

REFERROLOGY SERIES: ATRIAL FIBRILLATION – DR EUGENE TAN

Why is AF important? ([1min](#))

- Common:
 - Most common cardiac arrhythmia in clinical practice
 - Base on Framingham Heart Study, risk for developing AF from 40 to 95 years was 26% for men and 23% for women
- Mortality: Thromboembolic risk

Annual Stroke Risk ^[10]		
CHA ₂ DS ₂ -VASc Score	Stroke Risk %	95% CI
0	0	-
1	1.3	-
2	2.2	-
3	3.2	-
4	4.0	-
5	6.7	-
6	9.8	-
7	9.6	-
8	12.5	-
9	15.2	-

Diagnosing AF ([3min 46sec](#))

- Not all irregular ECGs = AF
- Look out for P waves!
- Look at leads V1 and II
- Morphology: Smaller amplitude than QRS complex, usually precedes QRS complex
- Caution that P waves maybe buried in other complexes

Work Up ([5min 40sec](#))

- Electrolytes
- Thyroid Function Test
- Infection
- Echocardiogram: Structural causes (valvular lesions), ejection fraction
- Troponin – Helpful in risk stratification especially if significantly elevated
 - Often elevated
 - Can be due to trop leak, type 2 MI
- Extent of IHD evaluation: Based on symptoms (check if have exertional symptoms even before present event), echo findings (RWMAAs, reduced EF), troponin, ECG (look for ischemic changes)

Rate vs Rhythm Control? ([10min 5sec](#))

- AFFIRM Trial 2002
- Rhythm control usually for: SIGNIFICANTLY SYMPTOMATIC PAROXYSMAL AF; Mostly patients with minimal comorbidities
- For hospitalised patients with multiple comorbidities – Usually rate control
- Also look at extent of heart remodeling – If significantly remodeled, AF likely to recur hence usually will choose rate control

Rate Control ([12min 36sec](#))

- Target Rates

- Acutely unwell hospitalised: 100-120 – There is usually a reason for the tachycardia (e.g. sepsis, BGIT); hence don't want to blunt the natural sympathetic response too much
- Well clinic patient: Target 70-80
- Agents
 - Beta blockers
 - § On call
 - Give something short acting (metoprolol 12.5-25mg, carvedilol 3.125mg or 6.25); review response in 1-2 hours
 - If patient is persistently tachycardic, always review what is driving the tachycardia rather than simply stacking on more rate control agents
 - Non-dihydropyridine Calcium Channel Blockers
 - § Check EF first – Avoid if EF < 40%
 - Digoxin
 - § Caution in renal impairment
 - Amiodarone
 - § Usually in sick patients with contraindications to beta blockers
- AF with Hypotension
 - Digoxin
 - § Blood pressure neutral
 - § IV digoxin 125-250mg
 - Amiodarone
 - Magnesium Sulphate
 - § Evidence limited
 - § But helps with electrolyte repletion and membrane stability

Who should be anticoagulated? ([21min 44sec](#))

- Non valvular AF: CHADSVASC2 2 or more
- Valvular AF
- Other reasons: LV thrombus, HOCM
- Weigh stroke risk (CHADSVASC) vs bleeding risk (HASBLED)
- If have high stroke risk but high bleeding risk, can consider LA appendage closure device

When to initiate anticoagulation in presence of a trigger? ([25min 45sec](#))

- Weigh CHADSVASC2 score vs 'reversibility' of inciting event
- Generally if high CHADSVASC2, can be anticoagulated

Warfarin vs DOACS? ([27min 6sec](#))

- Latest guidelines: DOACS preferred over warfarin
- Generally similar bleeding risk but lower ICH risk
- While medication wise warfarin is cheaper, but cost equalizes when factoring in blood tests with traveling
- Caution of DOACS in renal impairment

Choosing between DOACS? ([29min 29sec](#))

- Rivaroxaban: Advantage of once a day dosing (Normal Dose: 20mg once/day; GFR 15-50: 15mg once/day; GFR<15 avoid)
- Apixaban: (Normal dose 5mg BD, if have any 2 of the following then 2.5mg BD - >80yo, <60kg, Cr > 133)
 - Has mortality benefit
 - But twice a day dosing

AF and ACS/Stented Coronaries? ([31min 43sec](#))

- Triple therapy (DAPT + DOAC): 1 month
- Dual therapy (DOAC + Plavix): 1 year
- DOAC: Lifelong

Aspirin in AF? ([33min 35sec](#))

- Minimal thromboembolic risk reduction
- Bleeding risk not low

Who would benefit from an early cardiology referral? ([36min 23sec](#))

- Reduced EF
- Structural lesion (e.g. rheumatic MS, HOCM, septal defects)
- Pre-excitation

Follow Up ([37min 53sec](#))

- Follow-up interval
 - If anticoagulation started, see in a month's time to ensure no bleeding complications
 - If anticoagulation not started, see early too – to discuss about anticoagulation
- Investigations
 - Baseline echocardiogram
 - Labs: FBC, renal panel (dose adjust DOACs)
- What to look out for?
 - Symptoms: From AF, from progression to heart failure
 - Heart rate: Consider up-titrating rate control agents

Who should be considered for EP procedures? ([40min 30sec](#))

- Procedures: Pulmonary vein isolation, AV nodal ablation with CRT in heart failure (continuous biventricular pacing)
- Candidates: Very symptomatic (especially despite being on rhythm control therapy), heart failure

Take Home Reminders ([47min 8sec](#))

- AF with RVR – don't just treat the number, always ask why the patient is tachycardic
- Make sure that diagnosis of AF is correct
- Counseling bleeding risk properly is crucial

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<https://www.nejm.org/doi/full/10.1056/NEJMoa2019422> - Oct 2020 Early Rhythm-Control Therapy in Patients with Atrial Fibrillation (EAST AFNET 4 Trial)

Rhythm control in early AF (<1 year) with cardiovascular risk factors had a reduction in CVS composite outcome with rhythm control