

Atrial Fibrillation

Definition: Supra ventricular irregular tachycardia, prevalence increases with age (70% >60, 45%>75)[ATRIA study]

Categories:

- Paroxysmal: Episodes terminate spontaneously (in about 7 days, but usually within 24 hours)
- Persistent: If it fails to self-terminate within a week (either spontaneously or through cardioversion).
- Permanent: if the arrhythmia lasts for more than one year and DC cardioversion either has not been attempted or has failed.

Lone: describes paroxysmal, persistent, or permanent AF in individuals < 60 without structural heart disease.

Risk Factors & Associations: CAD, HTN, Valvular disease, Rheumatic heart disease (in developing countries)
Secondary causes-> Post-operative, Alcohol, Thyroid disorders, Myocarditis, Pulmonary embolism, MI (rarely), HF, COPD

Evaluation:

Vitals

Look for signs of the above mentioned diseases (Thyroid, COPD, CAD, etc..)

EKG

Routine chemistries, TSH, this varies pending presentation

ECHO, CXR

Complications: AF can lead to reduction in cardiac output and to development of atrial appendage thrombus formation that can lead to systemic embolization-> Heart Failure, Stroke, mesenteric ischemia, renal infarcts, etc...

Treatment:

-If evidence of hemodynamic instability (hypotension, symptomatic RVR, myocardial ischemia, signs of underperfusion, etc) must be referred to hospital immediately. These patients may need emergent synchronized cardioversion.

Rhythm Control vs. Rate Control->neither have been demonstrated to be superior (AFFIRM and RACE trials), both of these strategies have to be used in conjunction with anticoagulation. Antiarrhythmic medications carry a less desirable side effect profile.

Rate control->

- B-blockers->Atenolol 25mg PO BID or Metoprolol XR 25-200 PO daily
- CCB ->Verapamil 40-120mg PO TID or Verapamil 120-240 mg PO QD.
- ->Diltiazem 180-540mg PO daily
- Digoxin 0.125-0.25mg daily (often after loading dose) works synergistically with the above, has no effect on HR with activity; seldom used as monotherapy. Goal of resting HR<80 and <110 with exertion (6 min walk)

Rhythm Control-> uses anti-arrhythmics such as flecainide, sotalol, amiodarone, etc. This is used when there is failure of rate control and in younger patients whose daily activities do not allow a reduced EF.

Other non-pharmacological treatments include AV junction ablation and pacing, radiofrequency ablation, maze procedure.

Anticoagulation: All patients regardless of treatment strategy need anti-thrombotic treatment, usually with warfarin (target INR 2-3). However, recent FDA approval of *Dabigatran* (Pradaxa) may also be used for this indication. Risk stratification of patients is done using the CHADS2 score (CHF, HTN, Age>75->1 point, prior stroke/TIA-2 points). When determining anti-thrombotic therapy; bleeding risk, adherence and other social factors should be considered

-Points: 0 classified as low risk, may only need ASA.

-Point: 1, categorized as intermediate and need the benefits for anticoagulation needs to be weighted with the risks

-Points ≥ 2 need anticoagulation

Cardioversion: Whether it is through DC or through medications, after the procedure there is transient mechanical dyssynchrony or "atrial stunning" that has variable duration. Anticoagulation should be started about 3-4 weeks before and about a month after if AF has persisted for >48 hours. The role of TEE before cardioversion was reviewed in the ACUTE trial, its use has many limitations and is useful only for limited numbers of patients.

Sources obtained from ACCP, ACC, ACP, Harrison's and UpToDate