Management of AF in the Community

Dr. Mark Sammut

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Disclosures

2024 ESC Guidelines for the management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS)

Developed by the task force for the management of atrial fibrillation of the European Society of Cardiology (ESC), with the special contribution of the European Heart Rhythm Association (EHRA) of the ESC.
Endorsed by the European Stroke Organisation (ESO)

Authors/Task Force Members: Isabelle C. Van Gelder *†, (Chairperson) (Netherlands), Michiel Rienstra ±, (Task Force Co-ordinator) (Netherlands), Karina V. Bunting ±, (Task Force Co-ordinator) (United Kingdom), Ruben Casado-Arroyo (Belgium), Valeria Caso [1] (Italy), Harry J.G.M. Crijns (Netherlands), Tom J.R. De Potter (Belgium), Jeremy Dwight (United Kingdom), Luigina Guasti (Italy), Thorsten Hanke [2] (Germany), Tiny Jaarsma (Sweden), Maddalena Lettino (Italy), Maja-Lisa Løchen (Norway), R. Thomas Lumbers (United Kingdom), Bart Maesen [2] (Netherlands), Inge Mølgaard (Denmark), Giuseppe M.C. Rosano (United Kingdom), Prashanthan Sanders (Australia), Renate B. Schnabel (Germany), Piotr Suwalski [2] (Poland), Emma Svennberg (Sweden), Juan Tamargo (Spain), Otilia Tica (Romania), Vassil Traykov (Bulgaria), Stylianos Tzeis (Greece), Dipak Kotecha *†, (Chairperson) (United Kingdom), and ESC Scientific Document Group

Epidemiology

- Prevalence in adults estimated at around 3%
- 1 in 3 of middle-aged adults in Europe and US will develop AF
- AF prevalence is expected to increase over the next decade due to increasing age and better detection of silent AF

Epidemiology of AF

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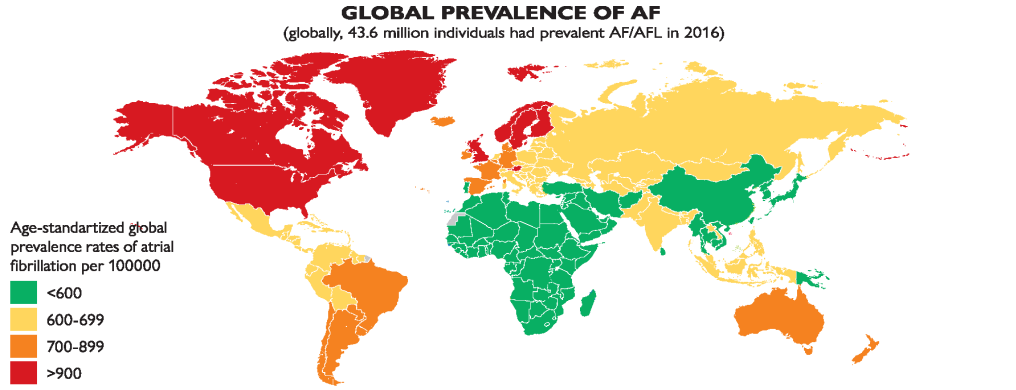

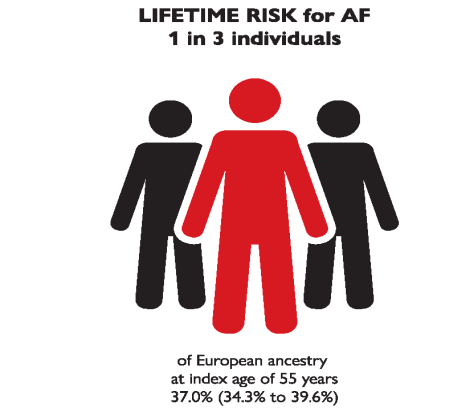

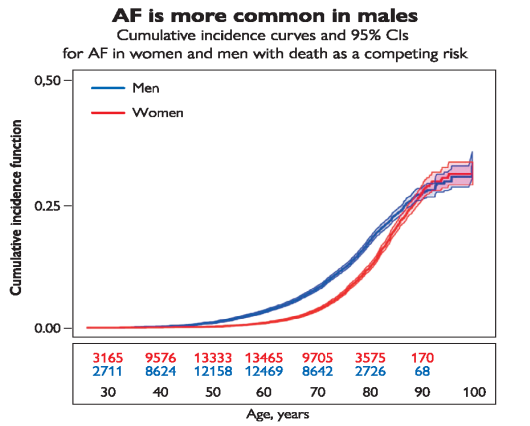

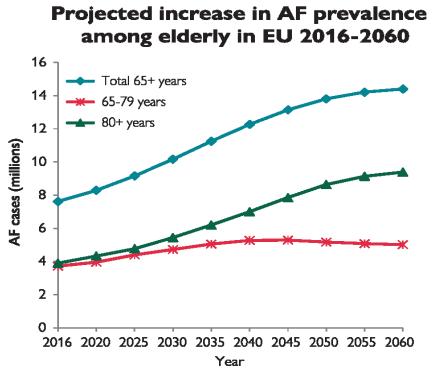

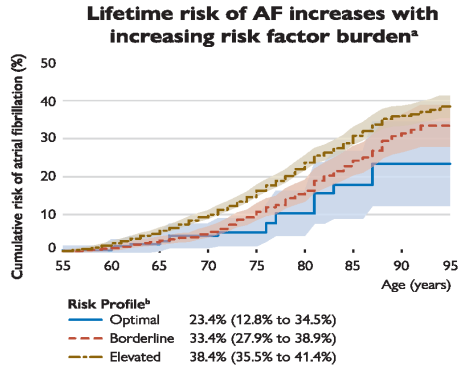

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Healthcare burden of AF

- Associated with a 2-fold increase in all-cause mortality in women and 1.5-fold increase in men
- Increased morbidity due to heart failure and stroke
- 20-30% of all strokes are due to AF
- AF increases the risk of stroke x 5 times
- Cognitive decline and vascular dementia are more common in AF patients
- AF costs amount to about 1% of total healthcare in UK

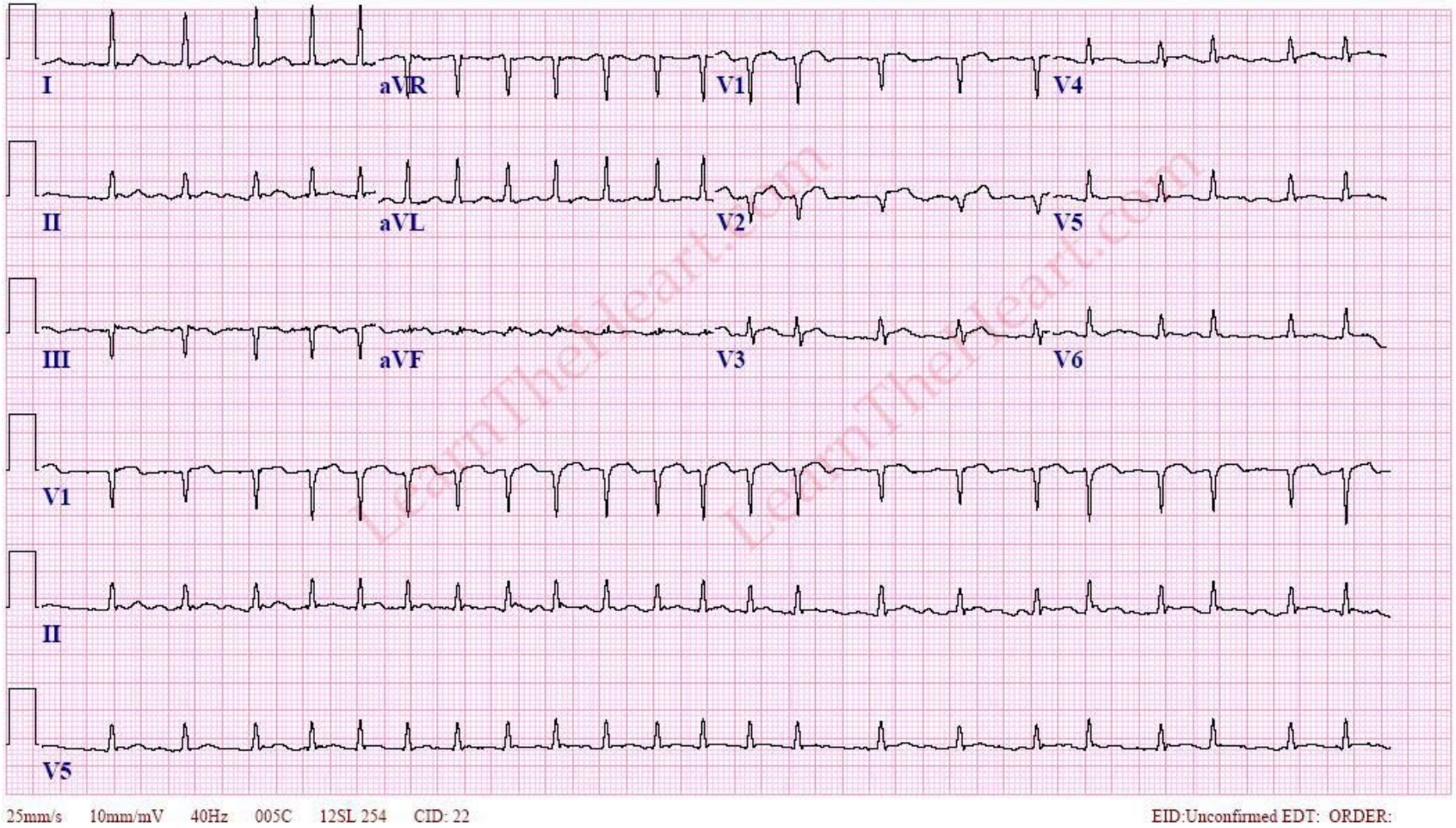
Definition

- A supraventricular tachyarrhythmia with uncoordinated atrial electrical activation and consequently ineffective atrial contraction
- ECG characteristics of AF include :

a. irregularly irregular R-R intervals

b. absence of consistent P waves

Atrial fibrillation



Classification of AF

AF pattern	Definition
First diagnosed	AF not diagnosed before, irrespective of its duration or the presence/severity of AF-related symptoms.
Paroxysmal	AF that terminates spontaneously or with intervention within 7 days of onset.
Persistent	AF that is continuously sustained beyond 7 days, including episodes terminated by cardioversion (drugs or electrical cardioversion) after ≥7 days
Long-standing persistent	Continuous AF of >12 months' duration when decided to adopt a rhythm control strategy.
Permanent	AF that is accepted by the patient and physician, and no further attempts to restore/maintain sinus rhythm will be undertaken. Permanent AF represents a therapeutic attitude of the patient and physician rather than an inherent pathophysiological attribute of AF, and the term should not be used in the context of a rhythm control strategy with antiarrhythmic drug therapy or AF ablation. Should a rhythm control strategy be adopted, the arrhythmia would be re-classified as 'long-standing persistent AF'.

Terminology

Clinical concept	Definition
Clinical AF	Symptomatic or asymptomatic AF that is clearly documented by an ECG (12-lead ECG or other ECG devices). The minimum duration to establish the diagnosis of clinical AF for ambulatory ECG is not clear and depends on the clinical context. Periods of 30 s or more may indicate clinical concern, and trigger further monitoring or risk stratification for thromboembolism.
Device-detected subclinical AF	Device-detected subclinical AF refers to asymptomatic episodes of AF detected on continuous monitoring devices. These devices include implanted cardiac electronic devices, for which most atrial high-rate episodes[a] may be AF, as well as consumer-based wearable monitors. Confirmation is needed by a competent professional reviewing intracardiac electrograms or an ECG-recorded rhythm.[5,6] Device-detected subclinical AF is a predictor of future clinical AF.[7]
AF burden	The overall time spent in AF during a clearly specified and reported period of monitoring, expressed as a percentage of time.
Recent-onset AF	There is accumulating data on the value of the term recent-onset AF in decision-making for acute pharmacological or electrical cardioversion of AF. The cut-off time interval to define this entity has not yet been established.[8–10]
Trigger-induced AF	New AF episode in close proximity to a precipitating and potentially reversible factor.[11–14]
Early AF	The time since diagnosis that qualifies for early AF is dissociated from any underlying atrial cardiomyopathy and is not well defined, broadly ranging from 3 to 24 months.[15–17] The definition of early AF also does not necessarily determine early timing of intervention.
Self-terminating AF	Paroxysmal AF which terminates spontaneously.[2] This definition may be of value for decisions on acute rhythm control taken jointly by the patient and healthcare provider.
Non-self-terminating AF	Atrial fibrillation which does not terminate spontaneously and, if needed, termination can be achieved only with an intervention.
Atrial cardiomyopathy	A combination of structural, electrical, or functional changes in the atria that leads to clinical impact (e.g. progression/recurrence of AF, limited effectiveness of AF therapy, and/or development of heart failure).[18,19] Atrial cardiomyopathy includes inflammatory and prothrombotic remodelling of the atria, neurohormonal activation (thereby affecting the ventricles), and fibrosis of myocardial tissue.[20]

Clinical presentation of AF

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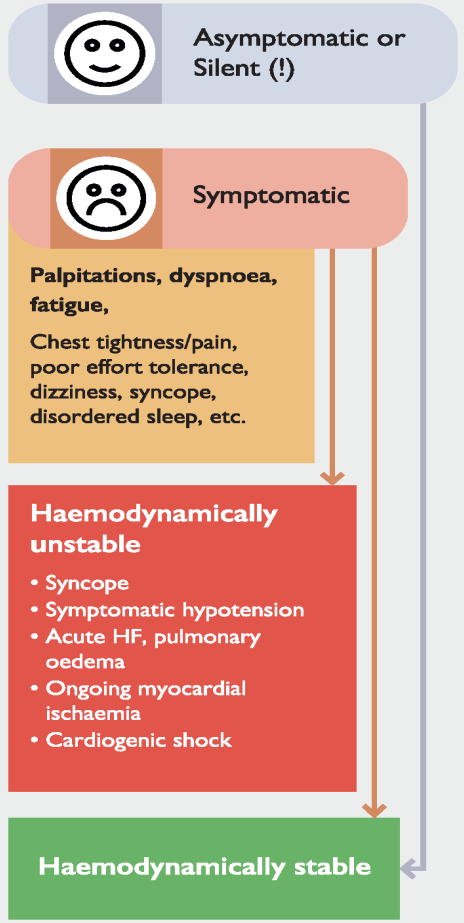
Clinical Presentation



AF-related OUTCOMES

AF-Related Outcome	Frequency in AF	Mechanism(s)
Death	1.5 - 3.5 fold increase	Excess mortality related to: • HF, comorbidities • Stroke
Stroke	20-30% of all ischaemic strokes, 10% of cryptogenic strokes	• Cardioembolic, or • Related to comorbid vascular atheroma
LV dysfunction / Heart failure	In 20-30% of AF patients	• Excessive ventricular rate • Irregular ventricular contractions • A primary underlying cause of AF
Cognitive decline / Vascular dementia	HR 1.4 / 1.6 (irrespective of stroke history)	• Brain white matter lesions, inflammation, • Hypoperfusion, • Micro-embolism
Depression	Depression in 16-20% (even suicidal ideation)	• Severe symptoms and decreased QoL • Drug side effects
Impaired quality of life	>60% of patients	• Related to AF burden, comorbidities, psychological functioning and medication • Distressed personality type
Hospitalizations	10-40% annual hospitalization rate	• AF management, related to HF, MI or AF related symptoms • Treatment-associated complications

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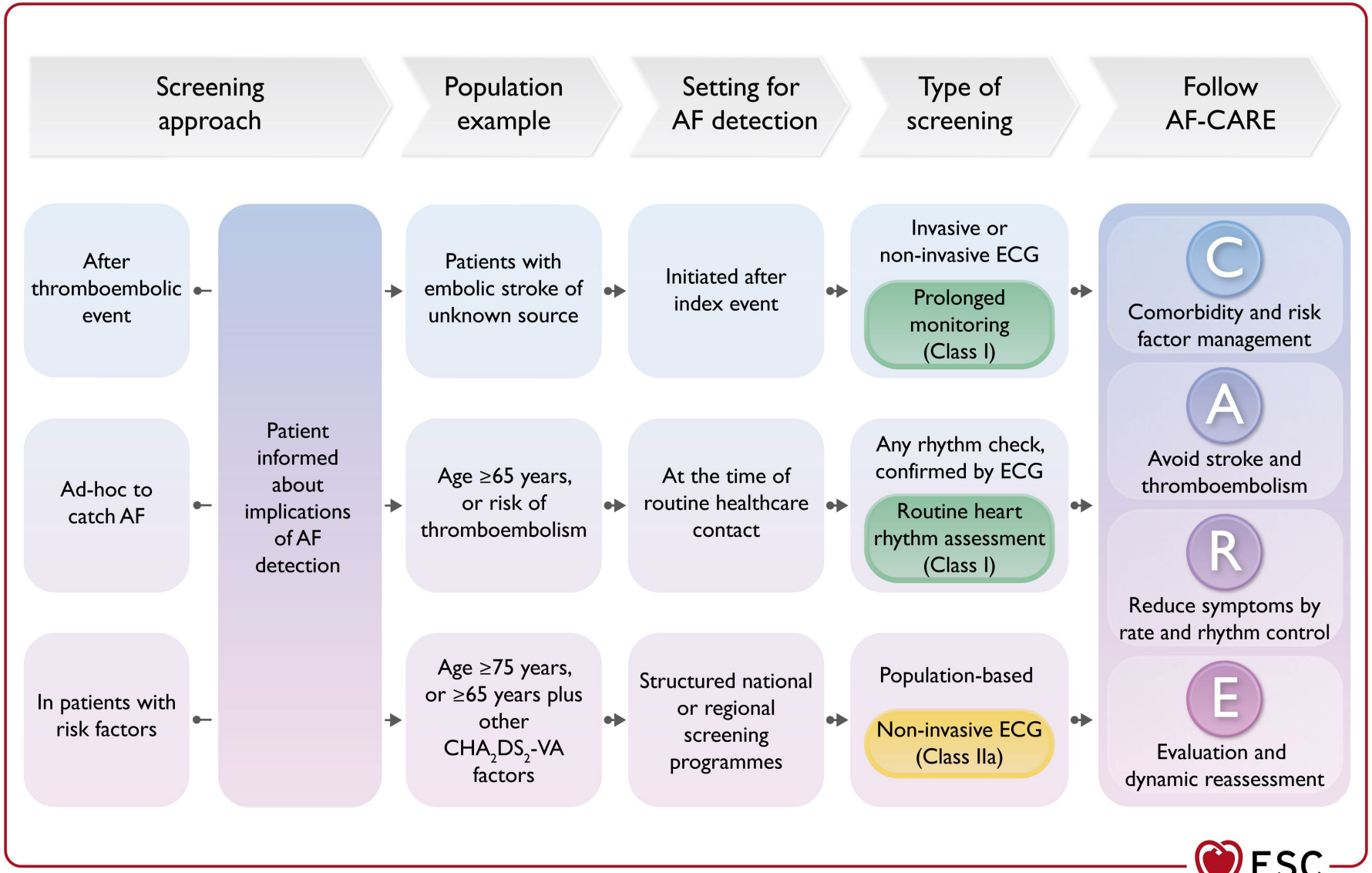
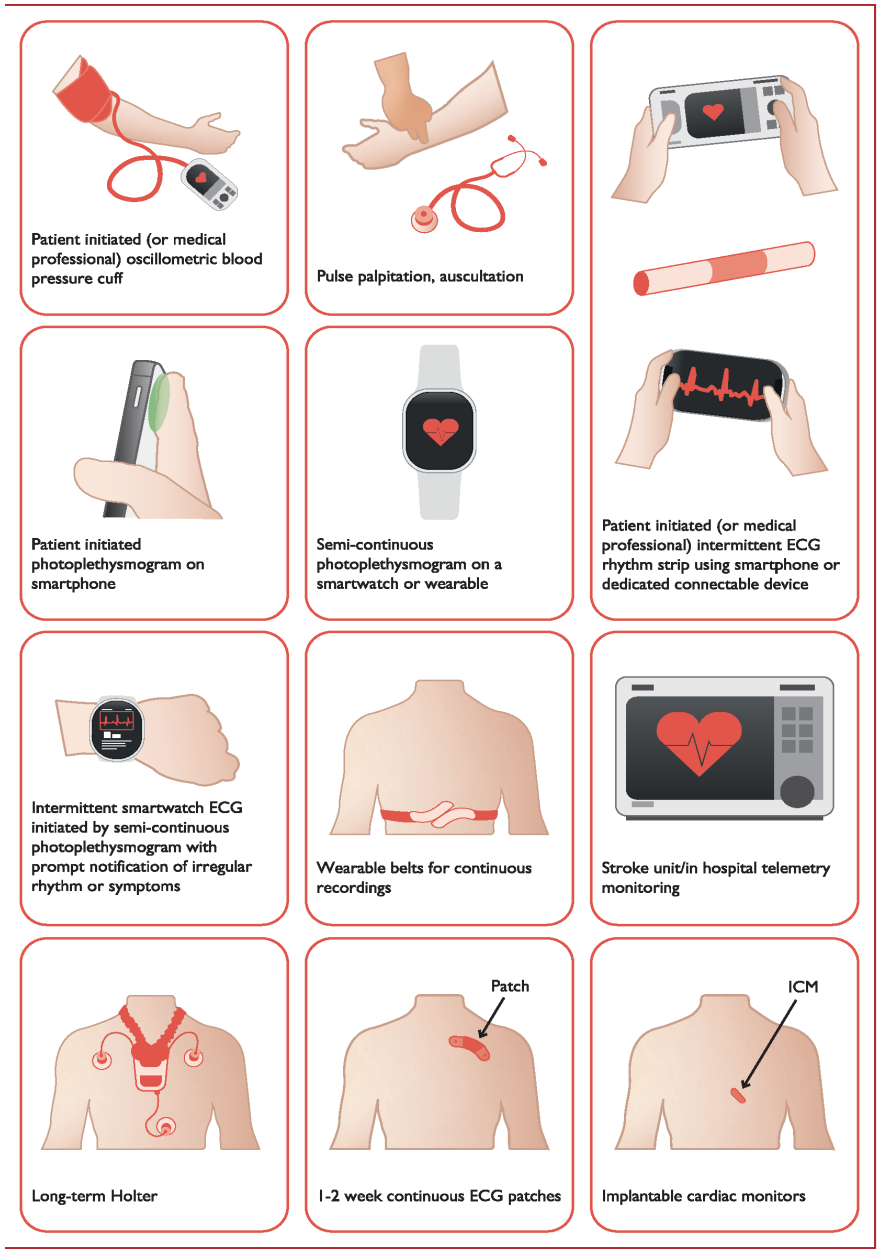
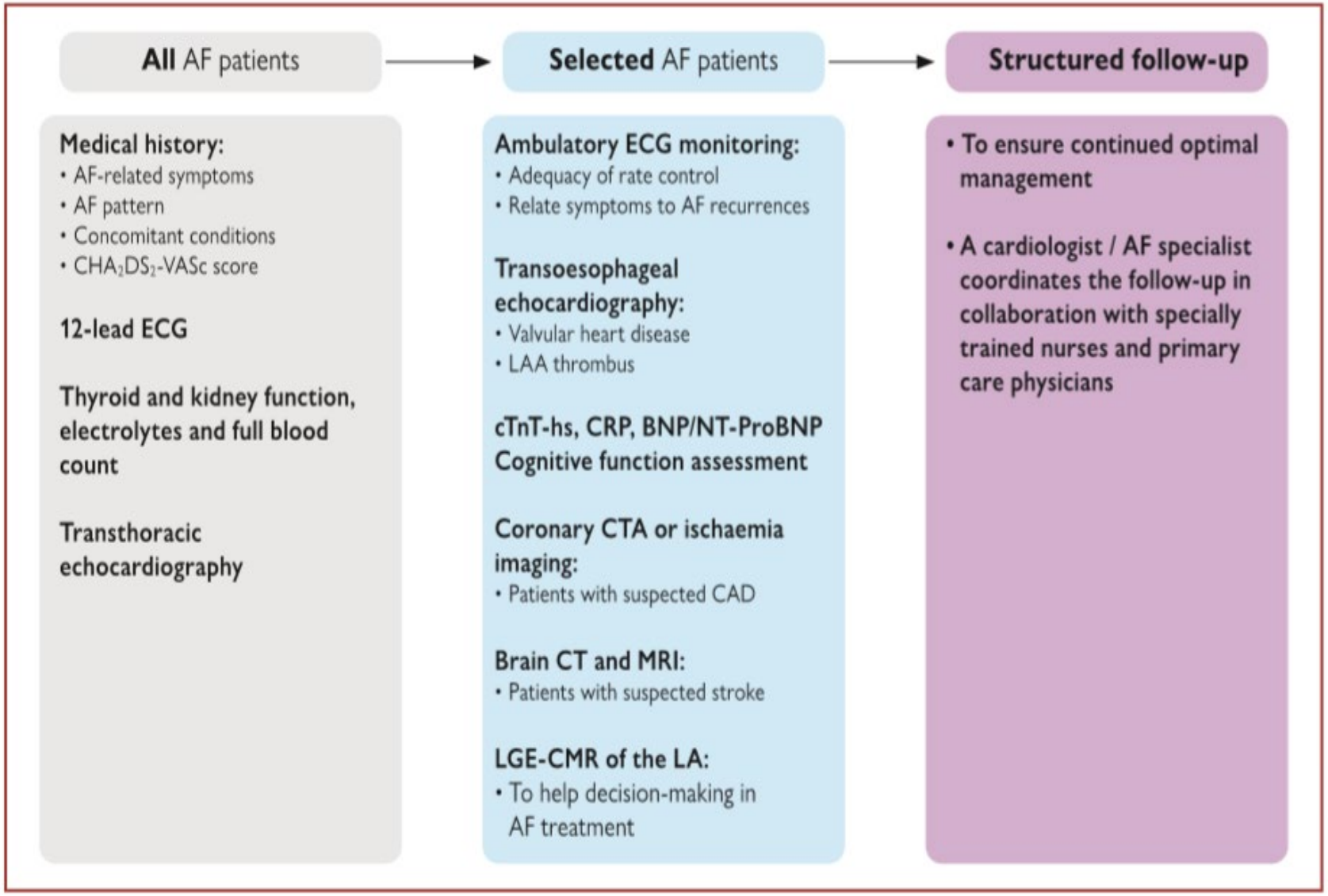
Screening for AF





Screening tools

Work-up and follow-up



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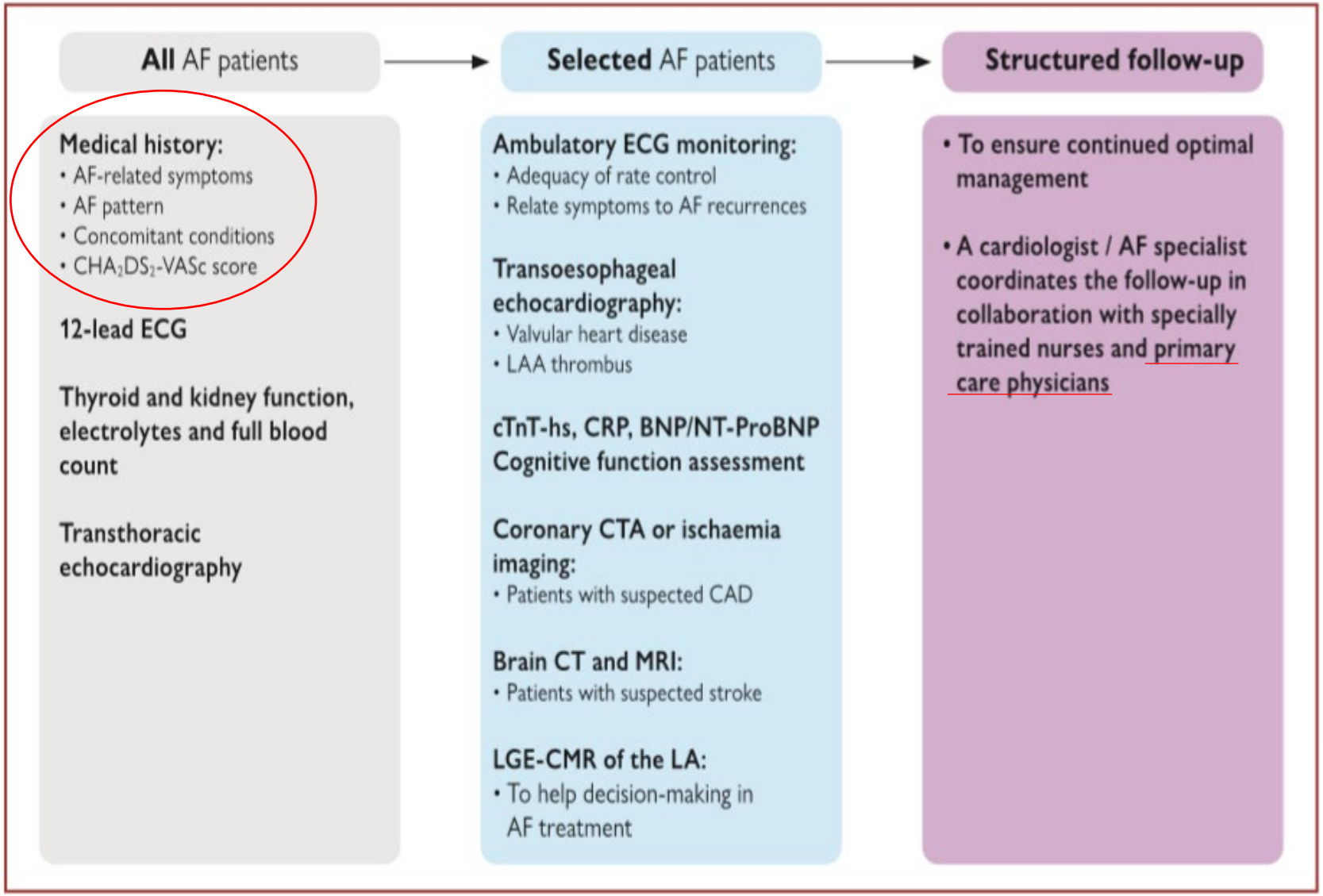
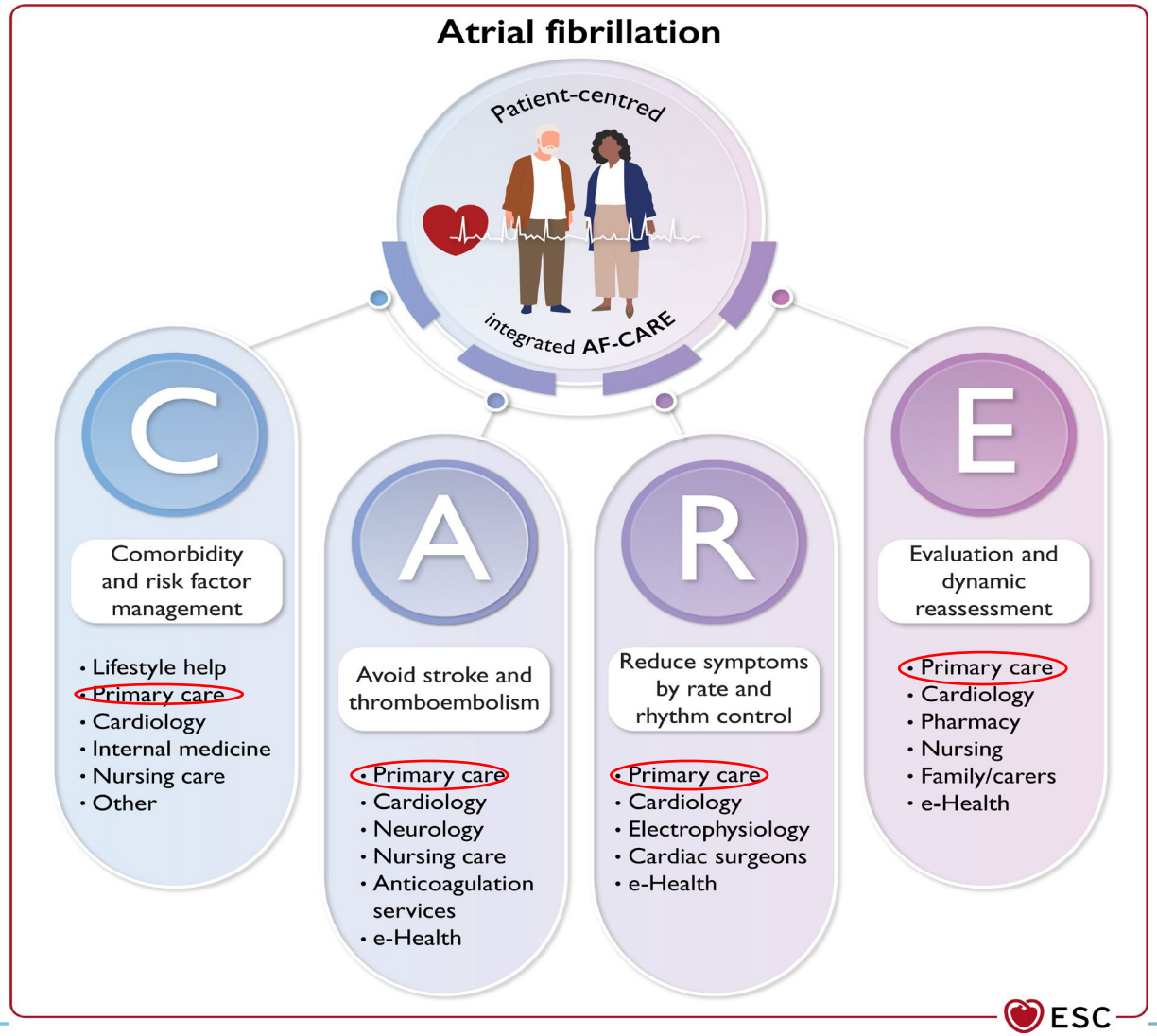


Multidisciplinary approach to AF Management



Management of AF

- Equality in healthcare provision (gender, ethnicity, socioeconomic) (Class I)
- Education for patients, families and healthcare professionals (Class I)
- Patient-centred AF management with a multidisciplinary approach (Class IIa)

C — Comorbidity and risk factor management

Hypertension	Heart failure	Overweight or obese	Obstructive sleep apnoea	Alcohol
Blood pressure lowering treatment (Class I)	Diuretics for congestion (Class I)	Weight loss (target 10%)[a] (Class I)	Management of OSA[a] (Class IIb)	Reduce to ≤3 drinks per week (Class I)
	Appropriate HFrEF medical therapy (Class I)	Bariatric surgery if rhythm control[a] (Class IIb)		
Diabetes mellitus			**Exercise capacity**	**Other risk factors/ comorbidities**
Effective glycaemic control[a] (Class I)	SGLT2 inhibitors (Class I)		Tailored exercise programme (Class I)	Identify and manage aggressively[a] (Class I)

A — Avoid stroke and thromboembolism

Risk of thrombo-embolism →	Use locally-validated risk score or CHA_2DS_2-VA →	Choice of anticoagulant →	Assess bleeding risk →	Prevent bleeding
Start oral anticoagulation (Class I)	OAC if CHA_2DS_2-VA score = 2 or more (Class I)	Use DOAC, except mechanical valve or mitral stenosis (Class I)	Assess and manage all modifiable risk factors for bleeding (Class I)	Do not combine antiplatelets and OAC for stroke prevention (Class III)
Temporal pattern of AF not relevant (Class III)	OAC if CHA_2DS_2-VA score = 1 (Class IIa)	If VKA: Target INR 2.0–3.0; (Class I) >70% INR range; (Class IIa) or switch to DOAC (Class I)	Do not use risk scores to withhold anticoagulation (Class III)	Avoid antiplatelets beyond 12 months in OAC treated CCS/PVD (Class III)
Antiplatelet therapy not an alternative (Class III)				

R — Reduce symptoms by rate and rhythm control

See patient pathways for:

First-diagnosed AF | Paroxysmal AF | Persistent AF | Permanent AF

Consider:

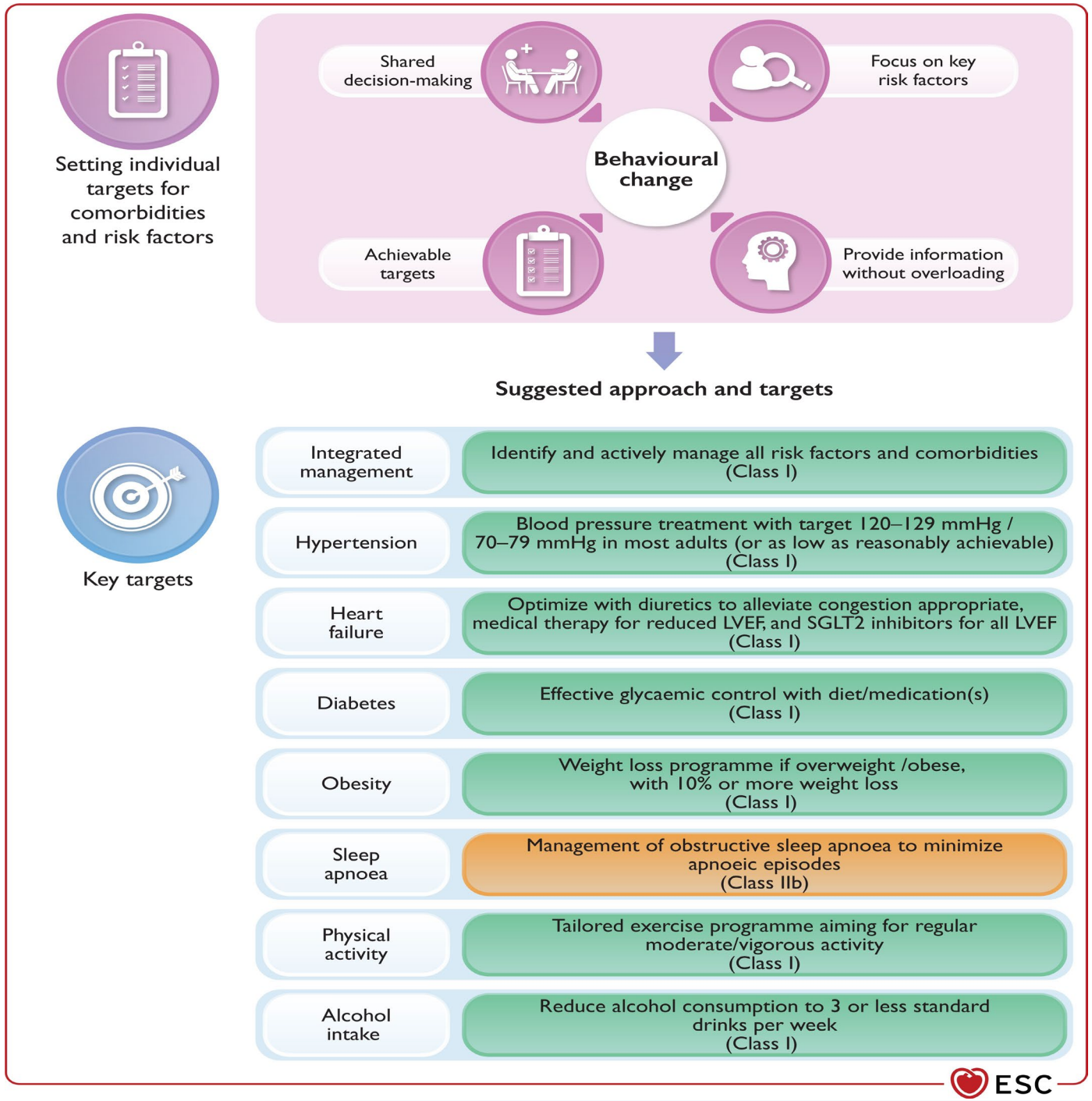
Rate control drugs | Cardioversion | Antiarrhythmic drugs | Catheter ablation | Endoscopic/hybrid ablation | Surgical ablation | Ablate and pace

E — Evaluation and dynamic reassessment

Re-evaluate when AF episodes or non-AF admissions

Regular re-evaluation: 6 months after presentation, and then at least annually or based on clinical need

ECG, blood tests, cardiac imaging, ambulatory ECG, other imaging as needed	Assess new and existing risk factors and comorbidities (Class I)	Stratify risk for stroke and thromboembolism (Class I)	Check impact of AF symptoms before and after treatment (Class I)	Assess and manage modifiable bleeding risk factors (Class I)	Continue OAC despite rhythm control if risk of thromboembolism (Class I)



Comorbidity and risk factor management

Anticoagulation

- Warfarin treatment consistently reduced the risk of stoke by 60-80%
- NOACs compared to VKAs in AF patients :

a. can only be used in the absence of prosthetic valves and moderate/severe mitral stenosis

b. non-inferiority for prevention of ischaemic stroke

c. 52% reduction in ICH

d. 25% increase in non-fatal GI bleeding (rivaroxaban/dabigatran)

NOACs

	Dabigatran	Rivaroxaban	Apixaban	Edoxaban
Standard dose	150 mg b.i.d.	20 mg o.d.	5 mg b.i.d.	60 mg o.d.
Lower dose	110 mg b.i.d.			30 mg o.d.
Reduced dose		15 mg o.d.	2.5 mg b.i.d.	30 mg o.d.
Dose-reduction criteria	Dabigatran 110 mg b.i.d. in patients with: • Age ≥80 years • Concomitant use of verapamil, or • Increased bleeding risk	CrCl 15 - 49 mL/min	At least 2 of 3 criteria: • Age ≥80 years, • Body weight ≤60 kg, or • Serum creatinine ≥1.5 mg/dL (133 µmol/L)	If any of the following: • CrCl 30 - 50 mL/min, • Body weight ≤60 kg, • Concomitant use of dronedarone, ciclosporine, erythromycin, or ketoconazole

b.i.d. = bis in die (twice a day); CrCl = creatinine clearance; o.d. = *omni die* (once daily).

CHA_2DS_2-Va Score

CHA_2DS_2-VA component		Definition and comments	Points awarded[a]
C	Chronic heart failure	Symptoms and signs of heart failure (irrespective of LVEF, thus including HFpEF, HFmrEF, and HFrEF), or the presence of asymptomatic LVEF ≤40%.[261–263]	1
H	Hypertension	Resting blood pressure >140/90 mmHg on at least two occasions, or current antihypertensive treatment. The optimal BP target associated with lowest risk of major cardiovascular events is 120–129/70–79 mmHg (or keep as low as reasonably achievable).[162,264]	1
A	Age 75 years or above	Age is an independent determinant of ischaemic stroke risk.[265] Age-related risk is a continuum, but for reasons of practicality, two points are given for age ≥75 years.	2
D	Diabetes mellitus	Diabetes mellitus (type 1 or type 2), as defined by currently accepted criteria,[266] or treatment with glucose lowering therapy.	1
S	Prior stroke, TIA, or arterial thromboembolism	Previous thromboembolism is associated with highly elevated risk of recurrence and therefore weighted 2 points.	2
V	Vascular disease	Coronary artery disease, including prior myocardial infarction, angina, history of coronary revascularization (surgical or percutaneous), and significant CAD on angiography or cardiac imaging.[267] OR Peripheral vascular disease, including: intermittent claudication, previous revascularization for PVD, percutaneous or surgical intervention on the abdominal aorta, and complex aortic plaque on imaging (defined as features of mobility, ulceration, pedunculation, or thickness ≥4 mm).[268,269]	1
A	Age 65–74 years	1 point is given for age between 65 and 74 years.	1

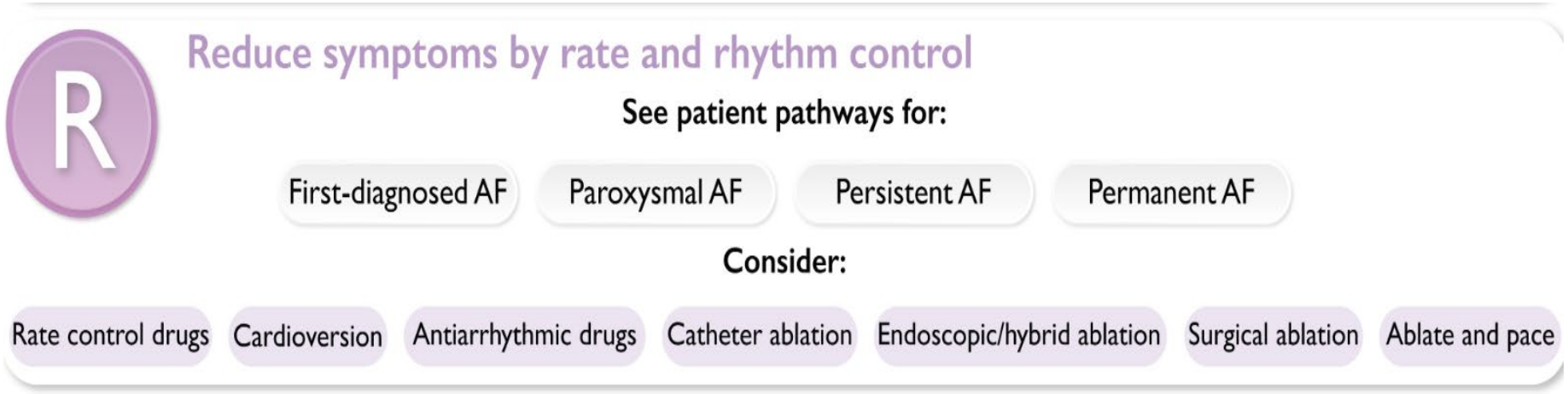
BP, blood pressure; CAD, coronary artery disease; CHA_2DS_2-VA, chronic heart failure, hypertension, age ≥75 years (2 points), diabetes mellitus, prior stroke/transient ischaemic attack/arterial thromboembolism (2 points), vascular disease, age 65–74 years; HFmrEF, heart failure with mildly reduced ejection fraction; HFpEF, heart failure with preserved ejection fraction; HFrEF, heart failure with reduced ejection fraction; LVEF, left ventricular ejection fraction; PVD, peripheral vascular disease.

[a]In addition to these factors, other markers that modify an individual's risk for stroke and thromboembolism should be considered, including cancer, chronic kidney disease, ethnicity (black, Hispanic, Asian), biomarkers (troponin and BNP), and in specific groups, atrial enlargement, hyperlipidaemia, smoking, and obesity.

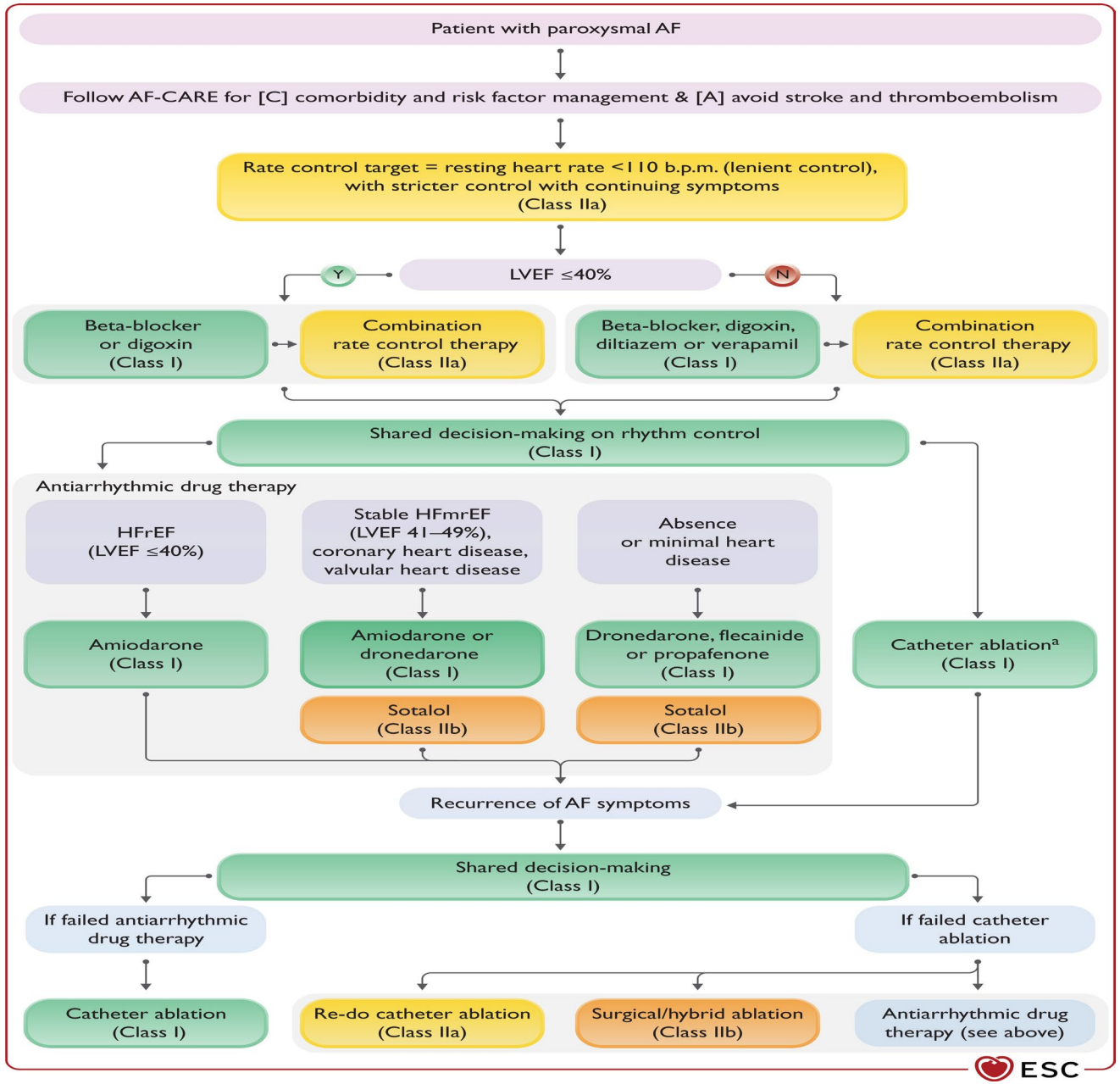
Anticoagulation and CV

Therapeutic oral anticoagulation for at least 3 weeks (adherence to DOACs or INR ≥2.0 for VKAs) is recommended before scheduled cardioversion of AF and atrial flutter to prevent procedure-related thromboembolism.[319–321]	I	B
Transoesophageal echocardiography is recommended if 3 weeks of therapeutic oral anticoagulation has not been provided, for exclusion of cardiac thrombus to enable early cardioversion.[319–321,522]	I	B
Oral anticoagulation is recommended to continue for at least 4 weeks in all patients after cardioversion and long-term in patients with thromboembolic risk factor(s) irrespective of whether sinus rhythm is achieved, to prevent thromboembolism.[239,319,320,523,524]	I	B
Early cardioversion is not recommended without appropriate anticoagulation or transoesophageal echocardiography if AF duration is longer than 24 h, or there is scope to wait for spontaneous cardioversion.[522]	III	C

Reduce Symptoms by Rate and Rhythm Control



Pathway for patients with paroxysmal AF



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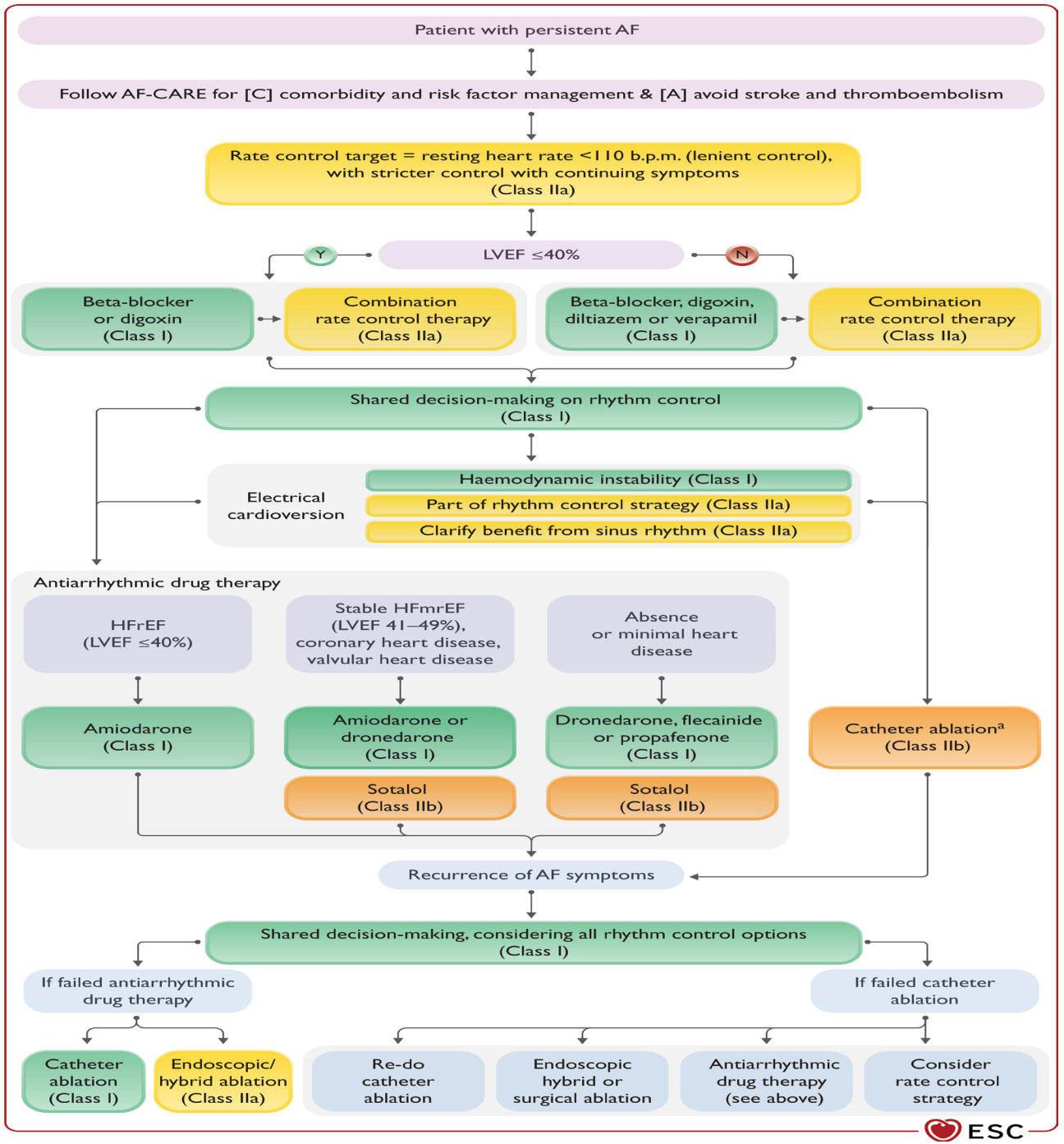
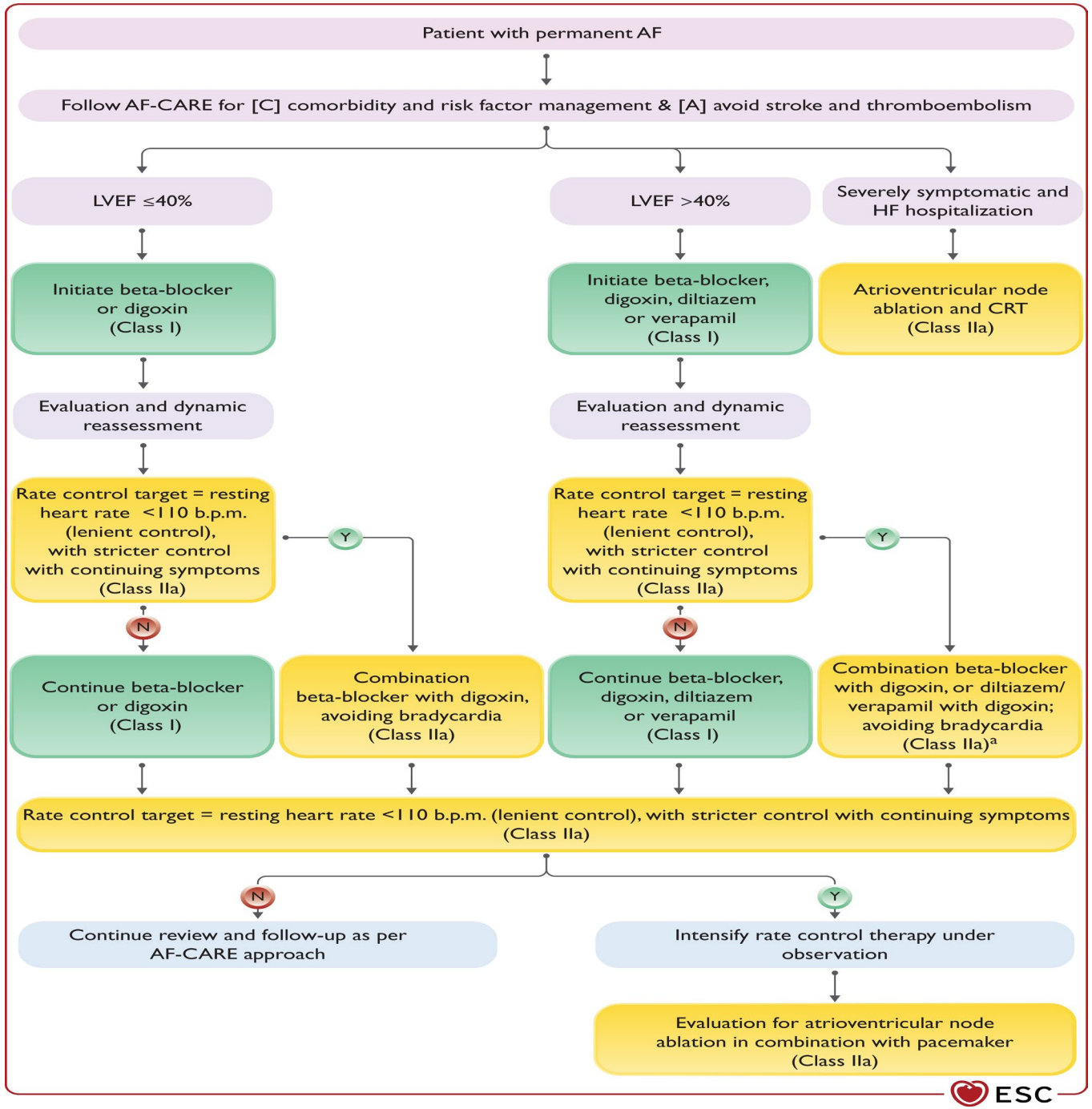
Pathway for patients with persistent AF

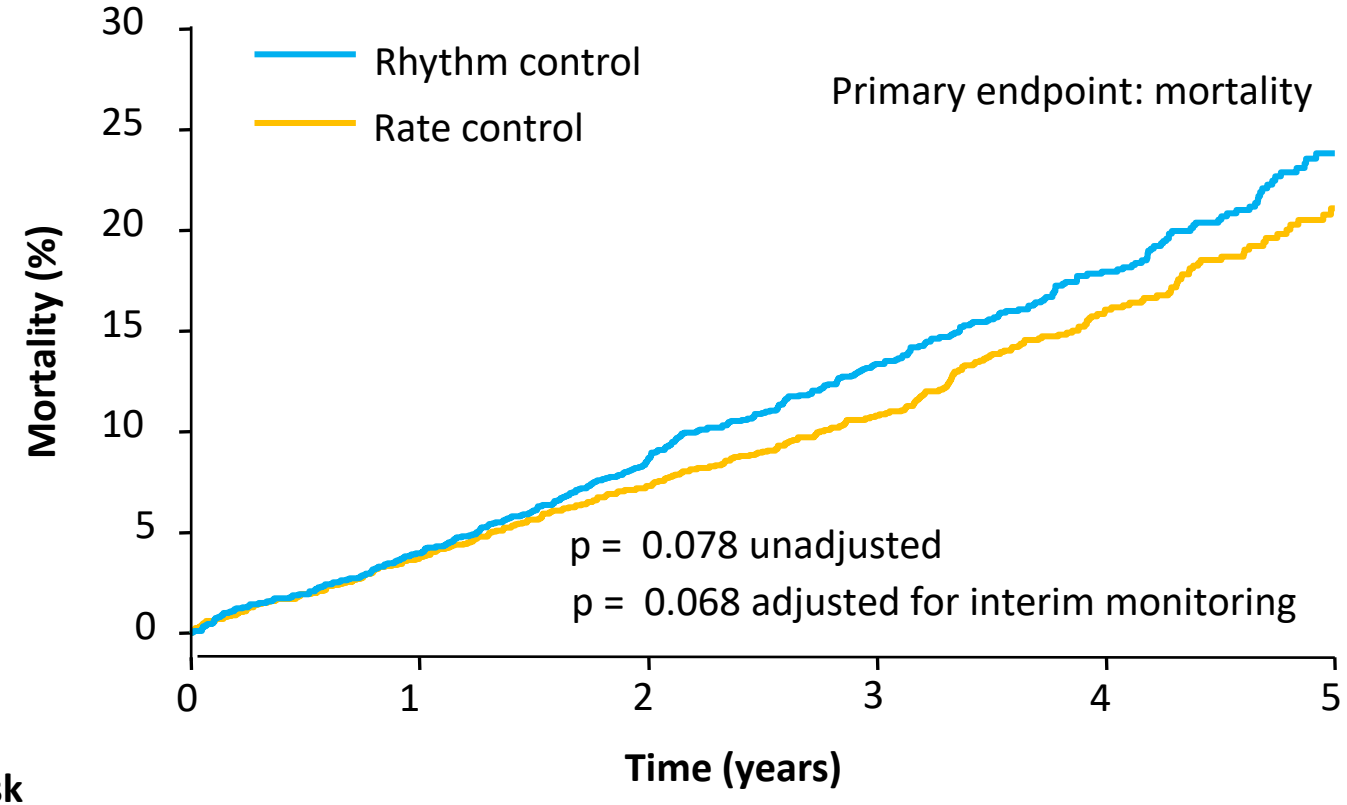


Pathway for patients with permanent AF



Rate or Rhythm Control?

AFFIRM – Antiarrhythmic drugs do not reduce mortality in AF

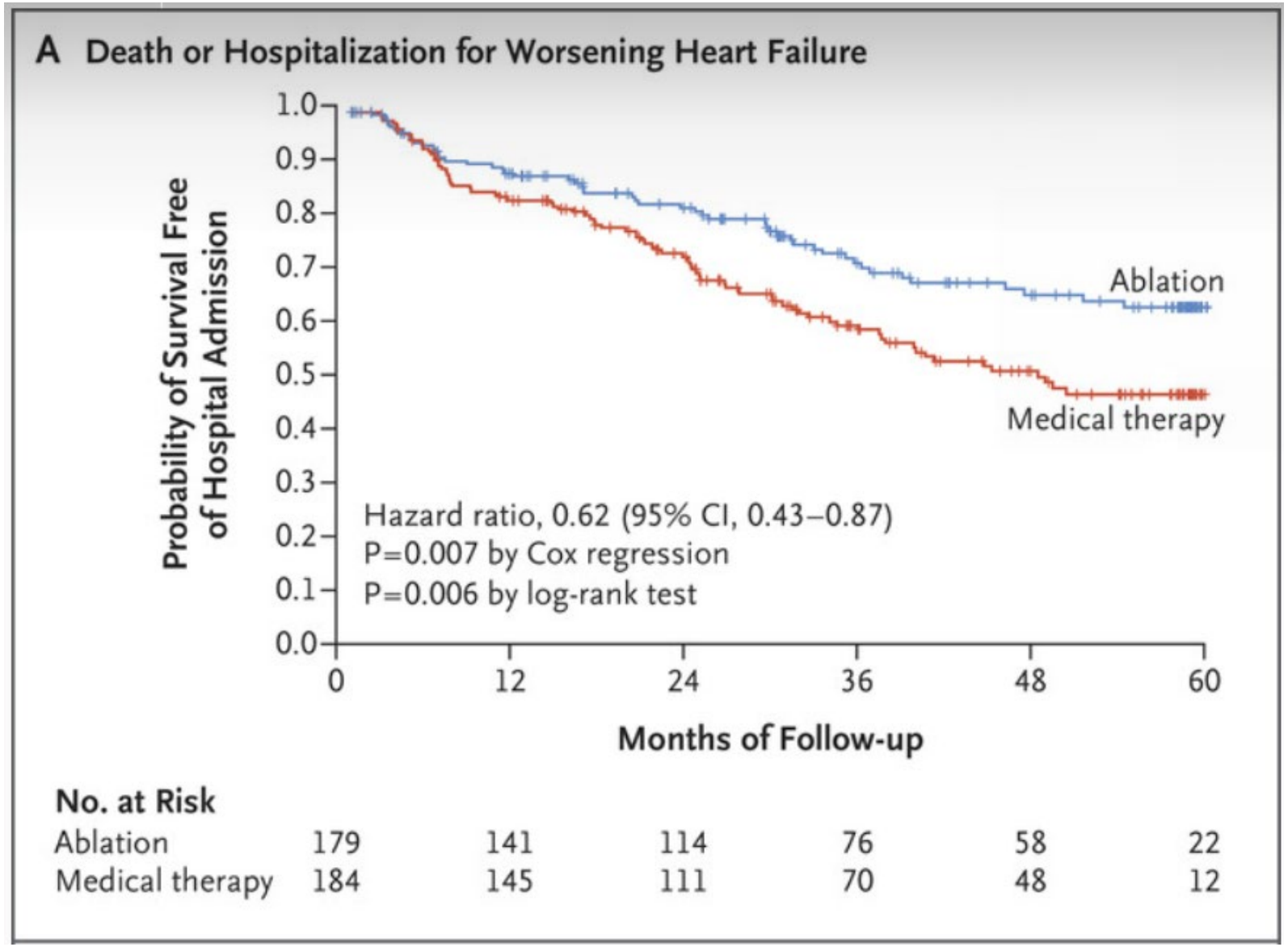


Patients at risk

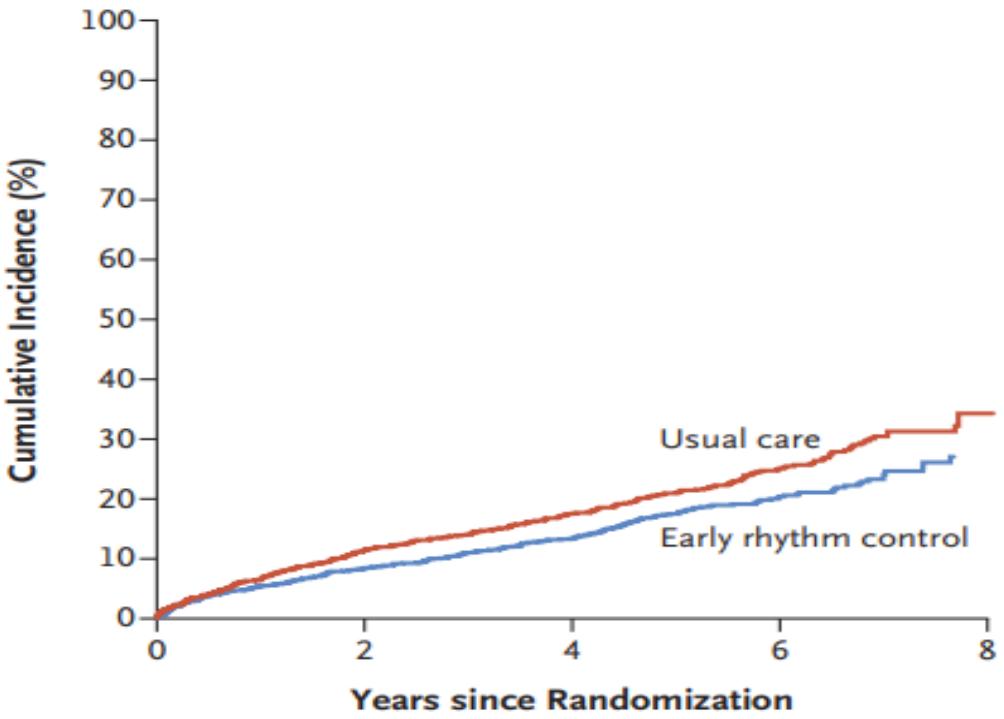
Rhythm control	2,033	1,932	1,807	1,316	780	255
Rate control	2,027	1,925	1,825	1,328	774	236

AFFIRM investigators. N Engl J Med. 2002;347:1825-33.

CASTLE-AF trial



EAST-AFNET 4 trial



No. at Risk					
Usual care	1394	1169	888	405	34
Early rhythm control	1395	1193	913	404	26

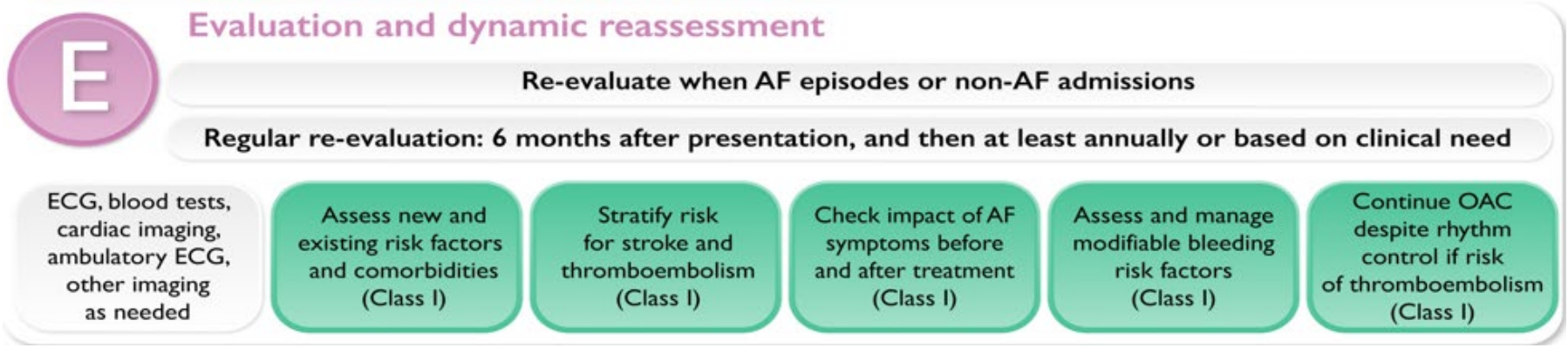
Figure 2. Aalen–Johansen Cumulative-Incidence Curves for the First Primary Outcome.

The first primary outcome was a composite of death from cardiovascular causes, stroke, or hospitalization with worsening of heart failure or acute coronary syndrome.

Factors favouring rhythm-control

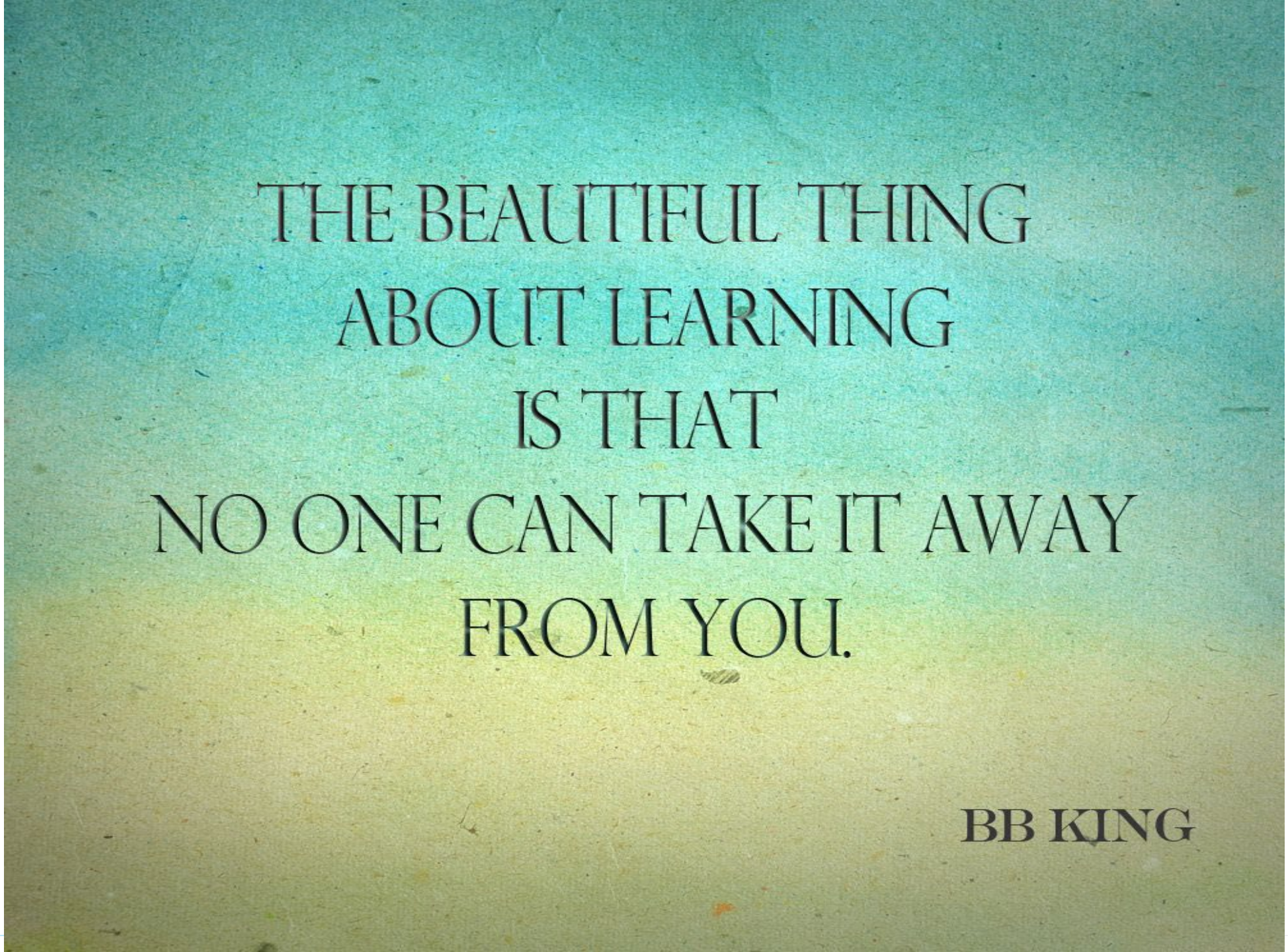
- Younger age
- Newly-diagnosed AF episode/short history (< 1yr)
- Tachycardia-mediated cardiomyopathy
- Normal-moderate increase LA size
- No/few co-morbidities/heart disease
- Rate control difficult to achieve
- AF precipitated by a reversible trigger
- Patient’s choice

E Evaluation and dynamic assessment



Role of General Practitioners in the management of AF

- Screening and diagnosis of AF
- Appropriate referral for ECG diagnosis, investigations and management plan
- Control of risk factors
- Evaluation and Clinical follow-up (regulation of medication doses, ensure treatment compliance, symptom assessment and early re-referral if needed)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IS THAT
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