doses should be halved with amiodarone, if it is felt that dual therapy should be used

Mode of Action
An antiarrhythmic agent which prolongs the action potential duration in both the atrial and ventricular myocardium (class III antiarrhythmic)

Baseline monitoring
- Electrolytes
- Urea and Creatinine
- Liver function tests
- Thyroid function tests
- Chest X-ray
- Eye examination
- 12 lead ECG
Dosing Regime

Note; In an acute situation with an unwell child/neonate iv amiodarone must be given. It can take up to several weeks for the oral amiodarone to have any effect.

**Loading dose infusion**

5mg/Kg (max 300mg)
over 30 minutes to 4 hours, rate will depend on clinical situation, discuss with consultant intensivist or cardiologist

Avoid or be extra cautious when giving a loading dose infusion of amiodarone in a child immediately post cardiac surgery in junctional ectopic tachycardia (JET). These patients should be connected to a pacing box with it set to pace whilst the bolus dose is given.

then **Continuous infusion over 24hours** = 5 to 15 microgram/Kg/min, however up to 25 microgram/Kg/min can be used.
Note; usually give 10 microgram/Kg/min
(max. 1.2 grams in 24 hours)

**Oral Amiodarone**

Neonates to 11 years: 5mg/kg/dose twice a day for 10 days and then reduce to a maintenance dose of 5mg/kg once daily (max. dose 200mg)
Over 12 years: 200mg three times a day for 1 week, then 200mg twice a day for 1 week and then 200mg daily

Overlap period; the continuous infusion of amiodarone must be overlapped with the oral amiodarone (5mg/Kg/dose twice day) for 5 days in babies, infants and children and 3 days in adolescents

**Administration**

See iv peripheral and central monograph for information. Only give iv amiodarone peripherally for a maximum of 24 hours and obtain central access. Amiodarone tablets can be crushed and dispersed in water

**Monitoring**

- Continuous ECG monitoring whilst on iv amiodarone and then a 12 lead ECG once the oral therapy has been continued for 3 days without iv amiodarone
- LFTs weekly
Long Term Monitoring

Note; Amiodarone monitoring guideline should be placed in the front of each patient's note and filled in with the results of the baseline tests

- Liver Function Tests (LFT’s) every 6 months
- Thyroid Function Tests (TFT’s) every 6 months
- Respiratory function Assessment (unexplained dyspnoea, unexplained cough or fatigue, weight lost, fever) every 6 months
- Visual Assessment (no blurred vision / visual impairment) every 6 months
- Communication of Results to GP

Side effects

- hepatic problem
- microdeposits in the cornea
- bradycardia, conduction disturbances
- photosensitivity, skin rashes
- hyper or hypothyroidism
- pulmonary alveolitis, pnemonitis and fibrosis
- nausea, vomiting, metallic taste, fatigue, hypersensitivity reactions
- iv amiodarone contains benzyl alcohol, which can cause gasping syndrome in neonates
- See BNF for rare and other reported side effects

Pharmacokinetics

In healthy adult amiodarone absorption from the GI tract is slow. Oral bioavailability is <50%. Mean plasma half-life after long term dosing is 50 days. Plasma protein binding is 96%. Amiodarone is extensively metabolised in the liver. Steady state is achieved when ratio of desethylamiodarone to amiodarone ratio is 0.8 to 1. Renal excretion appears to be negligible.

Reference


Evelinalondon.nhs.uk. Paediatric Formulary (date accessed 9.18)


Micromedex Database.

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