Detection and Management of Atrial Fibrillation in Primary Care

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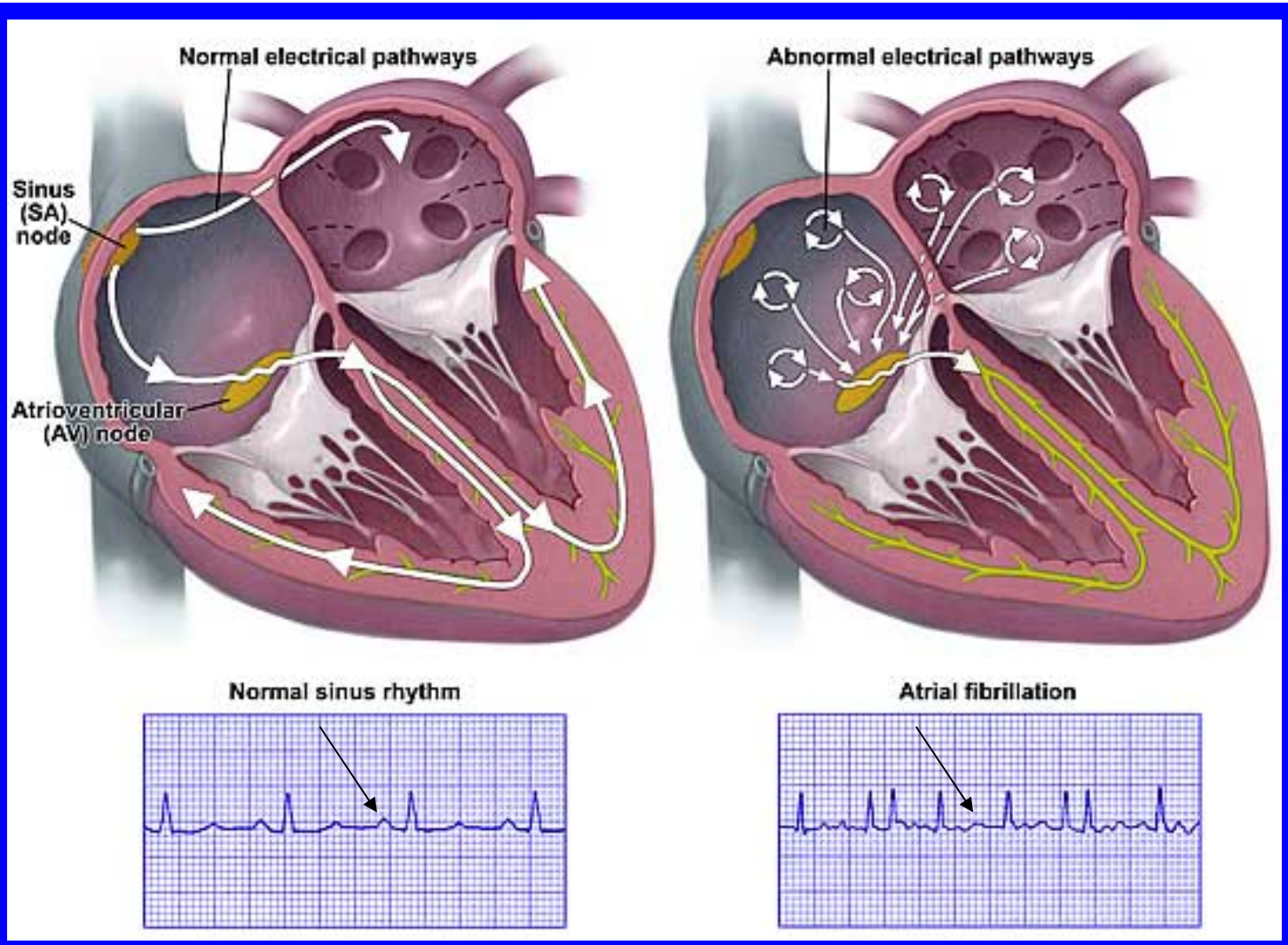


- An atrial tachyarrhythmia with unco-ordinated atrial activation and deterioration in atrial mechanical function

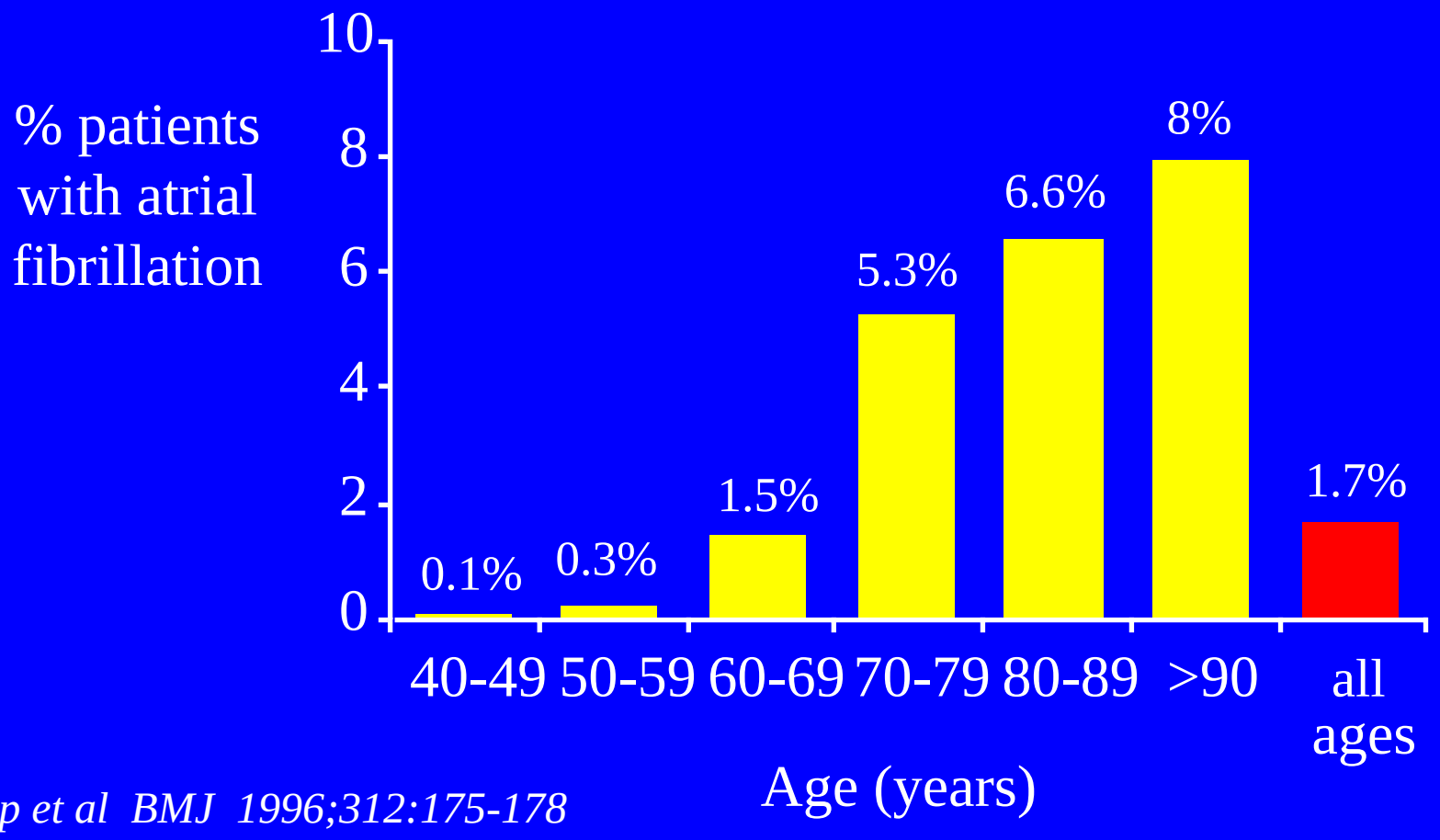
QOF indicators

- QOF indicators
  - Indicator AF 1: The practice can produce a register of patients with AF
  - Indicator AF 2: The percentage of patients with AF diagnosed from 1st April 2006 with ECG or specialist confirmed diagnosis
  - Indicator AF 3: The percentage of patients with AF who are currently treated with anti-coagulant drug therapy or an anti-platelet drug therapy
- NICE clinical guideline for management of AF in primary and secondary care
- CHD NSF chapter 8

Prognosis

- Haemodynamic changes from rapid / irregular heart beat
- Thrombo-embolic complications from pro-thrombotic state associated with the arrhythmia
- Marker of other conditions
- OR of death associated with AF
  - 1.5 for men
  - 1.9 for women

Prevalence of AF by age in a General Practice population



Lip et al BMJ 1996;312:175-178

Framingham; Risk factors for AF

- Increasing age
- Diabetes
- Hypertension
- Valve disease

- Associated with, or complicated by;
  - Congestive cardiac failure
  - Stroke

Table 1.2 Common cardiac and non-cardiac causes of AF

Cardiac causes of AF	Non-cardiac causes of AF
Common cardiac causes: ischaemic heart disease rheumatic heart disease hypertension sick sinus syndrome pre-excitation syndromes (eg Wolff–Parkinson–White).	Acute infections, especially pneumonia
	Electrolyte depletion
	Lung carcinoma
	Other intrathoracic pathology (eg pleural effusion)
Less common cardiac causes: cardiomyopathy or heart muscle disease pericardial disease (including effusion and constrictive pericarditis) atrial septal defect atrial myxoma.	Pulmonary embolism
	Thyrotoxicosis

Classification of AF

Terminology	Clinical features	Pattern
Initial event (first detected episode)	Symptomatic Asymptomatic (first detected) Onset unknown (first detected)	May or may not recur
Paroxysmal	Spontaneous termination < 7 days and most often < 48 hours	Recurrent
Persistent	Not self terminating Lasting > 7 days or prior cardioversion	Recurrent
Permanent (ÕAcepted)	Not terminated Terminated but relapsed No cardioversion attempted	Established

Issues in Primary Care

- Detection
- Assessment and investigation
- Management

Symptomatic presentation

- Patients with any of the following symptoms
  - Breathlessness / dyspnoea
  - Palpitations
  - Syncope / dizziness
  - Chest discomfort
  - Stroke / TIA
  - Heart failure

Asymptomatic

- During annual review as part of chronic disease management
  - Hypertension
  - Diabetes
  - Coronary heart disease
  - Cerebrovascular disease
  - Peripheral arterial disease
- When BP is measured

Diagnostic accuracy of pulse palpation to detect AF

	Method 1	Method 2	Method 3
Sensitivity	91 (82 to 97)	72 (59 to 82)	54 (41 to 66)
Specificity	74 (72 to 77)	94 (93 to 96)	98 (97 to 99)
PPV	19 (15 to 23)	44 (35 to 54)	61 (47 to 73)
NPV	99 (98 to 100)	98 (97 to 99)	97 (96 to 98)

Pulse palpation for minimum 20 seconds in a population aged > 65 years

Method 1; any pulse irregularity

Method 2; frequent or continuous irregularities

Method 3; only continuous irregularities

Morgan et al JRCGP 2002;52:373

Diagnosis of AF

- Pulse palpation for 20 seconds
- A 12 lead ECG should be recorded in all patients, whether symptomatic or asymptomatic, in whom AF is suspected because an irregular pulse has been detected

Issues in Primary Care

- Detection
- **Assessment and investigation**
- Management

Assessment of patients with AF

- Initial assessment to determine if emergency admission is appropriate
  - Acutely unwell
  - Haemodynamically unstable
  - Other co-morbidity requiring admission
  - Eligible for early cardioversion
  - Acute stroke / TIA
- If clinically stable
  - Pulse, BP, clinical symptoms and signs
  - Co-morbidity and current treatment

Investigation in patients with new presentation AF

- Laboratory
  - Full blood count
  - Clotting (if anti-coagulation being considered)
  - Electrolytes and renal function
  - Liver function tests
  - Thyroid function tests
  - Glucose
- Chest X Ray if abnormality suspected clinically
- Transthoracic echocardiography in selected patients

Recommendations for echo

- Baseline echo is important for long-term management, such as younger patients
- Rhythm-control strategy that includes cardioversion is being considered
- High risk or a suspicion of underlying structural/functional heart disease (eg HF, heart murmur)
- If refinement of clinical risk stratification for anti-thrombotic therapy is needed

Echo is not recommended

- Solely for the purpose of further stroke risk stratification in patients with AF for whom the need to initiate anticoagulation therapy has already been agreed on appropriate clinical criteria

Issues in Primary Care

- Detection
- Assessment and investigation
- **Management**

Management of patients with AF

- Initial assessment
- Identify and manage any precipitating causes
- Achieve adequate rate control
- Discuss and initiate appropriate thrombo-embolic prophylaxis
- Identify whether for long term rate control or rhythm control strategy
- Consider need for referral
- Arrange appropriate follow up & finalise if paroxysmal, persistent or permanent AF

Rate control

- Standard beta blockers or rate limiting CCB are first line in all patients
- If adequate rate control is not achieved with beta blockers or rate limiting CCB, these may be combined with digoxin
- Digoxin should only be considered as monotherapy in predominantly sedentary patients

- Beta blocker and diltiazem combined is not in the NICE AF GL; may be recommended in specialist care

Rate control

- Target heart rate < 100 at rest, < 130 on moderate exercise
- Choice of beta blocker eg
  - Atenolol or bisoprolol
  - Metoprolol (shorter duration of action)
- Rate limiting CCB
  - Diltiazem
  - Verapamil

Thrombo-embolic/ stroke prophylaxis

- Risk factors
  - Previous stroke or TIA
  - Being older (aged over 75)
  - Structural heart disease (eg valve disease, LVSD, HCM)
  - Hypertension
  - Previous MI (LVSD)
  - Diabetes
  - Atherothrombotic vascular disease
  - Heart failure
- Other risk factors
  - Thyrotoxicosis, patients with pacemakers, dilated LA

Patients with paroxysmal, persistent, or permanent AF

Determine stroke / thrombo-embolic risk

High risk

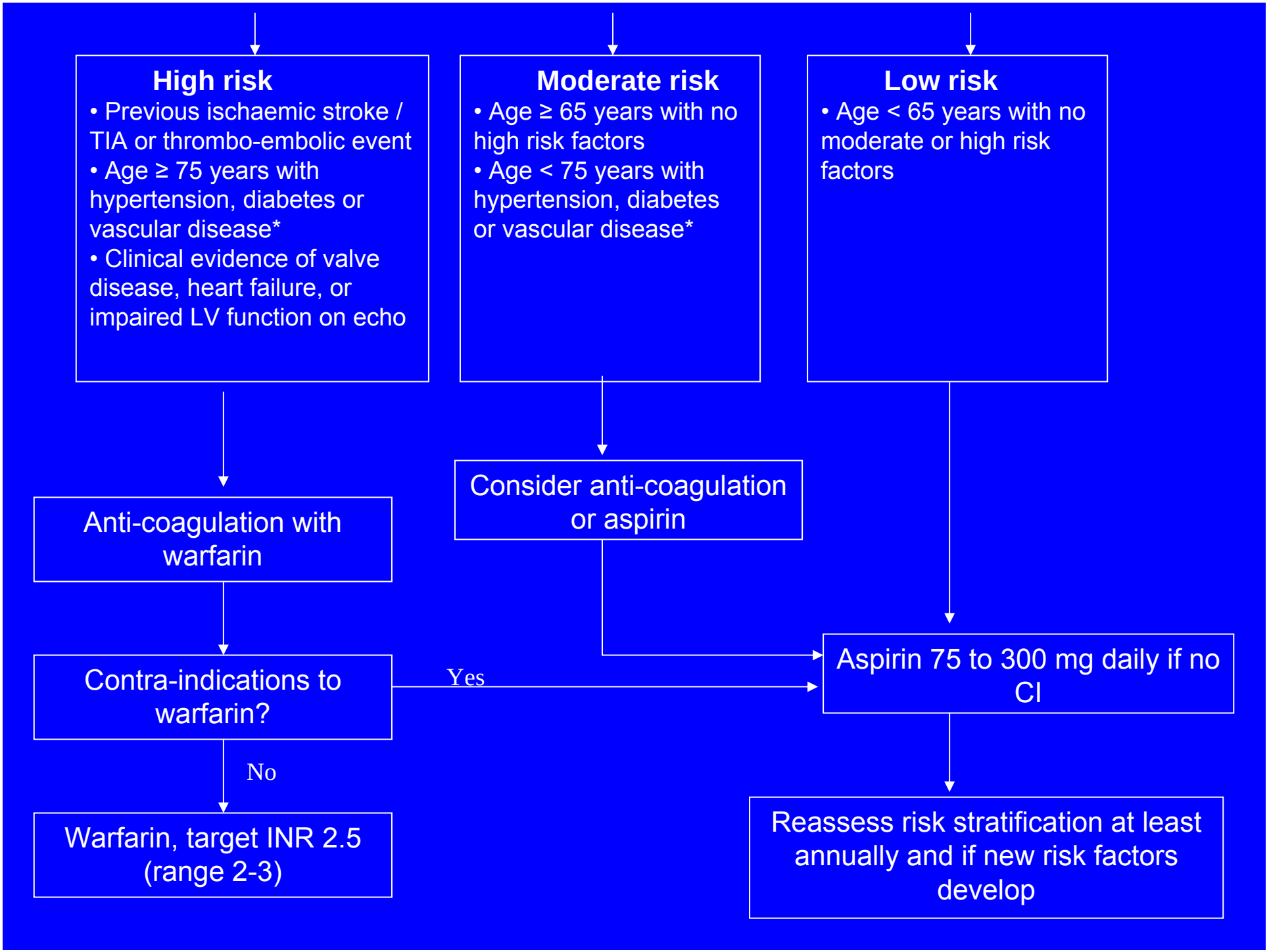
- Previous ischaemic stroke / TIA or thrombo-embolic event
- Age ≥ 75 years with hypertension, diabetes or vascular disease*
- Clinical evidence of valve disease, heart failure, or impaired LV function on echocardiography

Moderate risk

- Age ≥ 65 years with no high risk factors
- Age < 75 years with hypertension, diabetes or vascular disease*

Low risk

- Age < 65 years with no moderate or high risk factors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Moderate risk
• Age ≥ 65 years with no high risk factors
• Age < 75 years with hypertension, diabetes or vascular disease*
Low risk
• Age < 65 years with no moderate or high risk factors
Anti-coagulation with warfarin
Consider anti-coagulation or aspirin
Contra-indications to warfarin?
Yes
No
Aspirin 75 to 300 mg daily if no CI
Warfarin, target INR 2.5 (range 2-3)
Reassess risk stratification at least annually and if new risk factors develop

Risk of stroke in patients with AF, stratified by risk, with and without anti-thrombotic prophylaxis. Values are % per patient per year

Risk	**No prophylaxis**	**Aspirin**	**Warfarin**
High Previous stroke or TIA Age ³ 75 years with other clinical risk factors*	 12% 8%	 10% 4-5%	 4-5% 1-2%
Moderate Age < 65 years with other clinical risk factors* Age 65-74 Age ³ 75 years with no clinical risk factors*	4%	1-2%	1-2%
Low Age < 65 years with no clinical risk factors	1%	<1%	<1%

* Such as diabetes and hypertension
The highest risk of stroke (annual risk 12%) is in people with previous TIA or stroke. Warfarin is more effective in absolute terms as secondary prophylaxis than as primary prophylaxis, and also seems more effective than aspirin. In addition to a history of thromboembolism, other independent risk factors for thromboembolism are increasing age (especially age > 75 years), diabetes, and history of hypertension.

Lip GYH, Lowe GDO . Antinthrombotic treatment for atrial fibrillation. BMJ 1996;312:45-49

Other factors which effect choice of agent

- The risk or minor or major bleeding
- The inconvenience of dosing adjustments and regular blood tests to monitor INR levels
- Dietary restrictions
- Under-appreciation or lack of knowledge regarding the risk of stroke, or poor adherence to the treatment regimen

Starting warfarin in AF

Discuss and agree warfarin is appropriate for thrombo-embolic prophylaxis

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Confirm there are no contra-indications to warfarin (if unsure seek specialist advice)

- Recent GI Bleed
- Impaired renal or hepatic function
- Cerebral bleed
- Bleeding Diathesis
- Recurrent Falls
- NSAIDS
- Alcohol excess
- Poor Compliance
- Uncontrolled Hypertension

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Ensure baseline blood tests have been done and results seen

- FBC
- U+E
- Coagulation Screen
- LFT

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Blood results satisfactory

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- Arrange monitoring and provide information
- Book into INR clinic in 1 week
- Give educational leaflet and yellow book

Prescribe

- Warfarin 1mg daily in the 7 days preceding the INR Clinic
- Continue aspirin until INR ≥ 1.8 (tell the patient, make note in the yellow book)
- Stop other anti-platelets (and aspirin as above) (unless special reasons)

Arrange follow up; minimum recommended

- 2 months after initiation of warfarin
- Annually thereafter

Patients intolerant / allergic to aspirin

- If GI intolerance, consider treatment with aspirin and PPI
- If allergic/ cannot tolerate aspirin, consider warfarin
- Clopidogrel;
  - not licensed for TE propylaxis in AF
  - could be considered after appropriate discussion and explanation to the patient, if risk of bleeding with warfarin is high and or patient does not wish warfarin

Rate vs rhythm?

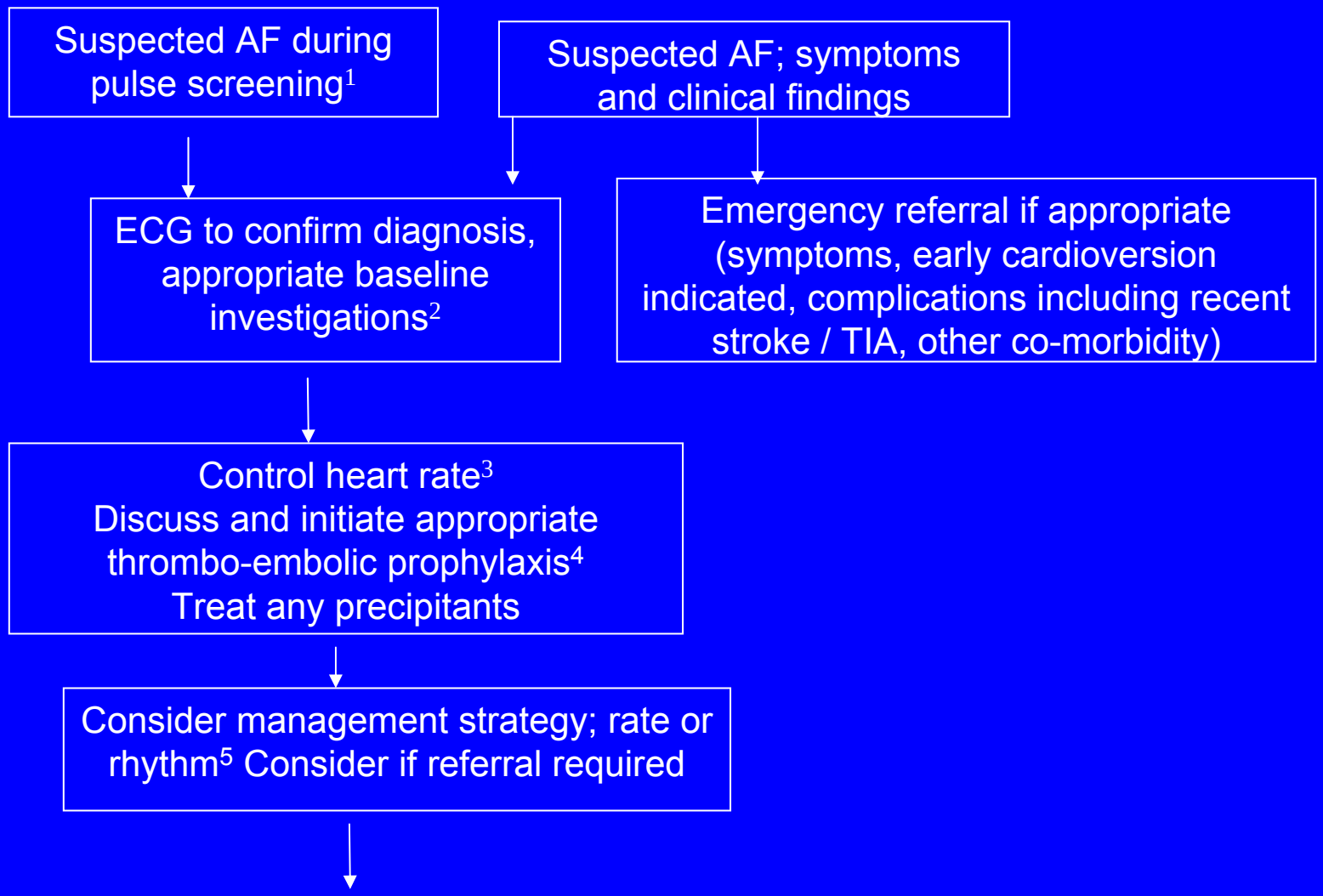
- Not mutually exclusive
- Consider co-morbidity which may influence the choice
- Discuss advantages and disadvantages with the patient

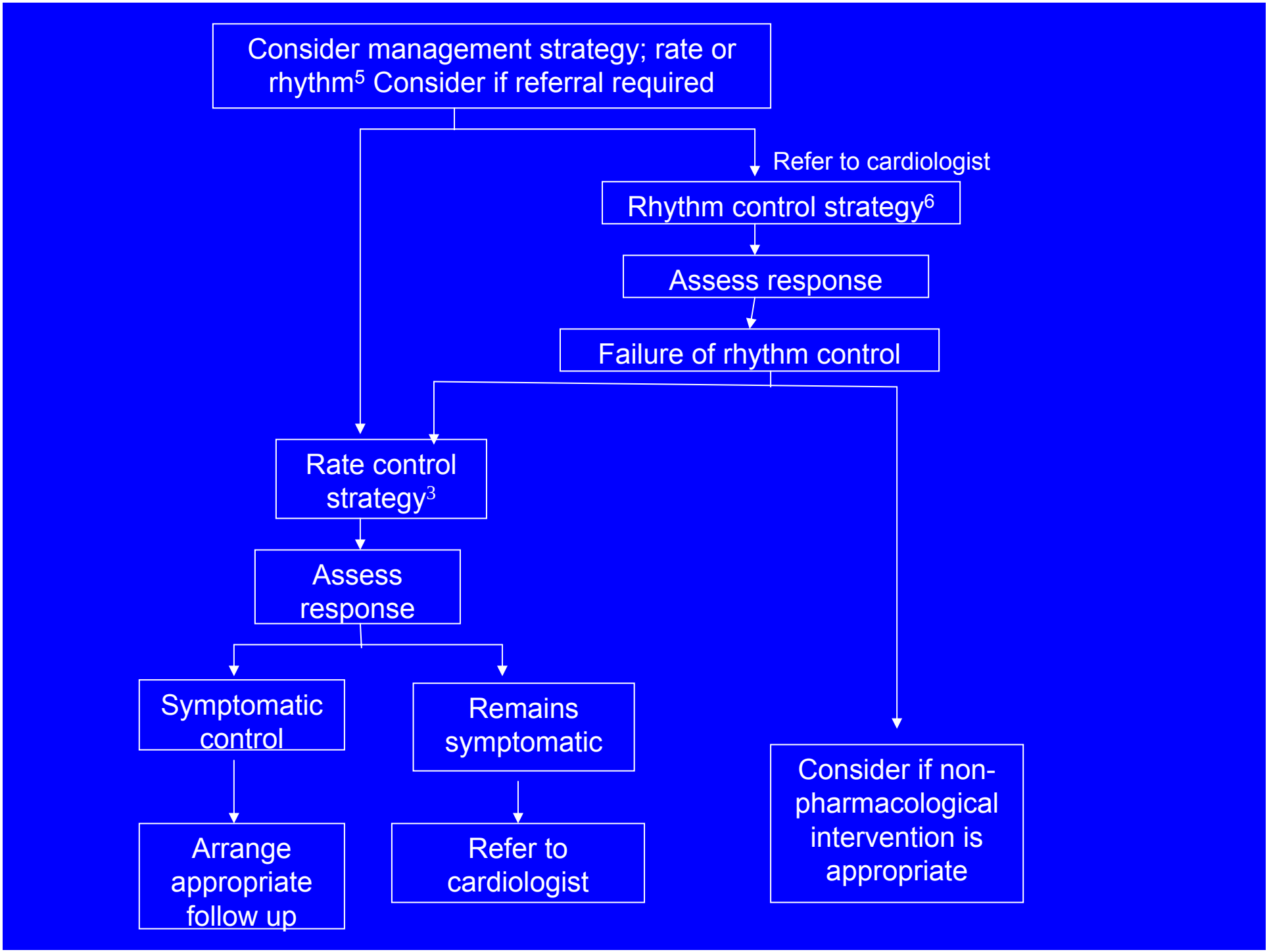
Consider rate as the preferred option

- Aged over 65 years
- With coronary artery disease
- With contra-indications to anti-arrhythmic drugs
- Unsuitable for cardioversion, including those with;
  - contra-indications to anti-coagulation
  - cardioversion unlikely to be successful
  - multiple failed attempts at cardioversion and or relapses
  - an ongoing, but reversible cause for AF (eg thyrotoxicosis) until this is corrected

Consider rhythm as the preferred option

- Patients who are symptomatic despite adequate rate control
- Younger patients
- Patients presenting for the first time with lone AF
- Patients with AF secondary to a treated/corrected precipitant
- Patients with congestive heart failure


Suspected AF during pulse screening[1]
Suspected AF; symptoms and clinical findings
ECG to confirm diagnosis, appropriate baseline investigations[2]
Emergency referral if appropriate (symptoms, early cardioversion indicated, complications including recent stroke / TIA, other co-morbidity)
Control heart rate[3]
Discuss and initiate appropriate thrombo-embolic prophylaxis[4]
Treat any precipitants
Consider management strategy; rate or rhythm[5] Consider if referral required


Consider management strategy; rate or rhythm[5] Consider if referral required
Refer to cardiologist
Rhythm control strategy[6]
Assess response
Failure of rhythm control
Rate control strategy[3]
Assess response
Symptomatic control
Remains symptomatic
Arrange appropriate follow up
Refer to cardiologist
Consider if non-pharmacological intervention is appropriate

Follow up

- All patients with AF need appropriate arrangements for follow up
  - Clinical status
  - Review of thrombo-embolic risk and prophylaxis
  - Monitoring of drug treatment
    - Warfarin
    - Anti-arrhthymic drugs
  - Post cardioversion; 6 month review if discharged from secondary care

Annual review in patients with AF treated with warfarin 1

- Frequent falls (4+ in the last year)
- Polypharmacy (4+ drugs)
  - recognised that in some patients the benefits of warfarin will still outweigh the risks
- Problems with compliance
  - Unstable INRs and frequent warfarin dose changes may indicate compliance problems

Annual review in patients with AF treated with warfarin 2

- Concerns that cognitive impairment is causing problems with taking medication
  - Recognised that some patients with cognitive impairment are still able to take warfarin, some have carer support.
- Uncontrolled hypertension
- Any new bleeding events
- Any new drugs which interact, including OTC drugs
- Excess alcohol which is effecting INR control

Anti-arrhythmic drug monitoring

- Amiodarone
  - TFT, LFT every 6 months
  - U&E if other indications
  - Annual ECG
  - Other
  - Indications still apply
- Sotalol
  - U&E if other indications
  - Annual ECG
  - Indications still apply
- Flecainide / propafenone

Summary

- AF management in primary care
- Not discussed
  - PAF
  - Drugs for rhythm control
  - Cardioversion; electrical and pharmacological
  - Non-pharmacological interventions