



Anti-Arrhythmics

Sept 2014

Class I - Na channel blockers

Decr conductivity, excitability, automaticity

Ia

Effect: slow conduction, prolong repolarisation

ECG: prolong QRS and QT; more pro-arrhythmic than Ic when used in benign arrhythmias

Procainamide:

Indication: broad complex tachy of unknown cause; VT and SVT, AF, flutter; safe in WPW

Dose: 17mg/kg (12mg/kg if APO) loading dose - 3mg/kg/hr (1.5mg/kg/hr if APO / renal failure)

SE: negative inotrope - decr HR, decr BP; lupus-like syndrome

Quinidine: speeds up V rate (use beta-blocker with); use in AF

Causes anorexia, N+V, haemolytic anaemia, decr plt, cinchonism

Disopyramide: has anti-muscarinic and negative inotrope effect

Ib

Effect: prolongs effective refractory period; little effect on conduction

ECG: minimal

Lignocaine:

Dose: 1.5mg/kg over 1-2mins - further 50-75mg boluses Q5-10min to 225mg max - 2mg/min INF

SE: decr BP, worsened LV function, CNS toxicity (dizziness, perioral paraesthesia, seizures, apnoea)

Mexiletine: high incidence of SE's

Phenytoin

Ic

Effect: decr conduction

ECG: wide QRS; incr PR; more pro-arrhythmic than Ia when used in malignant arrhythmias

Flecainide:

Indication: WPW with AF, SVT, AF, flutter

Dose: 2mg/kg IV over 20mins

SE: CCF in 5%; arrhythmias in ischaemic/structural heart disease

CI: structural heart disease, IHD, LV dysfunction, sick sinus syndrome

Class II - Beta-blockers

ECG: long PR, heart block

Beta-1 selective: atenolol; bisoprolol; decr HR, contractility, CO, O2 demand, BP, IOP

Beta-1 > beta-2: metoprolol; clinical effects as atenolol

Non-selective: propranolol (also has Na blocking); effects as atenolol, but more lethargy and depression

Class III - Potassium channel blockers

Effect: prolong repolarisation

ECG: prolonged PR, QRS, QT

Amiodarone:

Indication: SVT and VT; only 3-5% pro-arrhythmic effect

MOA: Ca, alpha and beta blocker; prolongs AP and effective refractory period

Dose: 300mg stat in arrest. 150mg/10 minutes in 10-20ml D5W, repeat prn or 300mg in 250ml D5W/1 hour

Then 450mg in 250ml D5W over 11.5H (22ml/hr) then same infusion of 11.5 hours.

SE: require stopping trt <1yr in 15%; bradycardia 5%; N+V; halo vision 10% (corneal microdeposits, reversible), photo-sensitive dermatitis 25%; grey-blue skin 5%; abnormal LFT's; pul fibrosis 10-30%

(initially reversible); neuro 30% (tremor, ataxia, insomnia, neuropathy); hyperthyroid 5%; hypothyroid 20%

CI: pregnancy, lactation, marked hypotension, prolonged QTc, iodine allergy, severe hepatic dysfunction

Interactions: incr levels of warfarin (decr warfarin dose 25%), dig, la's, phenytoin, theophylline

Sotalol:

Indication: ischaemic VT

Dose: 0.5-1.5mg/kg

CI: asthma, DM, PVD, EF <40%, hypoK, bradycardia

Bretylum: not available in NZ

Class IV - Ca channel blockers

Effect: prolong conduction at AVN

ECG: prolonged PR

Dihydropyridines (nifedipine, felodipine, amlodipine, nimodipine – vasodilation without negative inotrope, reflex tachycardia likely)

Verapamil: 1mg IV increments; negative inotrope, may worsen CCF/cause HB

Diltiazem: SE as verapamil

