Brugada Syndrome and WPW

Brugada Syndrome

Epidemiology
- Responsible for 60% cases idiopathic VF
- 50% have malignant arrhythmias
- M>F; most common in SE Asia
- Usually present age 30yrs
- 30% develop during febrile episode; 70% induced by meds (eg. Na blockers)
- Untreated mortality 20% at 2yrs

Cause
- Autosomal dominant
- Cardiac sodium channelopathy
- Structurally normal heart, no IHD

ECG
- Long PR
- Partial RBBB
- STE in V1-3, downsloping ST segment
- TWI V1-3
- Short QT

Diagnosis
- Brugada pattern on ECG + at least one of:
  1. Syncopeal episodes
  2. VF
  3. Polymorphic VT
  4. Sudden cardiac death in relative <45yrs
  5. STE in family members

Management
- ICD implantation (if symptomatic or positive flecainide challenge)
- Avoid Ia and Ic, and Na channel blockers
Wolff-Parkinson-White Syndrome

Epidemiology
Pathway in 1-3% population, M>F
50% develop symptoms
Assoc with: Ebstein’s anomaly (10%), HOCM, tuberous sclerosis

Pathophysiology
Accessory pathway
Orthodromic conduction (95%): narrow QRS; returns through accessory pathway
Antidromic conduction (5%): wide QRS; travels down accessory pathway; risk degeneration to VF

Symptoms
SVT 40-80%; AF 10-20%

ECG
Short PR (<0.12)
Delta wave (depolarisation of free V wall)
Tall R wave in V1 (suggests lateral bypass tract)
QRS >0.1s; may get bizarre ST/T wave changes mimicking MI

Lown-Ganong-Levine: short PR without delta wave

WPW + AF with antidromic conduction
1. Irregularly irregular
2. Very fast rate (>200bpm) (bypass tract short refractory period)
3. Variable QRS morphology (wide, bizarre)
3. Fusion beats (AV nodal path and accessory pathway simultaneously)

Management
Contraindicated drugs:
Adenosine
Beta blockers
Calcium channel blockers
Digoxin
May block the AV node and cause unopposed conduction down accessory pathway -> VF
Amiodarone: 5mg/kg iv over 20mins, then 10mg/kg over 24hrs
Flecainide 2mg/kg IV over 30mins (if structurally normal heart and no IHD)
Procainamide 30mg/min to max 17mg/kg

If in doubt: Irregular wide complex tachycardia - electrical cardioversion
Definitive management: catheter ablation of accessory pathway

**WPW + SVT (narrow complex)**
- treat as per usual SVT
  1. vagal maneouvres
  2. Adenosine
  2. Verapamil 1mg/min up to 15mg (Check BP between doses) CI: concurrent beta blocker