Managing Atrial Fibrillation in Primary care

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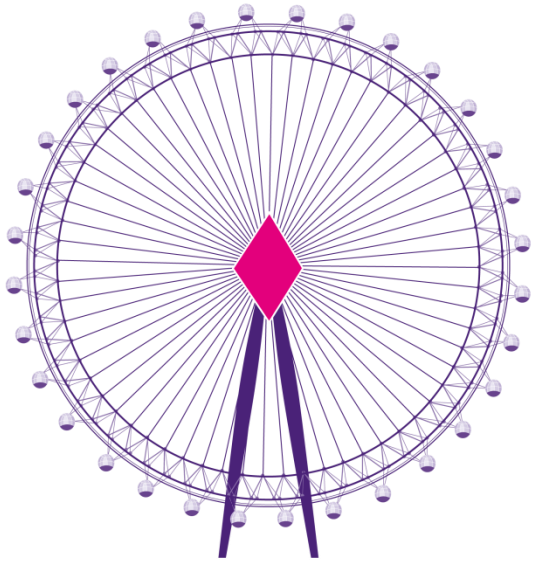
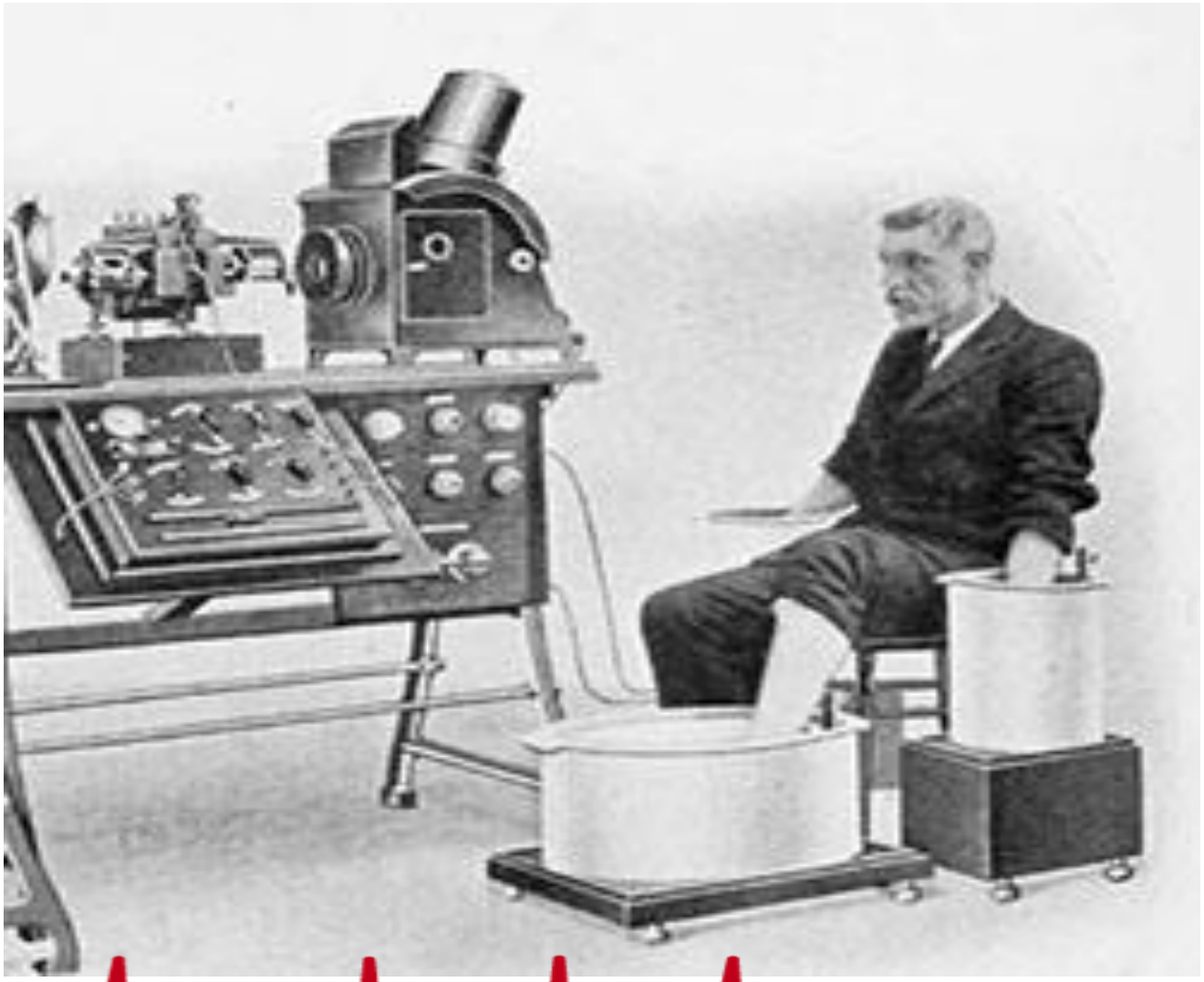
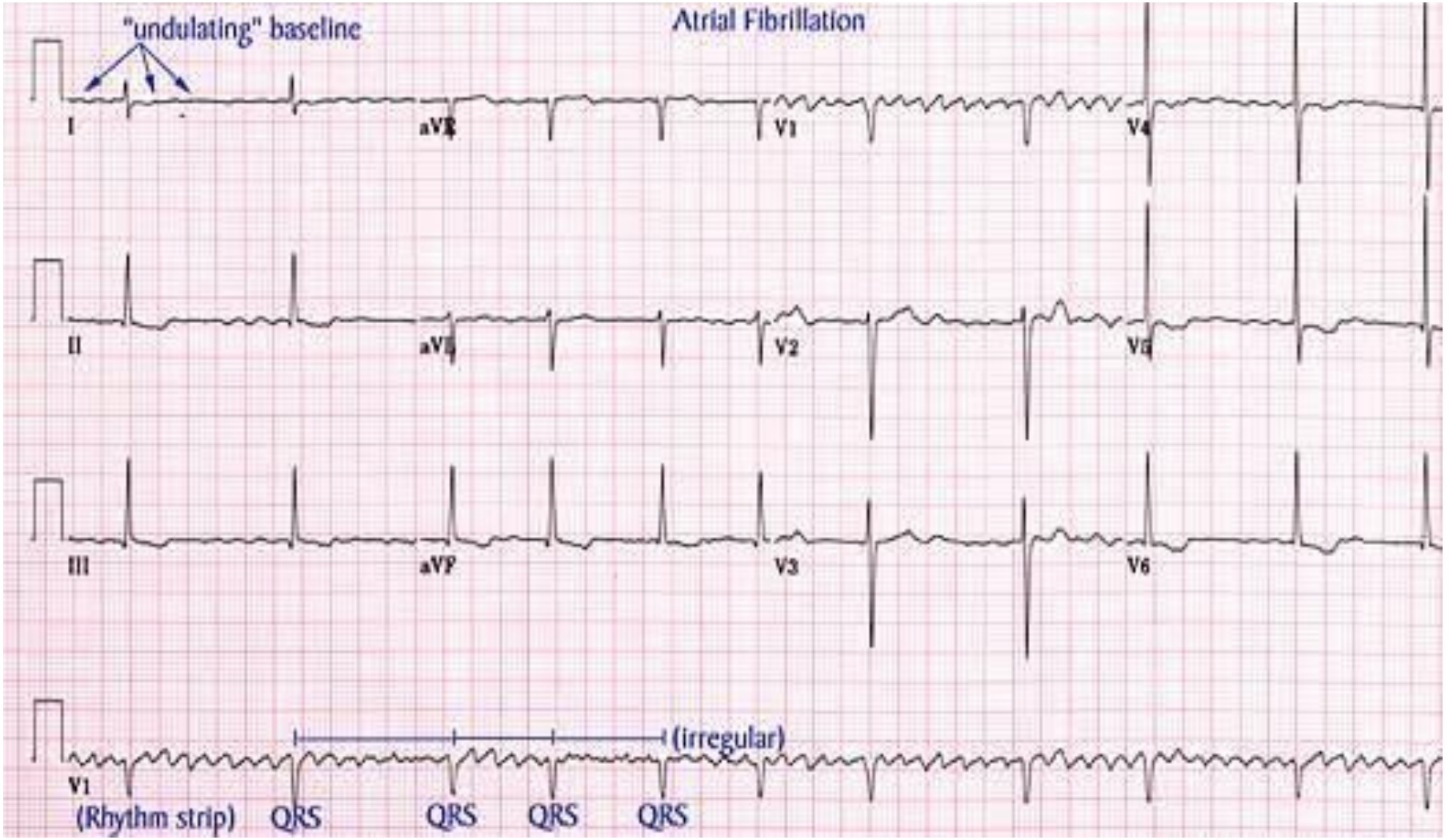


……Atrial Fibrillation

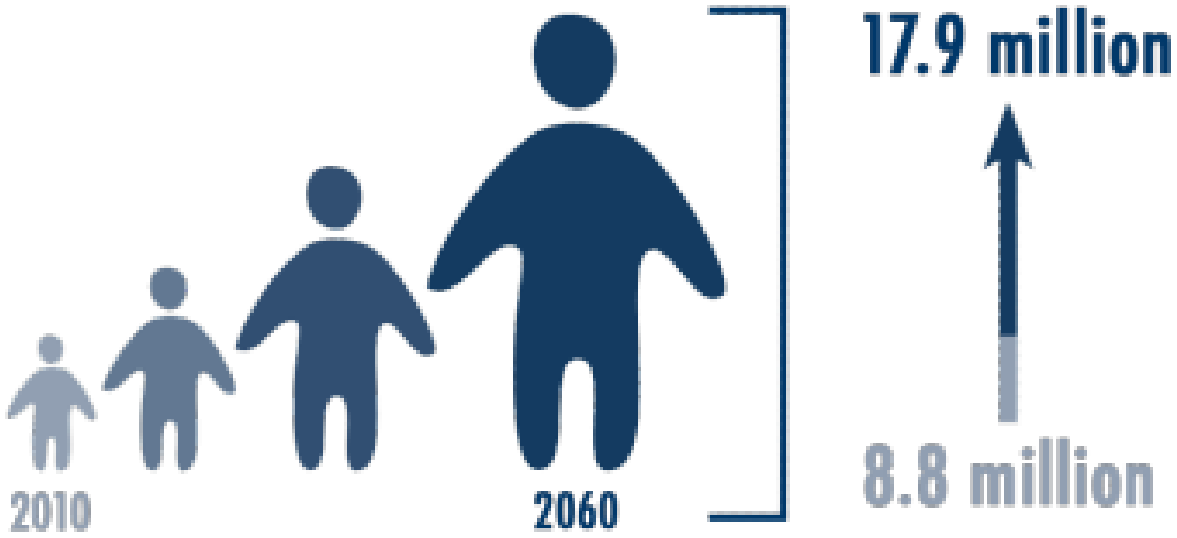


PULSUS INAEQUALIS ET IRREGULARIS -EINTHOVEN 1904

Atrial Fibrillation

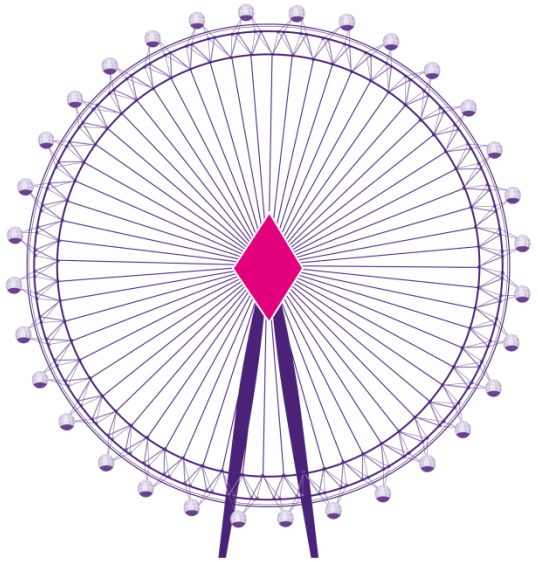


Why ?



AF prevalence among adults over 55 in the EU is **expected to double from 8.8 to 17.9 million**, between 2010 and 2060.

Why anticoagulate AF patients ?



Clinical Background

- Cardiac Arrhythmia affects over 700,000 people in England (circa 1.5 % of population)
- Most common cardiac arrhythmia is AF (incidence increases with age)
- Associated with up to a five-fold increase in the risk of stroke.
- National data indicates management of AF sub-optimal
- Improving management identified as priority nationally
- Key to optimal management is determining anti-coagulant need
- NICE Guidance on AF (CG180 published June 2014)

...don't wait to anticoagulate

In the next 4 hours

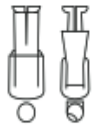
10 people

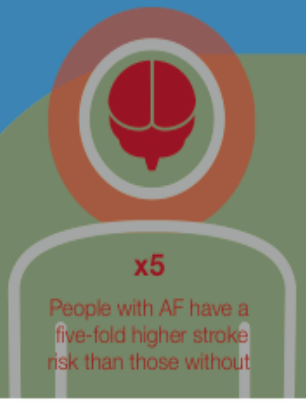
with atrial fibrillation (AF) will suffer a stroke in the UK

3 will go home

5 will end up needing residential care for the rest of their lives

2 will die





x5

People with AF have a five-fold higher stroke risk than those without

Every year

7,000 strokes

2,000 premature deaths

could be avoided through effective detection and protection with anticoagulant drugs

250,000 people are believed to be undiagnosed with AF currently in the UK

800,000 people are currently diagnosed with AF

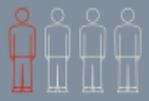
Prevalence of AF increases with age...

in UK population **1.6%**

aged 50-59 **0.5%**

aged 80-90 **9%**

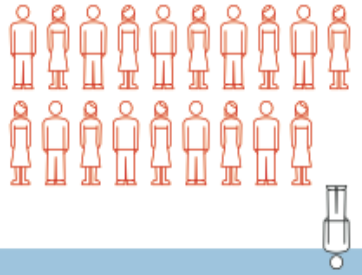
From the **age of 55** the likelyhood of developing AF is...



1 in 4

1 in 5

Each year approximately **1** in **20** people with AF will have a stroke because they are not anticoagulated



Mortality rate from stroke for people with AF is double that of people with normal heart rhythm

Each AF related stroke cost the NHS

£12,000 in the first year alone

15% of all strokes are caused by AF

Nearly 50% of people with AF are not effectively protected against stroke because

...they do not have an AF diagnosis.

...are on aspirin or are not on anticoagulation at all.

...labile INR.

230,000 people with AF still at risk of stroke because treated with aspirin monotherapy instead of anticoagulants

Anticoagulation is

3 times more effective at preventing AF related stroke than aspirin

An estimated **3 people** from each GP practice in the West of England AHSN will suffer an AF related stroke per year

West of England Academic Health Science Network

Contact **West of England AHSN** for more information

www.weahsn.net | 0117 900 2604

Summary
Stroke is a frequent complication of AF

- Stroke is the leading complication of AF
- Patients with AF have a five-fold higher stroke risk than those without AF[1]
- AF doubles the risk of stroke when adjusted for other risk factors[2]
- Without preventive treatment, each year approximately 1 in 20 patients (5%) with AF will have a stroke[3]
  - When transient ischaemic attacks and clinically 'silent' strokes are considered, the rate of brain ischaemia associated with non-valvular AF exceeds 7% per year[4]
- It is estimated that 15% of all strokes are caused by AF[5] and that 12,500 strokes per year in England are directly attributable to AF[6]

1. NICE clinical guideline 36.June 2006. Available at http://www.nice.org.uk/guidance/CG36/?c=91497; accessed April 2010; **2**. ACC/AHA/ESC guidelines: Fuster V et al. Circulation 2006;114:e257–354 & Eur Heart J 2006;27:1979–2030; **3.** Atrial Fibrillation Investigators. Arch Intern Med 1994;154:1449–57; **4.** Carlson M. Medscape Cardiology. 2004;8; available at http://cme.medscape.com; accessed Feb 2010; **5.** Lip GYH, Lim HS. Lancet Neurol 2007;6:981-93; **6.** NHS Improvement. June 2009. Available at http://www.improvement.nhs.uk/heart/Portals/0/documents2009/AF_Commissioning_Guide_v2.pdf; accessed April 2010

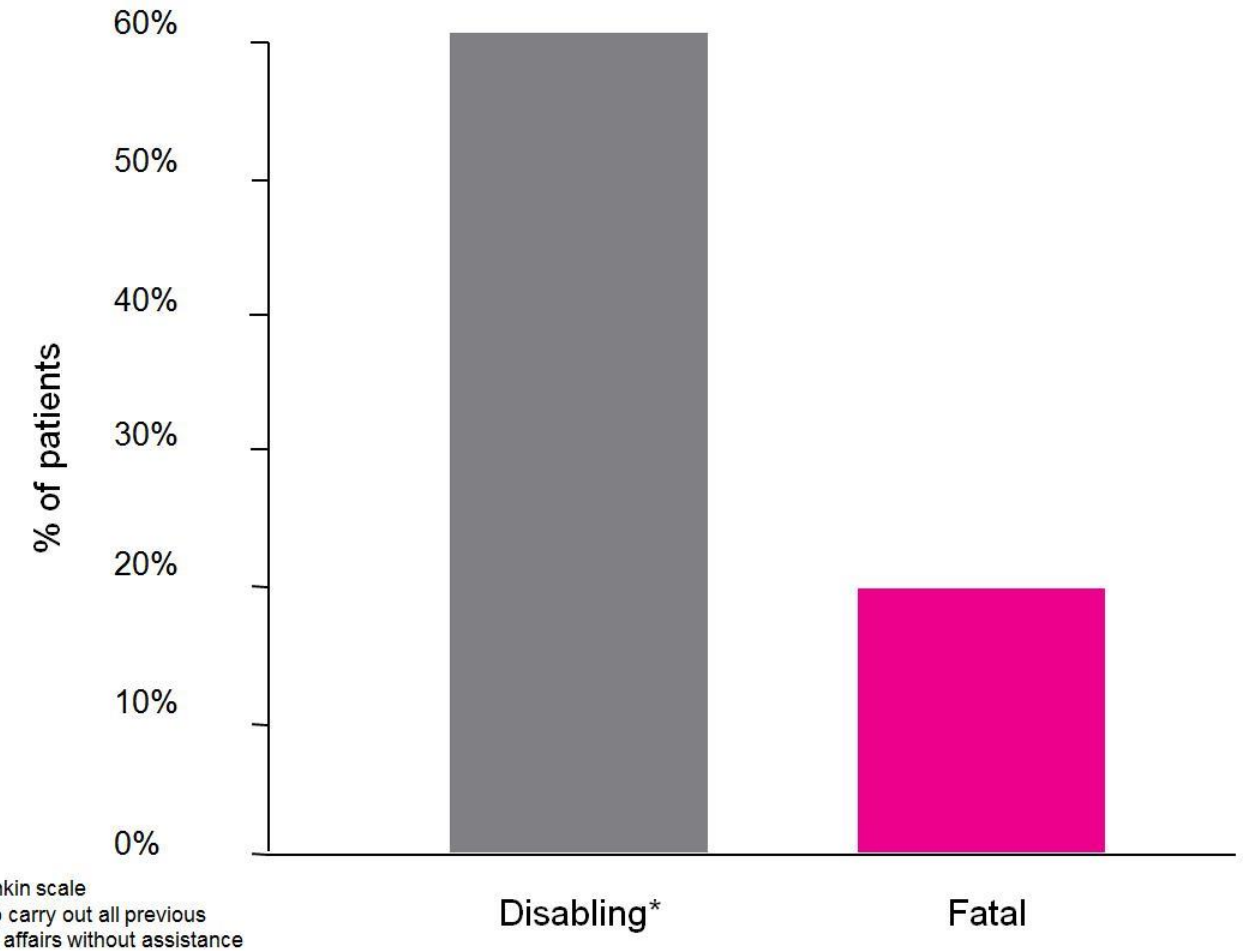
Summary
Stroke is a serious complication of AF

- Stroke in AF is associated with a heavy burden of morbidity and mortality
- AF stroke is usually more severe than stroke due to other causes[1]
- Compared with other stroke patients, those with AF are more likely to:
  - **Have cortical deficit (e.g. aphasia), severe limb weakness and diminished alertness, and be bedridden on admission[2]**
  - **Have longer in-hospital stay with a lower rate of discharge to their own home[3]**
- The mortality rate for patients with AF is double that in people with normal heart rhythm[4]

1. Savelieva I et al. Ann Med 2007;39:371–91; **2.** Dulli DA et al. Neuroepidemiology 2003;22:118–23; **3.** NICE clinical guideline 36.June 2006. Available at http://www.nice.org.uk/guidance/CG36/?c=91497; accessed April 2010; **4**. Benjamin EJ et al. Circulation 1998;98:946–52

Stroke severity in patients with AF[14]

Effect of first ischemic stroke in patients with AF (n=597)



* Disabling defined as Modified Rankin scale score ≥2 - slight disability; unable to carry out all previous activities, but able to look after own affairs without assistance

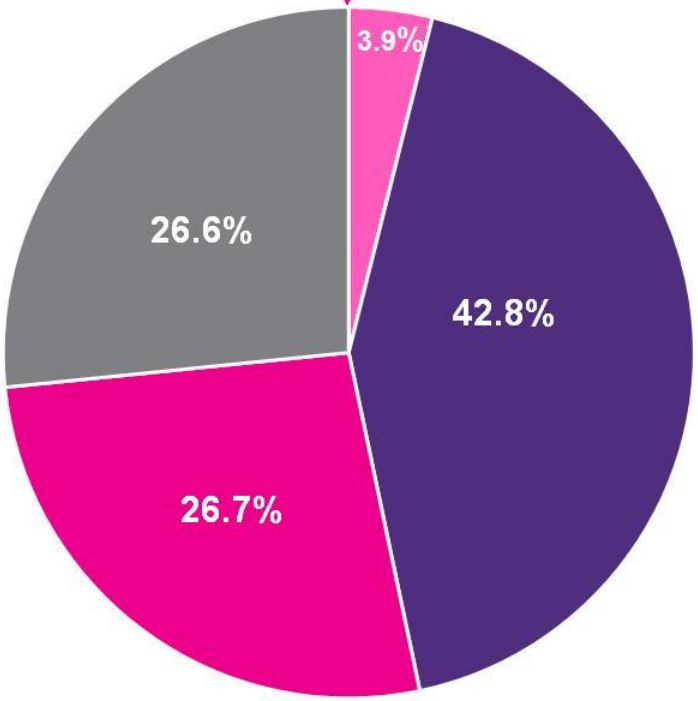
L.GB.MKT.01.2016.14581p
March 2016

14. Gladstone DJ *et al. Stroke* 2009; 40:235-240

…but still less than 50% of AF patients were anticoagulated at time of stroke[23]

July-Sept 2015
England, Wales, Northern Ireland
19,971 stroke admissions

3,935 in AF (20%)



OAC = Oral anticoagulant
AP = Antiplatelet

23. SSNAP July-Sept 2015 Public Report, January 2016

Conditions frequently associated with AF[1,2]

- **Cardiovascular conditions**
  - Hypertension
  - Ischaemic heart disease/cardiomyopathy
  - Heart failure
  - Valvular disease
- **Metabolic conditions**
  - Obesity
  - Diabetes mellitus
  - Metabolic syndrome
  - Hyperthyroidism/thyrotoxicosis
- **Other**
  - Obstructive sleep apnoea
  - Carcinoma of the bronchus
  - Pneumonia
  - Cardiopulmonary surgery

1. Fuster V *et al*. *J Am Coll Cardiol* 2006;48:854–906; 2. Wattigney WA *et al*. *Circulation* 2003;108:711–716

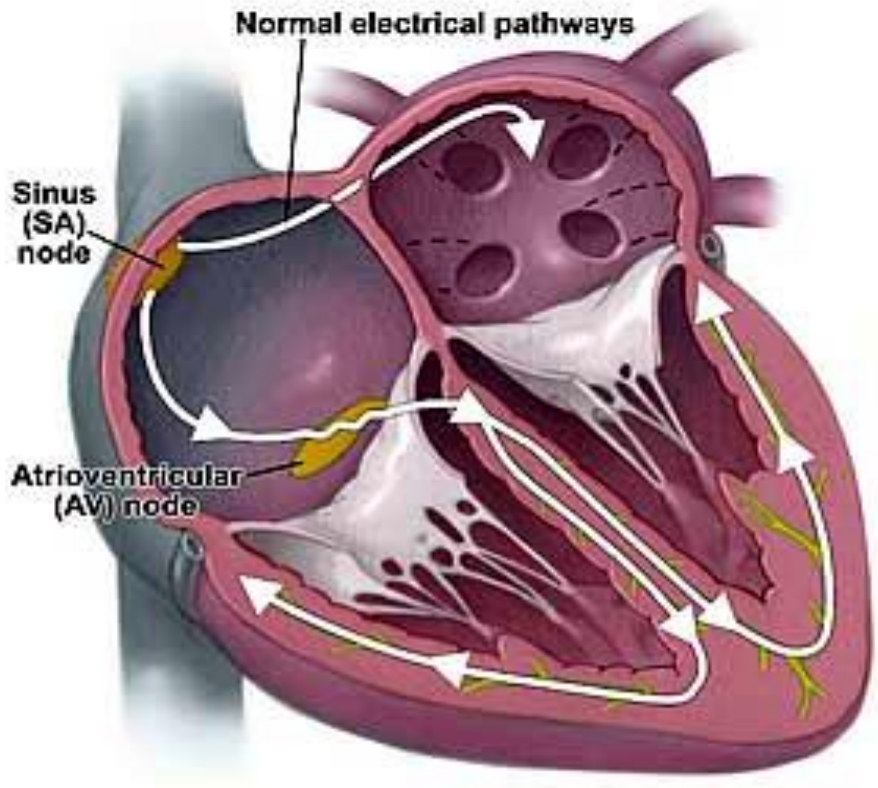
Symptoms of AF

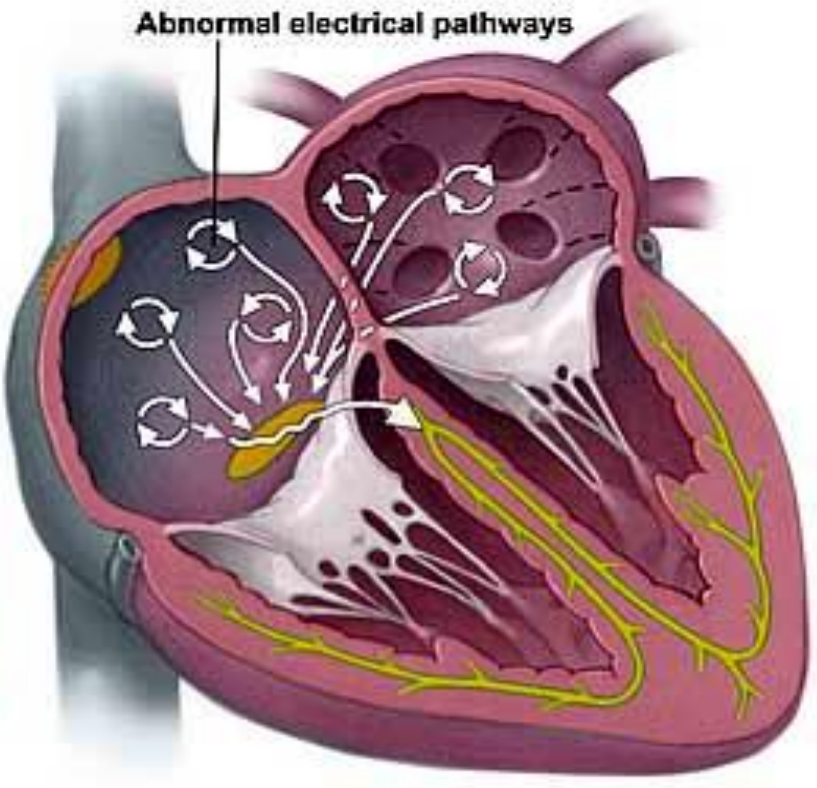
- Typical symptoms of AF include:[1]
  - *Palpitations (a sensation of rapid irregular heartbeat)*
  - *Fatigue*
  - Chest pain
  - Dizziness/light headedness
  - Syncope
  - *Dyspnoea*

- AF may also be asymptomatic
  - Approximately 38% of patients with AF are asymptomatic[2]

1. Fuster V *et al*. *Circulation* 2006;114:700–752; 2. Israel CW *et al*. *J Am Coll Cardiol* 2004;43:47–52

Atrial fibrillation (AF)



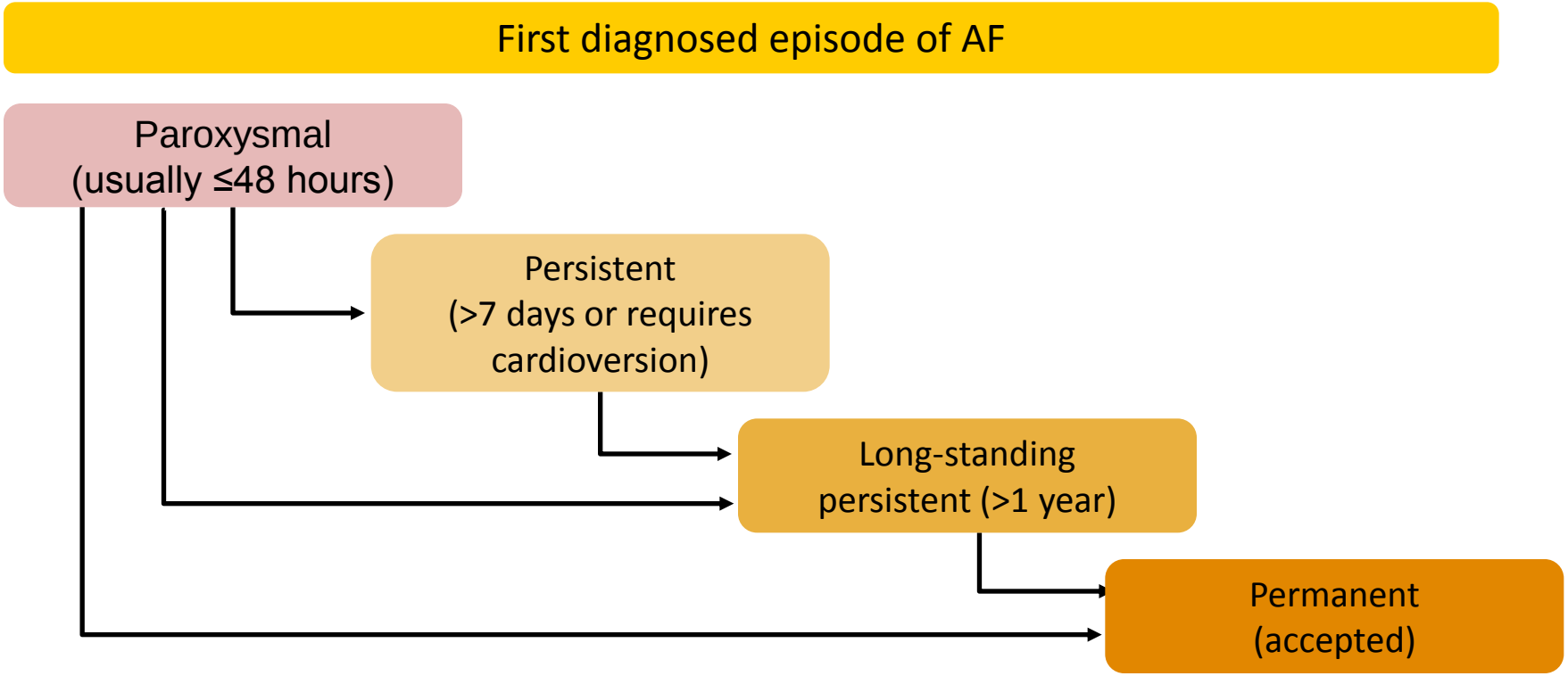


Defining atrial fibrillation,,,and haemodynamic results

- Loss of coordinated atrial activation and atrial mechanical function
- Results from multiple re-entrant electrical waves moving randomly throughout the atria
- ECG (standard 12 lead or extended monitoring) essential for diagnosis showing replacement of P waves with fibrillatory waves with atrial rates up to 500/min
- Block in AV node results in reduced irregular ventricular response with rate usually < 150/min
- Loss Atrial kick and ventricular filling with 20-30% loss output
- Cardiac failure with > heart rate
- In elderly commonly no symptoms

Progression of AF

Progression of AF is thought to be driven by structural changes in the atria, including electrical, contractile changes, known as *atrial remodelling*[1]



1. Camm AJ *et al*. *Eur Heart J* 2010;31:2369–2429

NICE Guidelines summary

- Assess and address thromboembolic risk at the earliest opportunity using CHADSVASC
- Consider anticoagulation in all patients with a CHADSVASC score of one or greater.
- Aspirin monotherapy should no longer be offered for stroke prevention
- Need to assess the quality of anticoagulation control in patients taking warfarin using TTR
- Increasingly important role of NOACs in stroke prevention
- Consider rate control as a first line strategy
- Personalised package of care to cover all aspects of AF including anticoagulation
- Annually review all patients with AF

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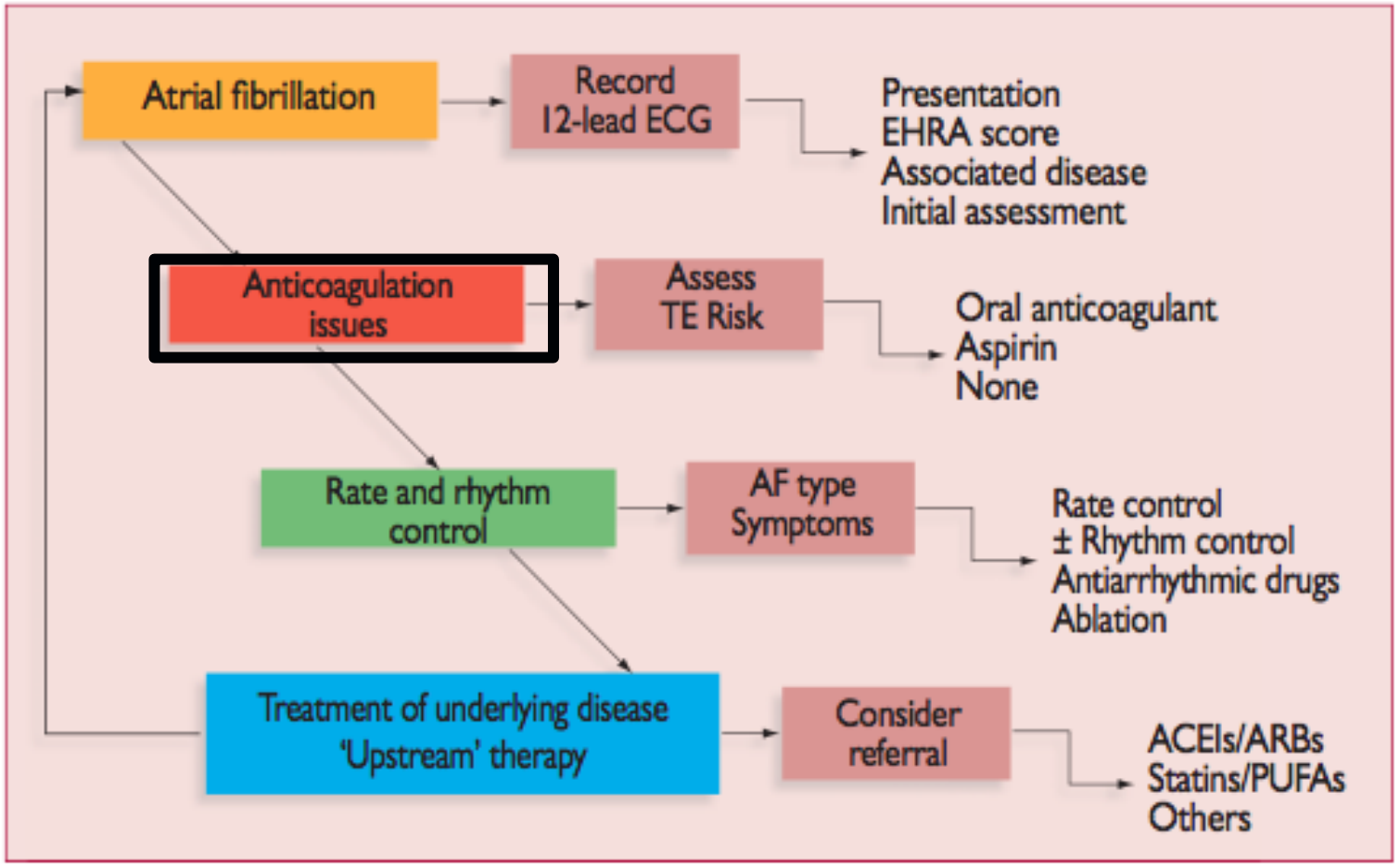
Management Cascade for patients with AF (EHRA)



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Stroke risk assessment with CHA_2DS_2-VASc

CHA_2DS_2-VASc criteria	Score
Congestive heart failure/ left ventricular dysfunction	1
Hypertension	1
Age ≥75 yrs	**2**
Diabetes mellitus	1
Stroke/transient ischaemic attack/TE	**2**
Vascular disease (prior myocardial infarction, peripheral artery disease or aortic plaque)	1
Age 65–74 yrs	1
Sex **c**ategory (i.e. female gender)	1

CHA_2DS_2-VASc total score	Rate of stroke/other TE (%/year)
0	0.78
1	2.01
2	3.71
3	5.92
4	9.27
5	15.26
6	19.74
7	21.50
8	22.38
9	23.64

CHADSVASC score 0 = truly low risk = 9% of AF popltn

NICE CG180 -Management of AF

Interventions to prevent stroke

- Do not offer stroke prevention therapy to people aged under 65 years with atrial fibrillation and no risk factors other than their sex (that is, very low risk of stroke equating to a *CHA2DS2-VASc score of 0 for men or 1 for women [new 2014]*

- Anticoagulation may be with apixaban, dabigatran etexilate, rivaroxaban or a vitamin K antagonist.

- Consider anticoagulation for men with a *CHA2DS2-VASc score of 1. Take the bleeding risk into account.* ***[new 2014]***

- Offer anticoagulation to people with a *CHA2DS2-VASc score of 2 or above, taking bleeding risk into account.* ***[new 2014]***

- Discuss the options for anticoagulation with the person and base the choice on their clinical features and preferences. **[new 2014]**

NICE CG180 - Management of AF
Risk of bleeding with anticoagulants

Use the HAS-BLED score…...

to assess the risk of bleeding in people who are starting or have started anticoagulation. Offer modification and monitoring of the following risk factors

- uncontrolled hypertension
- poor control of international normalised ratio (INR) ('labile INRs')
- concurrent medication, for example concomitant use of aspirin or a non-steroidal anti-inflammatory drug (NSAID)
- harmful alcohol consumption. **[new 2014]**

NICE CG180 - Management of AF
Risk of bleeding with anticoagulants

HAS-BLED bleeding risk score

Letter	Clinical characteristic[a]	Points awarded
H	Hypertension	1
A	Abnormal renal and liver function (1 point each)	1 or 2
S	Stroke	1
B	Bleeding	1
L	Labile INRs	1
E	Elderly (e.g. age >65 years)	1
D	Drugs or alcohol (1 point each)	1 or 2
		Maximum 9 points

- HTN > 160mmHg
- Cr ≥ 200µmol/L
- Bil ×2,AST ×3,cirrhosis
- INR<60% in range
- 8 alcoholic drinks
- NSAIDS/antiplatelet

HAS-BLED should be used to identify modifiable risk factors for bleeding
Score of ≥3 indicates need for regular clinical review
Patients with a higher HAS-BLED score also have a higher CHA2DS2-VASc score
There is net clinical benefit in anticoagulating CHA2DS2-VASc >0 whatever HAS-BLED score

Reference: guidelines for the management of AF. Taskforce for the management of AF for the European Society of Cardiology. European Heart Journal 2010. 31,2369-2429

HAS-BLED Score	1 year Bleeding risk	Bleeds/100 pt-years
0	0.9%	1.13
1	3.4%	1.02
2	4.1%	1.88
3	5.8%	3.72
4	8.9%	8.70
5	9.1%	12.50
6 – 9	Insufficient data	Insufficient data

Reference: guidelines for the management of AF. Taskforce for the management of AF for the European Society of Cardiology. European Heart Journal 2010. 31,2369-2429

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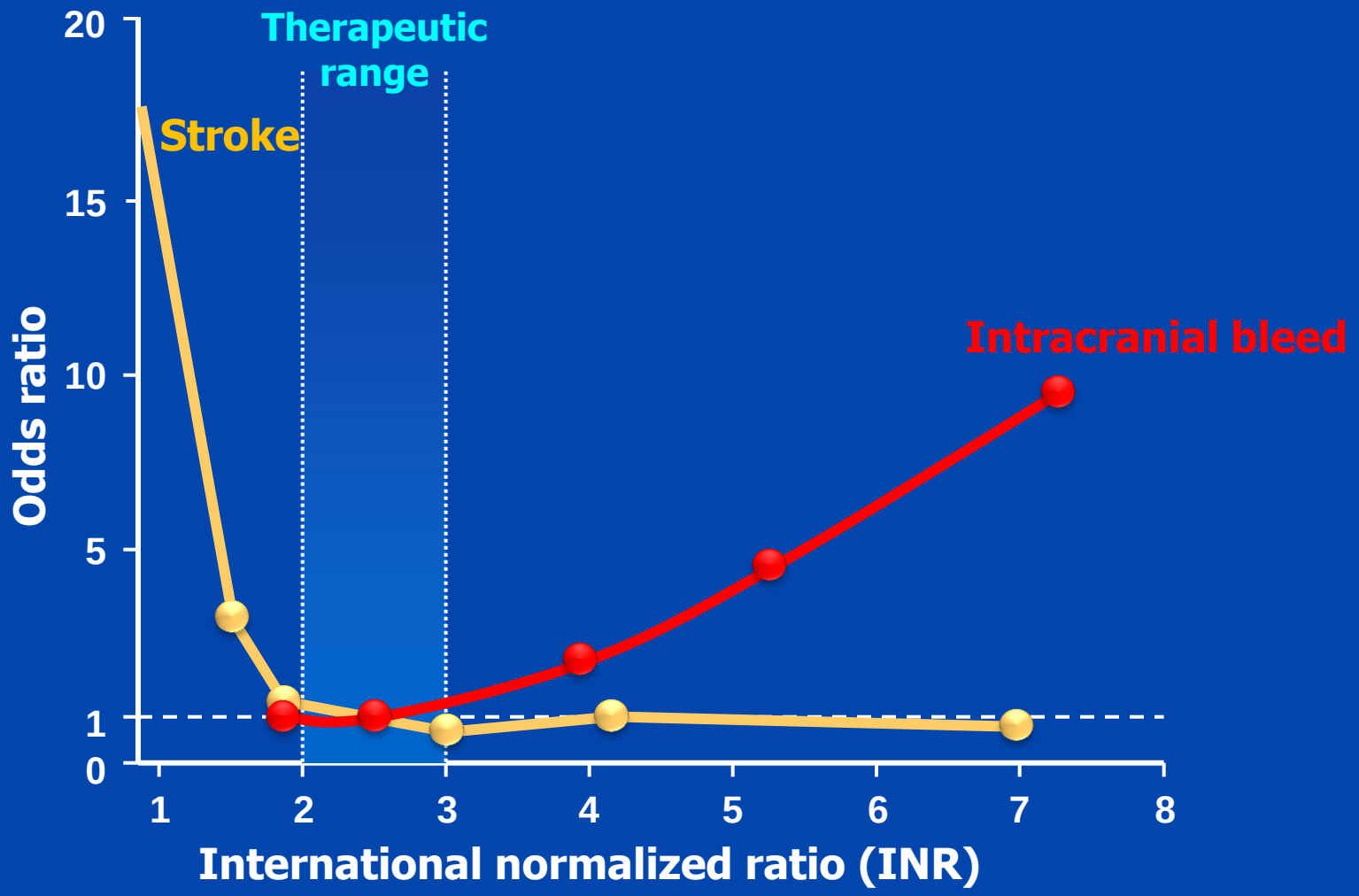
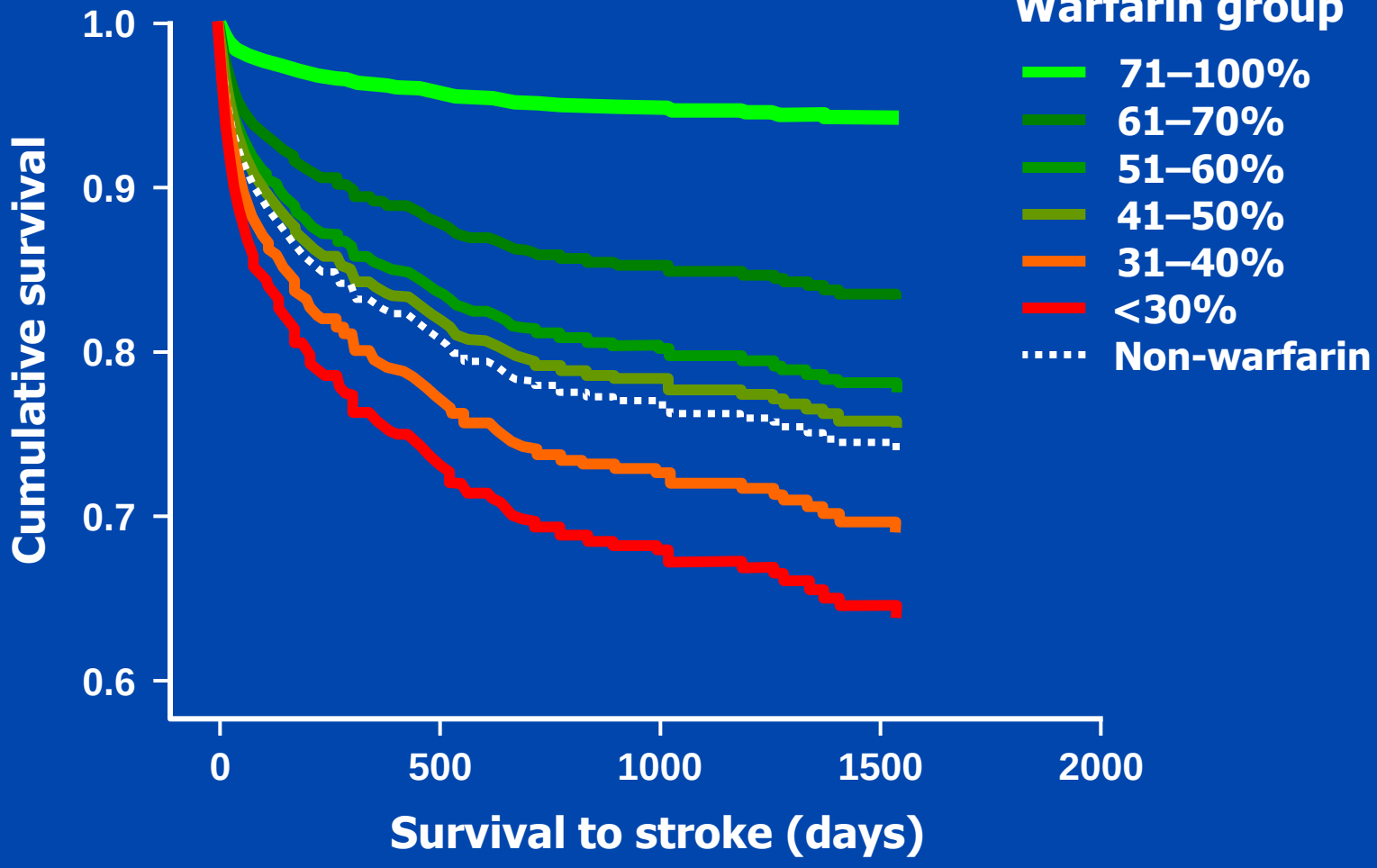
Warfarin and its challenging therapeutic window



ACC/AHA/ESC guidelines: Fuster V *et al. Circulation* 2006;114:e257–354

Why time in therapeutic range (TTR) matters



Morgan CL *et al. Thrombosis Research* 2009;124:37–41

NICE CG180 -Management of AF

Assessing anticoagulation control with warfarin (Vitamin K antagonists)

- Calculate the person's time in therapeutic range (TTR) at each visit. When calculating TTR:
- use a validated method of measurement such as the Rosendaal method for computer-assisted dosing or proportion of tests in range for manual dosing
- exclude measurements taken during the first 6 weeks of treatment
- calculate TTR over a maintenance period of at least 6 months.

[new 2014]

NICE CG180 -Management of AF

Assessing anticoagulation control with vitamin K antagonists

Reassess anticoagulation for a person with poor anticoagulation control shown by any of the following:

- Two INR values higher than 5 or one INR value higher than 8 within the past 6 months
- Two INR values less than 1.5 within the past 6 months
- TTR less than 65%. **[new 2014]**

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Persistent Atrial Fibrillation

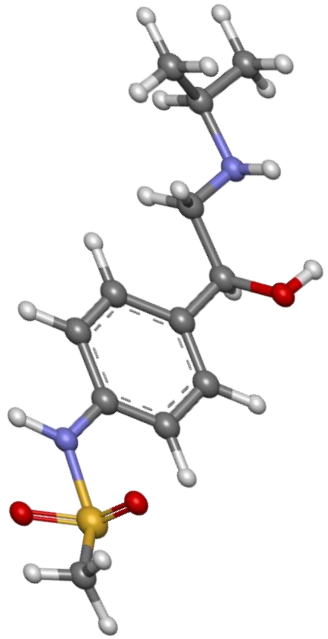
Two main treatment strategies;

- ***Rate control***
  - use of chronotropic drugs, electro-physiological interventions or ablation to maintain adequate ventricular response rate
- ***Rhythm control***
  - use of electrical or pharmacological cardioversion to restore sinus rhythm
  - Left atrial ablation

Rate and Rhythm Control

Assess and offer *rate control* as the *first line* strategy for all people with AF *[new 2014]*

- Initial monotherapy with standard β-blocker or rate-limiting CCB
- Digoxin monotherapy only for non-paroxysmal AF in sedentary patients *[new 2014]*
- If monotherapy does not control symptoms, combine 2 of:
  - β-blocker
  - Diltiazem
  - Digoxin *[new 2014]*
- Do not offer amiodarone for long term rate control *[new 2014]*



NICE AF Guideline June 2014

Reasons for rate control

- Avoid tachycardia induced cardiomyopathy[1]
- Improve symptoms and quality of life? [2]
- Improve exercise capacity?[2, 3]

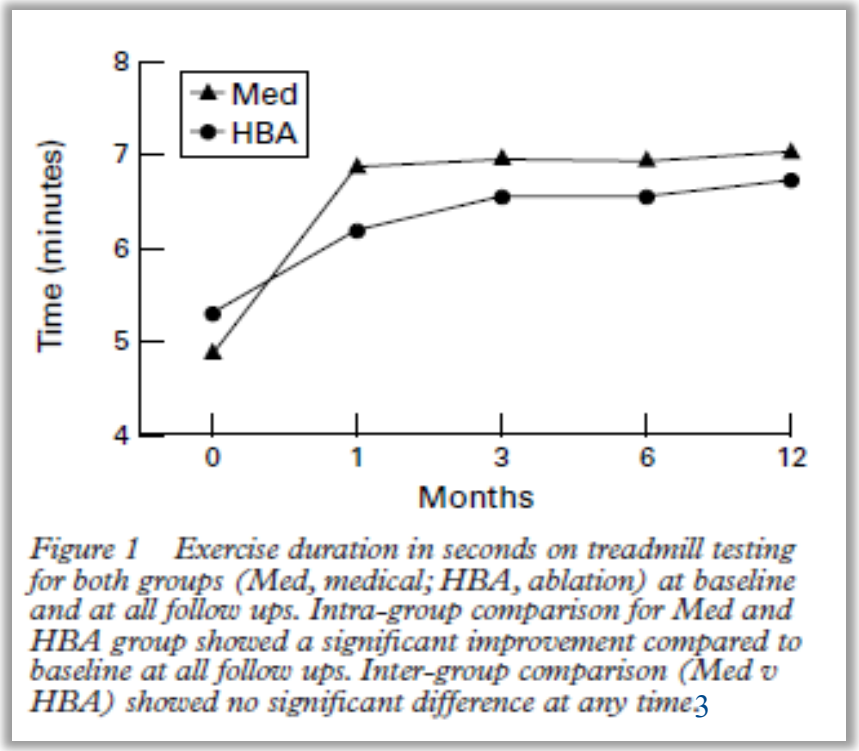
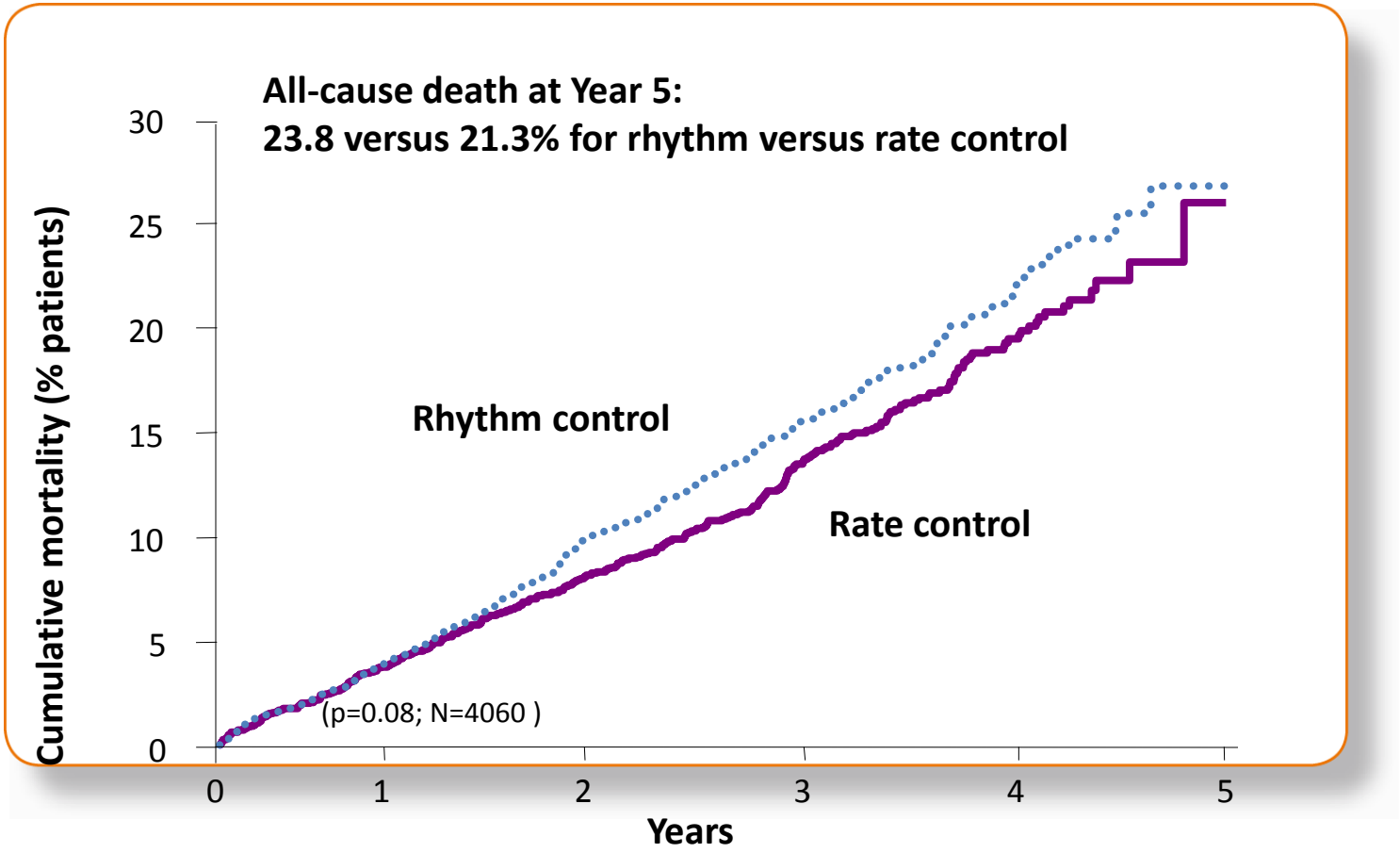


Figure 1 Exercise duration in seconds on treadmill testing for both groups (Med, medical; HBA, ablation) at baseline and at all follow ups. Intra-group comparison for Med and HBA group showed a significant improvement compared to baseline at all follow ups. Inter-group comparison (Med v HBA) showed no significant difference at any time[3]

[1] Umana E et al. Am J Med 2003; 114
[2] Nikolaidou T et al. PMJ 2009; 85
[3] Levy T et al. Heart 2001; 85

Rhythm- versus Rate-control Strategies in AFFIRM

AFFIRM showed no difference in mortality rates between rhythm- and rate-control strategies

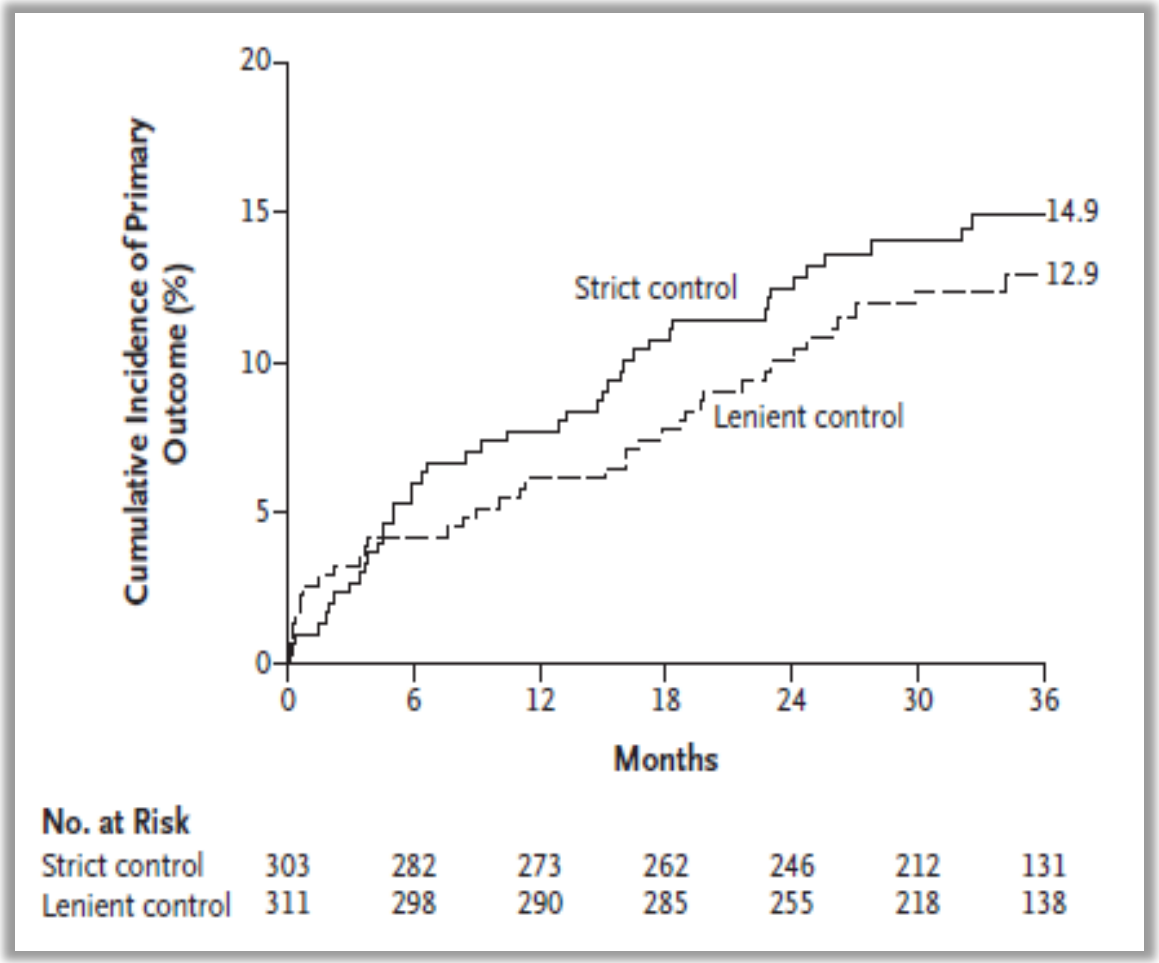


AFFIRM=Atrial Fibrillation Follow-up Investigation of Rhythm Management

The AFFIRM Investigators. *N Engl J Med* 2002; **347**(23): 1825–33

Outcome of RACE II:

Strict (<80bpm) vs lenient (<110bpm) rate control



Primary outcome:
CV death or AF related hospitalisation

Secondary outcome included symptomatic status – no difference

Van Gelder IC et al. NEJM 2010

Heart rate targets in AF

NICE

- Resting heart rate: < 90 bpm
  (recent onset < 110 bpm)
- Exercise heart rate: < 110 bpm
  (in sedentary individuals)
- Exercise heart rate:< 200 bpm minus age (in active individuals)

ESC/ACC/AHA

- Resting heart rate: < 80 bpm
- Exercise heart rate: < 110 bpm

Rate and Rhythm Control

Rate control first-line, except for:

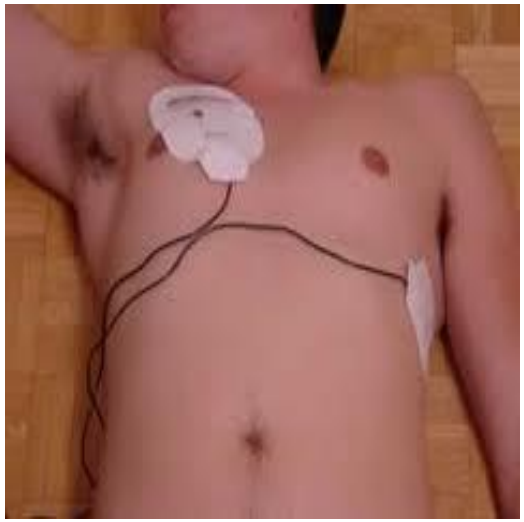
- AF with a reversible cause
- Heart failure thought to be primarily caused by AF
- New-onset AF
- Atrial flutter suitable for ablation
- Rhythm control more suitable based on clinical judgement *[new 2014]*

NICE AF Guideline June 2014

Rate and Rhythm Control

Consider pharmacological and/or electrical *rhythm control* for people with Atrial Fibrillation whose symptoms continue after heart rate has been controlled or a rate-control strategy has not been successful *[new 2014]*

- Electrical Cardioversion (ECV) if AF persisted > 48hrs
- Consider **amiodarone** 4 weeks before and for upto 12 months after ECV to maintain sinus rhythm
- TOE guided and conventional ECV considered equally effective
- **Offer standard β-blocker (not sotalol) for long-term rhythm control if needed**



NICE AF Guideline June 2014

Paroxysmal AF

Patients with paroxysmal AF may be highly symptomatic

Three main aims of treatment for paroxysmal AF are to:

- suppress paroxysms of AF & maintain sinus rhythm
- control heart rate during paroxysms of AF
- prevent complications ….**thromboembolism?**

In patients experiencing infrequent, or mild symptoms, a no drug treatment or 'pill in the pocket' (Flecainide) approach may be appropriate

Drug therapy for PAF

- Infrequent or mild symptoms -no treatment or pill in the pocket (flecainide)

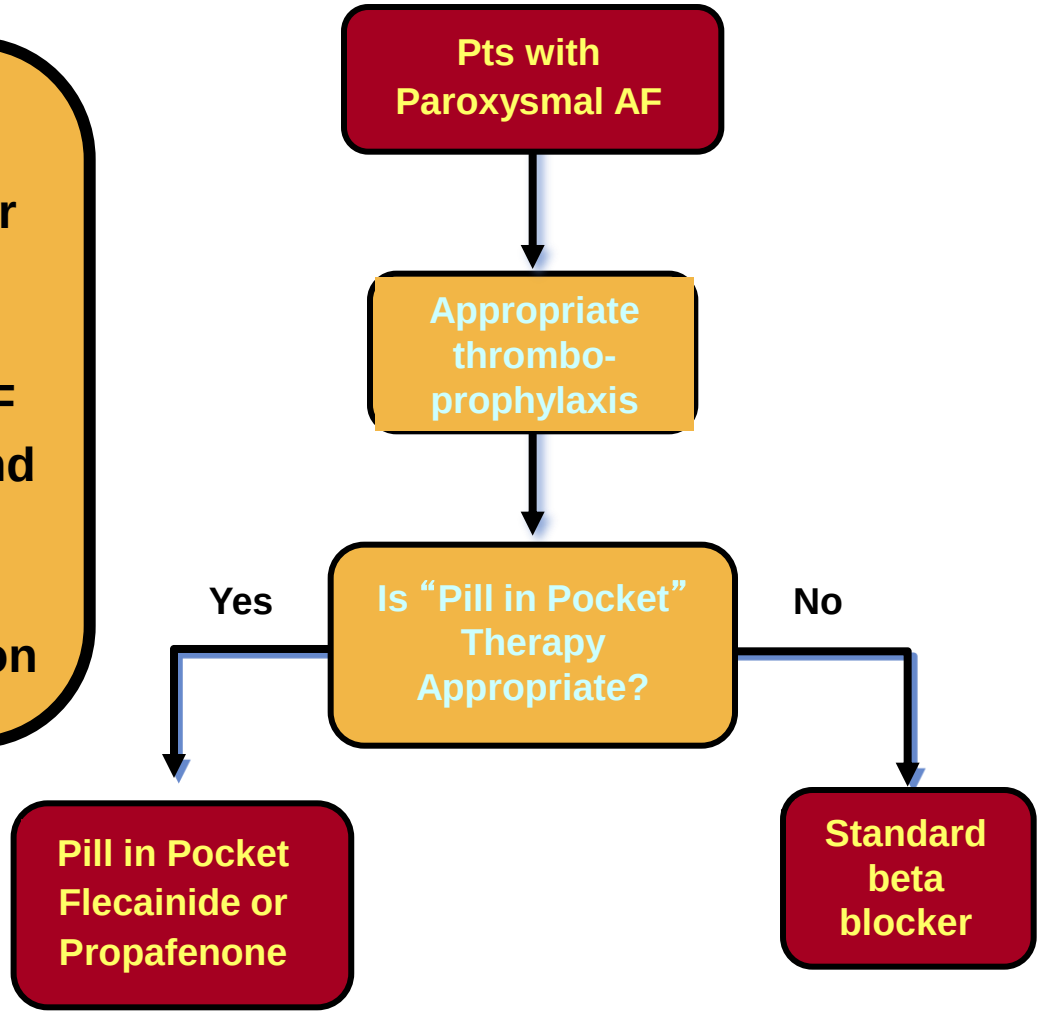
- More frequent /intrusive symptoms or failed Pill in pocket

  -bisoprolol sotalol, flecainide (with BB)

Pill-in-the-Pocket Technique

Patients with:

- **no LV dysfunction, valvular or IHD**
- **infrequent symptomatic episodes of paroxysmal AF**
- **systolic BP >100 mmHg and resting heart rate >70 bpm**
- **Understanding of how and when to take the medication**



Paroxysmal Atrial Fibrillation: Non-pharmacological management

- All patients should be considered for referral if;
  - anti-arrhythmic therapy is ineffective
  - therapy side-effects intolerable
  - ablation preferred treatment option
  - (e.g. Wolff-Parkinson-White syndrome)

- **Pulmonary vein isolation -**
  for patients resistant to, or intolerant of, pharmacotherapy

- **AVN ablation + pacin -**
  improves symptom burden & exercise tolerance, although require long term pacing & thromboprophylaxis

- **Surgery** (MAZE procedure) **-**
  may still be performed in patients with paroxysmal AF undergoing concomitant (e.g. mitral valve) surgery

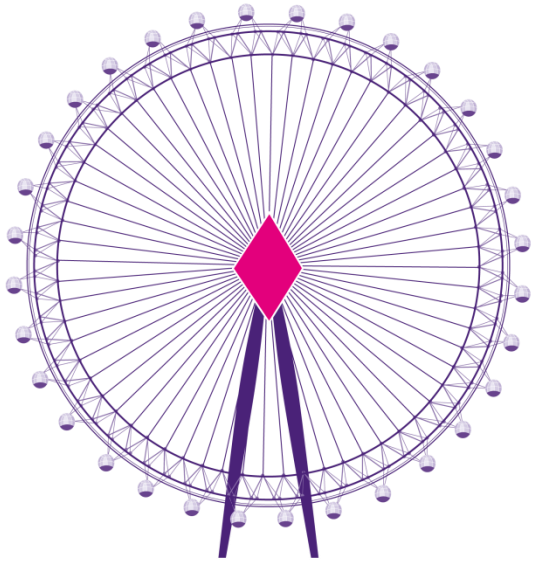
NICE Guidelines:- Refer to Specialist

Referral for consideration for specialist intervention should be considered in the following patients:

- Lone AF
- Those in whom pharmacological therapy has failed
- Those with ECG evidence of an underlying conducting disorder e.g. WPW
- Atrial flutter

THANK YOU !

How effective is AF screening and what is the most efficient way?



Rationale behind AF screening

- **Common** condition
- Frequently **asymptomatic** or little symptoms
- Grave consequences if undetected:
  - **Thrombo-embolic disease**
  - Tachycardia induced cardiomyopathy
- Test(ECG) is **acceptable** and non invasive
- **Effective treatment** is available

ATRIAL FIBRILLATION: Detection and diagnosis

- *Opportunistic manual pulse palpation*
- an ECG in all patients in whom AF is suspected
- in patients with possible paroxysmal AF consider either an ambulatory ECG monitor or event recorder

SAFE (Screening for AF in the Elderly) study

- 50 UK Primary Care centres
- 14 800 patients
- active screening for AF patients detects more cases than usual practice & the preferred method is opportunistic pulse palpation with follow-up ECG

Choice of screening mode

- ~~Systematic screening~~
- **Opportunistic screening**

  How to deliver it?

  - Flagging / Flu clinics / Chronic disease management
  - Engage Secondary Care
  - Can we target more specifically?

AF screening using chronic disease management templates

- Known risk factors for atrial fibrillation
- Chronic disease management systems
  - Recall
  - Regular review in dedicated clinic
  - Use of disease management templates
- Lack of pulse check on many templates

Atrial Fibrillation -Predisposing factors

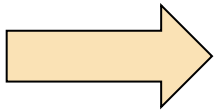
- Causes
  - **Hypertension**
  - **Coronary heart disease**
  - **Pulmonary disease**
  - **Excess alcohol intake**
  - **Surgery**

  } **80%**

  - Rheumatic heart disease (esp mitral stenosis)
  - Dilated or hypertrophic cardiomyopathy
  - Mitral valve prolapse
  - Hyperthyroidism

AF screening in chronic disease management / health promotion

- ✓Hypertension
- ✓Heart failure
- ✓CHD
- ✓Stroke
- ✓Diabetes
- ✓CKD
- ✓Weight management
- ✓NHS Health Check



> 90% target population coverage

Identification of patients with AF at Stoke Road Surgery

- Patients presenting with clinical features of AF
- Secondary/Tertiary care diagnosis of AF
- ***Hypertension monitoring*** (irregular pulse)
- ECG undertaken for other reasons

Hypertension monitoring

- HCA/PN assessment of radial/ brachial pulse prior to taking BP(on every occasion) in **all** patients as per Hypertension Protocol

- Patients with irregular pulse have 12 lead ECG undertaken at the same appointment and are then reviewed by Duty GP

- Electronic BP monitors will not accurately measure BP in AF (WATCH BP -NICE medical technology appraisal)

QOF AF Statistics
(March 16)

Stoke Road Practice

- AF prevalence **- 2.9%**

National

- AF prevalence range from 1.3 - 1.7%

Personalised Package of Care and Information

- Measures to prevent stroke
- Rate control
- Assessment of symptoms for rhythm control
- Psychological support if needed

Up-to-date and comprehensive education and information on:

- Cause, effects and possible complications of atrial fibrillation
- Management of rate and rhythm control
- Anticoagulation
- Practical advice on anticoagulation in line with recommendation 1.3.1 in 'Venous thromboembolic diseases' (NICE clinical guideline 144)
- Support networks *[new 2014]*

NICE National Institute for Health and Care Excellence

Atrial fibrillation: the management of atrial fibrillation

Issued: June 2014

NICE clinical guideline 180

guidance.nice.org.uk/cg180

NICE has accredited the process used by the Centre for Clinical Practice at NICE to produce guidelines. Accreditation is valid for 5 years from September 2009 and applies to guidelines produced since April 2007 using the processes described in NICE's 'The guidelines manual' (2007, updated 2009). More information on accreditation can be viewed at www.nice.org.uk/accreditation

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