



SVT

Sept 2014

Causes

60% due to AVN re-entry

30% accessory pathways (especially <5yrs)

10% SA/intra-atrial

Other causes: RHD, pericarditis, MI, MVP; alcohol, caffeine, stimulants, hypokalaemia, pregnancy, cannabis

Assessment

Investigations usually not needed in young person with recurrent SVT

CXR, U+E, FBC, TFT, cardiac biomarkers

ECG

HR 150-180, No HR variability like in sinus tachycardia

AVNRT

150-250bpm

Usually not diseased heart

Micro-reentry

Precipitated by ectopic atrial beat being conducted down abnormal pathway

Responds to adenosine

Rate >220 suggests accessory pathway

P wave may be evident at end of QRS in up to 30%

ST elevation in aVR (70% sens/spec for accessory pathway)

ST depression common and does not mean ischaemia (suggest ETT to investigate)

AVRT (orthodromic)

Less common; macro-reentry

Responds to adenosine

Associated with WPW and Lown-Ganong-Levine syndrome

Management

Vagal manoeuvres: try using drugs; revert 30%

Carotid sinus massage Cl'ed if: >75yrs, carotid bruit on either side, SSS, carotid sinus syndrome

Drugs:

1. **Adenosine:** 6, 12, 18 (0.1mg/kg, 0.2mg/kg, 0.3mg/kg) rapid with flush; 3mg if CVL

Shortens atrial AP, decr effective refractory period; blocks SAN and AVN

Effect: reverts 90%; 15% recur; less effective with HR >175

SE: in 30%; usually <30secs; bronchoconstriction; transient sinus arrest >4secs in 5%; blocks, V ectopy

CI: when additional SNS stimulation (sympathomimetics, aortic dissection, ICH, APO), WPW, SSS, 2nd/3rd deg HB, long QT syndrome, decompensated heart failure, asthma, drug induced

Interactions: decr adenosine dose if dipyridamole, carbamazepine, theophylline, caffeine

2. **Verapamil:** 5mg IV slowly - repeat if needed

Indication: Use if OK BP (will decr SBP by 20; can be prevented 10% CaGlu first), no CCF, >2yrs

Effect: 5mg IV 80% reversion; 10mg IV 95% reversion; less effective with HR >175

3. **Flecainide:** 2mg/kg over 30-45mins - asystole after 1-3mins; must have normal heart

4. IV **diltiazem** not available in NZ; **beta-blockers** esp if thyrotoxicosis suspected

Electrical: synchronised; 20-100J (0.5J/kg)

Radio-frequency ablation: decr recurrences <1yr from 60% - 5%; 1-2% risk of CHB