Drug Guideline  Sotalol

Summary: Sotalol is a non-selective beta-adrenergic blocker.

Approved by: ICU Medical Director
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Next Review Date: June 2016
Replaces Existing Drug Guideline: March 2004
Previous Review Dates: February 2002, September 2004

1. Introduction:

| Patient safety |

The Aims / Expected Outcome of this drug guideline:

Sotalol will be administered safely and appropriately without any adverse side effects

Related Policies
• C3.00 Drug prescribing
• C3.01 Drug administration
• C3.01 Administration of IV Medications

2. Drug Guideline: Policy Statement

• All care provided within Liverpool Hospital will be in accordance with infection control, manual handling and minimisation and management of aggression guidelines.
• Medications are to be prescribed and signed by a medical officer/authorised nurse practitioner (NP) unless required during an emergency.
• All drugs administered during an emergency (under the direction of a medical officer/authorised nurse practitioner) are to be documented during the event, then prescribed and signed following the event.
• Medications are to be given at the time prescribed (as close to the time as is possible when multiple drugs require ‘same time’ administration and, when the nurse is caring for more than one patient, recognition is given to a possible short delay to administration – antibiotics and other lifesaving drugs are to be prioritised) and are to be signed by the administering nurse.
• Parenteral medication prescriptions and the drug are to be checked with a second registered or endorsed enrolled nurse prior to administration. The “rights of drug administration” must be followed: right: patient, drug, dose, route, administration, time, reason for the drug, documentation, education and evaluation/outcome.
• Adverse drug reactions are to be documented and reported to a medical officer.
• Medication errors are to be reported using the hospital electronic reporting system: IIMS.
• Guidelines are for adult patients unless otherwise stated

3. Guideline

Actions
Sotalol is a class III antiarrhythmic, non-selective beta adrenergic blocker, without sympathomimetic activity or membrane stabilizing activity.

• Sotalol prolongs the action potential, causing a decreased heart rate and a reduced force of contraction, resulting in reduced cardiac workload and myocardial oxygen demand.
• There is no associated decrease in BP in normotensive patients.
• Its major effects are prolongation of the atrial, ventricular and accessory pathway effective refractory periods. The effect on the ventricular myocardium may be reflected by a lengthening of the QTc interval.
• Sotalol is a non-selective blocker of both Beta 1 and Beta 2 receptors and it inhibits renin release.

Indications
• Supraventricular tachycardia.
• Atrial fibrillation and flutter.
• Ventricular tachycardia.

Contraindications
• Bradycardia, pulse rate < 50bpm.
• Patients with 2nd or 3rd degree heart block and sick sinus syndrome.
• Uncontrolled congestive heart failure.
• Shock.
• Long QT syndromes.
• Right ventricular failure secondary to pulmonary hypertension.
• Bronchospasm (patients with asthma and chronic obstructive airway disease).
• Allergic conditions, which would suggest a predisposition to bronchospasm.
• Severe renal impairment.
• Hypersensitivity.

Precautions
• Use with caution in patients with hypotension, recent MI, impaired left ventricular function.
• In patients with peripheral vascular disease, beta-blockade may exacerbate the symptoms.
• Use caution if abruptly withdrawing therapy in patients with coronary artery disease, as it can exacerbate angina and precipitate arrhythmias.
• Hyperthyroidism, the effects of beta-blockers on thyroid hormone metabolism may result in elevation of serum free thyroxine (T4) levels.
• In patients with diabetes, beta-blockers affect glucose metabolism and may mask acute signs of hypoglycaemia, such as tachycardia.
• Electrolyte imbalance, hypokalemia and hypomagnesaemia can exaggerate the degree of QT prolongation and increase the potential for torsades de pointes.
• In patients with phaeochromocytoma, an alpha-blocking drug should be administered before the beta-blocker to avoid exacerbation of hypertension.

Significant interactions
• Beta-blocking agents when used concurrently with calcium channel blockers may cause hypotension, bradycardia, conduction defects and cardiac failure.
• Clonidine and concurrent use of beta-blockers should be avoided because of the risk of adverse reaction and severe withdrawal symptoms.
• Avoid the use of drugs which prolong the QT interval, such as tricyclics antidepressants.

Adverse effects
• Dyspnoea.
• Bradycardia and heart block.
• Hypotension.
• Bronchospasm.
• Lengthening of the QT interval, which may predispose the patient to dysrhythmias such as Torsades de Pointes.
• Headache, dizziness.
• Visual and hearing disturbances.

Presentation
Sotalol 40mg in 4mL ampoule.

Administrations Guidelines
Dose:
Dose range in acutely unwell patients with tachyarrhythmias:
• 10 -20mg IVI given as a slow bolus over 10-15minutes (up to a total dose of 40mg).
• Dilute the desired dose of sotalol with 50ml of 0.9% sodium chloride.
• Administer via syringe driver over 10 -15 minutes.
• The bolus dose may be repeated six hourly.

Clinical Considerations
• Beta blockers should be reduced gradually over a period of 8 to 14 days.
• Severe angina, MI and ventricular dysrhythmias have occurred following abrupt cessation of beta blockers in those patients with ischaemic heart disease.
• Monitor ECG for changes, such as lengthening of the QT interval.
• Closely monitor heart rate and blood pressure.

4. Performance Measures
All incidents are documented using the hospital electronic reporting system: IIMS and managed appropriately by the NUM and staff as directed.

5. References / Links
1. MIMS Online, CIAP: NSW Health Department, Copyright MIMS Australia Pty Ltd. February 2012. http://www.use.hcn.com.au

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