



Atrial Fibrillation

Sept 2014

Epidemiology

0.4-2% prevalence

4% >60yrs; >10% >85yrs

2x risk of death compared to SR

Recurrence most common in 1st 3/12, usually due to failure of drug or dosage

2/3 spontaneously revert in 24hrs

Causes

IHD 40%

Valve disease; HTN; hypoK/Mg; thyrotoxicosis (1%); HOCM; sick sinus syndrome; Fever; PE; ETOH

No cause in 5%

Complications

Syncope, hypotension, ischaemia, CCF

CVA - Causes 25% CVA's >80yrs

Risk of CVA incr with age

Overall 4.5% risk of stroke if uncoagulated

Assessment

History: palpitations often absent in elderly; ?cause; ?complications

OE: no a wave on JVP; absent S4

Ix: CXR, U+E, FBC, cardiac markers

Echo: L atrium size, LA thrombus, structural abnormalities

TOE 100% sens, 99% spec for intracardiac thrombus

ECG

Irregularly irregular RR; no P waves

Ventricular rate very rapid if accessory tract (eg. AF with WPW)

Management

Cardioversion

If: Symptomatic/CCF/CP

Young (<65yrs) + no significant PMH

Lone AF

Corrected cause and <48hrs duration

Effect: 55% in SR at 1yr (cf 30% without trt); <50% in SR at 5yrs

Pros: improved QOL compared to rate control; 90% success if <48hrs

Cons: 1-5% risk embolism on cardioversion; no survival benefit over rate control in older/high risk patients; less likely successful if >65yrs, in CCF, late presentation (50% success if >48hrs), prev AF, recurrence while on anti-arrhythmics, structural cardiac lesion, large LA

Electrical cardioversion

If CV instability/ischaemia or failed pharmacological

Requires higher dose than atrial flutter, AP more effective

70J=50% success/100J=85%/140J=90%/210J=>95%



Pharmacological cardioversion

Flecainide: 2mg/kg IV over 30mins - 200-300mg PO

Use if <55yrs, no IHD, no structural heart disease

60% reversion in 3hrs, 80% in 8hrs

CI: IHD, structurally abnormal heart

Amiodarone: 2-5mg/kg IV over 5-10mins

Use if not for flecainide and SBP >90 (otherwise, electrical)

50% reversion in 24hrs, 90% in 48hrs; in maintenance, 65% in SR at 1yr

Pros: little negative inotropy, OK if structural heart disease

Cons: significant long term toxicity

Sotalol: 80-160mg IV

Effect: low reversion rate - don't use if cardioversion important; in maintenance, 40% in SR at 1yr

Pros: good if HTN; has rate control properties

CI: CV instability, poor LV function

Rate control

If >65yrs/CAD/mitral stenosis/structural heart disease

CI to anti-arrhythmics and HR >90

LA diameter >5.5cm

Cardioversion failed/unlikely to be successful/unlikely to be retained

Aim: HR 70-80 if normal/60-70 if AS, MS, LVH, IHD/80-90 if AR, MR

Digoxin: 500mcg IV - 250mcg Q4-6hrly to total 1500mg - 62.5– 250mcg/day

In sedentary patient

Cons: ineffective if shock, sepsis, hypoxia; may be no better than placebo

Verapamil: 1mg increments to max 10mg IV or **Diltiazem** IV (not available)

Cons: temporary; negative inotrope

Metoprolol: 5-10mg IV over 2mins

Anticoagulation:

No if: <48hrs (or if no thrombus on echo)

Yes if: >48hrs: for 24hrs prior if: acute, no thrombus/structural disease on TOE

for 3/52 prior and 4/52 after if chronic

Use **Clexane** if short term

Warfarin

CHADS Score (1 point each)

CHF

HT

AGE > 75

DM

Stroke/past embolus (2 POINTS)



Stroke Risk

0 = 1%/yr 1 = 2% 2 = 3-4% 3 = 6% 4=8.5% 5=12.5% 6=18%

Warfarin decreases stroke risk to 1%/year

Major bleeding risk = 1%/year

0 = ASPIRIN; 1 = either ASPIRIN OR WARFARIN; 2 or more = WARFARIN

Aspirin - 1.5%/yr ARR for 1Y prevention, 2.5%/yr ARR for 2Y prevention; 20% decr risk of CVA

Warfarin - 60% RRR for CVA; 2.5%/yr ARR for 1Y prevention, 8.5%/yr ARR for 2Y prevention

1%/yr haemorrhage risk; 2x risk of CVA if INR <1.7

Atrial Flutter

Causes

MI (in 2% MI's), CCF, PE, myocarditis, chest trauma, digitoxicity

ECG

HR 250-300; 2:1 block usually; Flutter waves 2-3mm in amplitude (in II, III, aVF (inverted), V1); QRS <0.1s (unless flutter waves buried in QRS)

Rate control

As per AF

Cardioversion

Flecainide

50J if unstable; atrial overdrive pacing

Cardioversion pharmacologically less likely than in AF

10% reversion with verapamil, although 90% if assoc with MI

Anticoagulation

As per AF