Behandlungsoptionen bei Patienten mit Vorhofflimmern auf Intensivstation

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Presentation available at:
https://www.arasharya.de/resources/

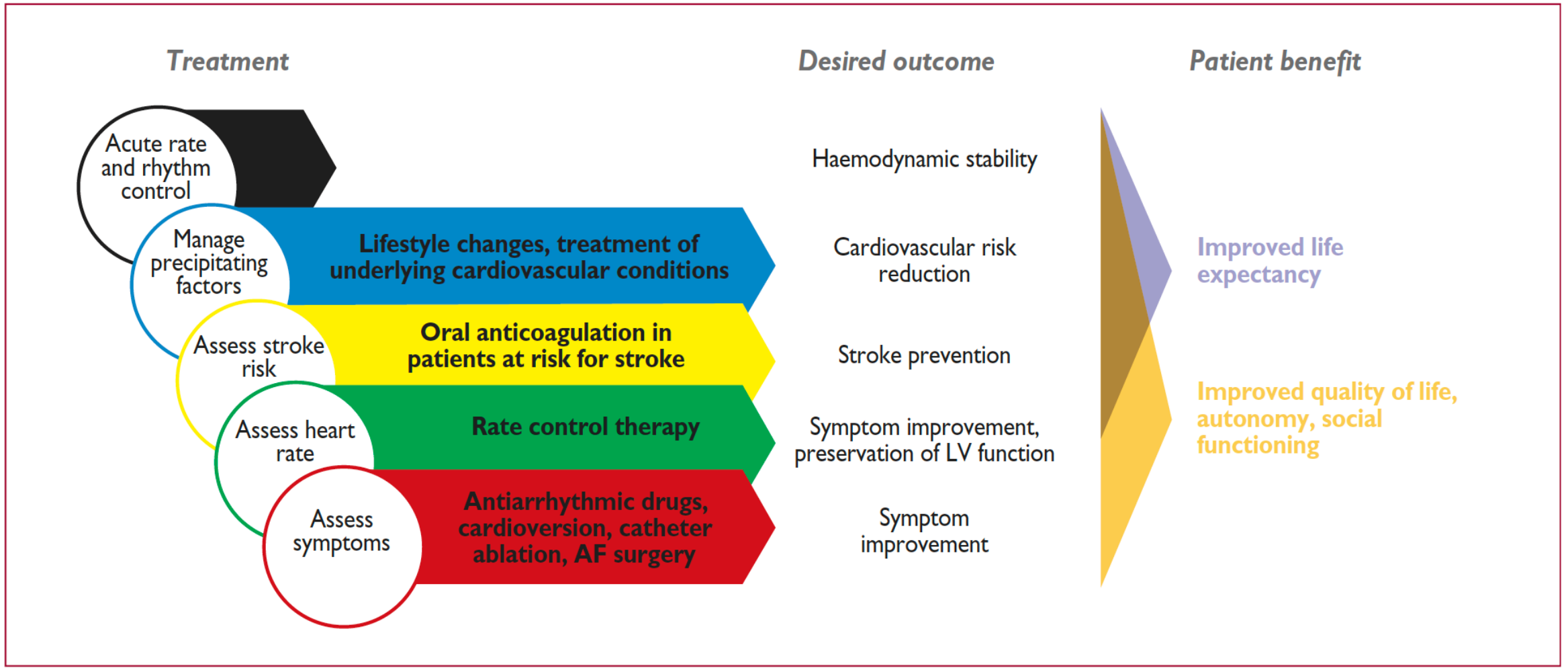


Figure 5 Acute and chronic management of atrial fibrillation patients, desired cardiovascular outcomes, and patient benefits. Adapted from the report on the 4th AFNET/EHRA consensus conference.[76]

Aim of acute management:

Box 2
Management goals of acute atrial fibrillation

1. Accurate diagnosis
2. Patient stabilization
3. Recognition and treatment of reversible causes
   - May require further investigations
4. Symptom management
   - Select rhythm or rate-control strategy
5. Stroke prevention
6. Patient education
7. Arranging follow-up care

Cardiology Clinics
Volume 36, Issue 1, February 2018, Pages 141-159

Box 1
Causes of atrial fibrillation

Hypertension

Obesity

Valvular heart disease[a]

Pulmonary embolus

Postoperative

Heart failure

Acute myocardial infarction

Pericardial disease (pericarditis, myocarditis)

Hyperthyroidism

Toxicologic causes

Sleep apnea

Chronic obstructive pulmonary disease

Alcohol: acute (so-called holiday heart) and chronic

Hypothermia

[a] Valvular heart disease refers to patients with either rheumatic heart disease (predominantly mitral stenosis) or mechanical heart valves; other valvular diseases, such as aortic disease or mitral regurgitation, do not currently have evidence to suggest that they should alter usual decision making around oral anticoagulants.

Überblick: RACE Protocol

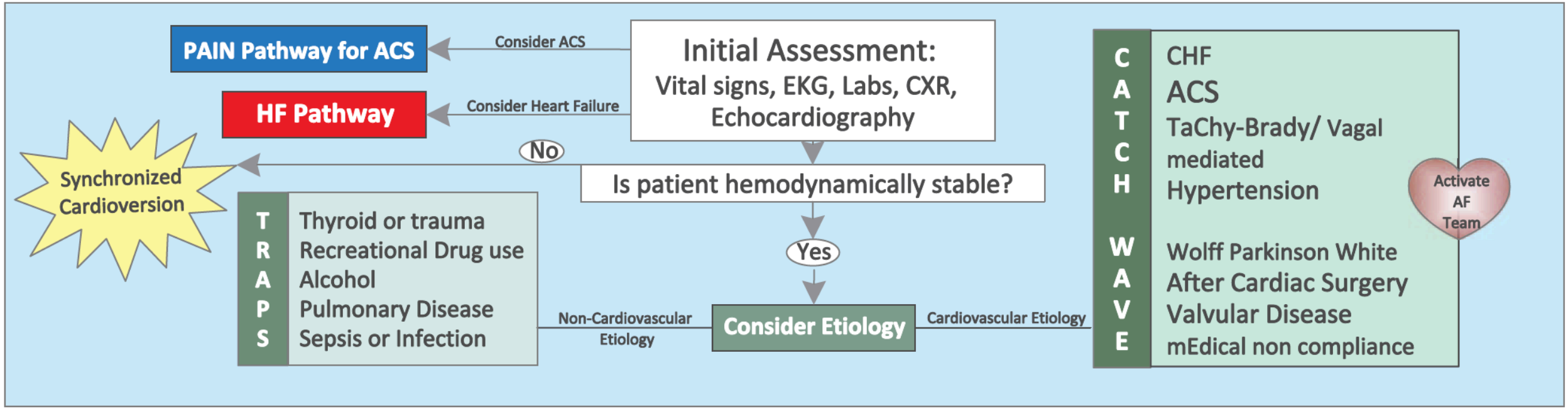
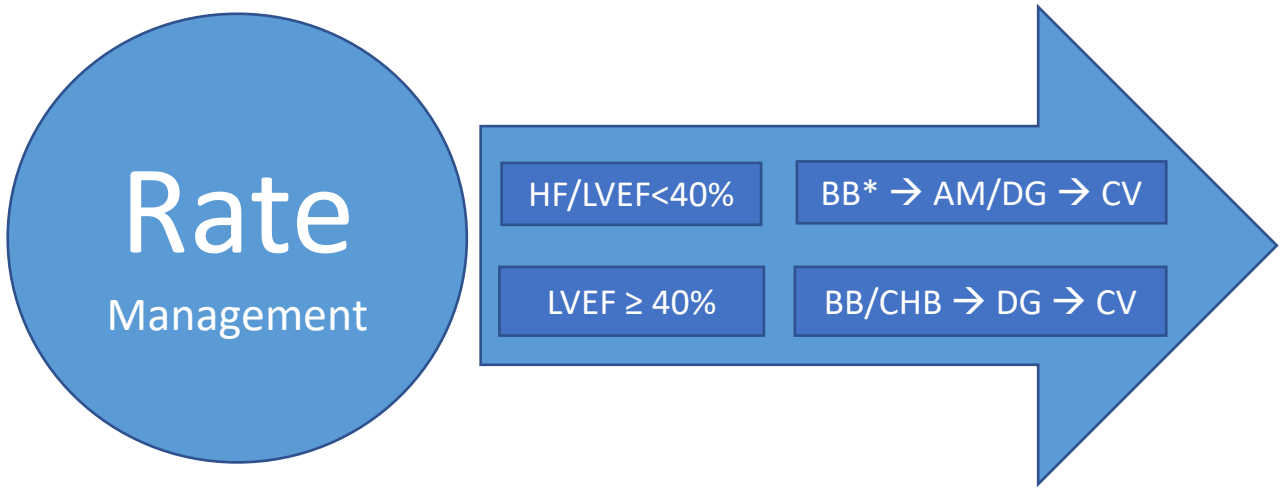


FIGURE 2. Initial assessment of patients with atrial fibrillation and atrial flutter.

Herzog et al. Critical Pathways in Cardiology • Volume 16, Number 2, June 2017

RACE → R: Rate Management

In about 60% to 70% of patients with AF, a rapid ventricular rate is observed, and symptoms are usually present depending on the rapidity of the ventricular response, the length of time the arrhythmia is sustained, and the presence and type of underlying heart disease.



* Low-Dose Beta-Blocker

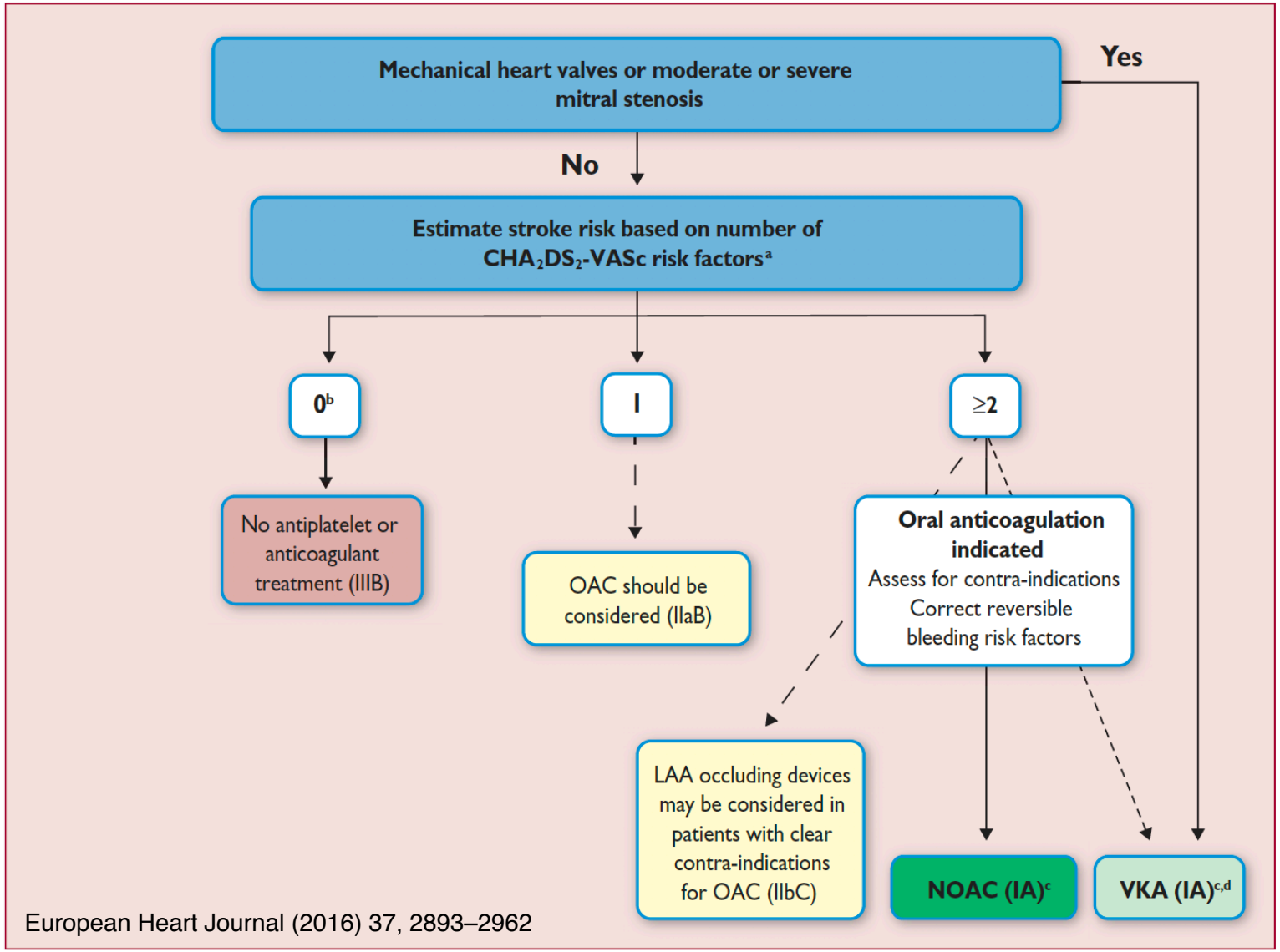
Table 15 Rate control therapy in atrial fibrillation

Therapy	Acute intravenous rate control	Long-term oral rate control	Side effect profile	Comments
Beta-blockers[a]				
Bisoprolol	Not available	1.25–20 mg once daily or split.	Most common reported adverse symptoms are lethargy, headache, peripheral oedema, upper respiratory tract symptoms, gastrointestinal upset and dizziness. Adverse effects include bradycardia, atrioventricular block and hypotension.	Bronchospasm is rare – in cases of asthma, recommend beta-1 selective agents (avoid carvedilol). Contra-indicated in acute cardiac failure and a history of severe bronchospasm.
Carvedilol	Not available	3.125–50 mg twice daily.		
Metoprolol	2.5–10 mg intravenous bolus (repeated as required).	100–200 mg total daily dose (according to preparation).		
Nebivolol	Not available	2.5–10 mg once daily or split.		
Esmolol	0.5 mg/kg intravenous bolus over 1 min; then 0.05–0.25 mg/kg/min.			
Calcium-channel blockers				
Diltiazem	15–25 mg intravenous bolus (repeated as required).	60 mg 3 times daily up to 360 mg total daily dose (120–360 mg once daily modified release).	Most common reported adverse symptoms are dizziness, malaise, lethargy, headache, hot flushes, gastrointestinal upset and oedema. Adverse effects include bradycardia, atrioventricular block and hypotension (prolonged hypotension possible with verapamil).	Use with caution in combination with beta-blockers. Reduce dose with hepatic impairment and start with smaller dose in renal impairment. Contra-indicated in LV failure with pulmonary congestion or LVEF <40%.
Verapamil	2.5–10 mg intravenous bolus (repeated as required).	40–120 mg 3 times daily (120–480 mg once daily modified release).		
Cardiac glycosides				
Digoxin	0.5 mg intravenous bolus (0.75–1.5 mg over 24 hours in divided doses).	0.0625–0.25 mg daily dose	Most common reported adverse symptoms are gastrointestinal upset, dizziness, blurred vision, headache and rash. In toxic states (serum levels >2 ng/mL), digoxin is proarrhythmic and can aggravate heart failure, particularly with co-existent hypokalaemia.	High plasma levels associated with increased risk of death. Check renal function before starting and adapt dose in patients with CKD. Contra-indicated in patients with accessory pathways, ventricular tachycardia and hypertrophic cardiomyopathy with outflow tract obstruction.
Digitoxin	0.4–0.6 mg intravenous bolus.	0.05–0.3 mg daily dose.		
Specific indications				
Amiodarone	300 mg intravenously diluted in 250 mL 5% dextrose over 30–60 minutes (preferably via central venous cannula).[b]	200 mg daily	Hypotension, bradycardia, nausea, QT prolongation, pulmonary toxicity, skin discolouration, thyroid dysfunction, corneal deposits and cutaneous reaction with extravasation.	Suggested as adjunctive therapy in patients where heart rate control cannot be achieved using combination therapy.

European Heart Journal (2016) 37, 2893–2962

RACE → A: Anticoagulation

OAC



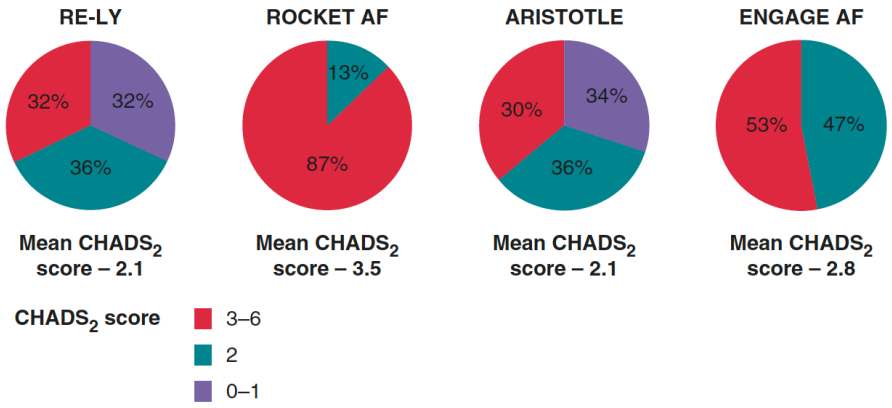
European Heart Journal (2016) 37, 2893–2962

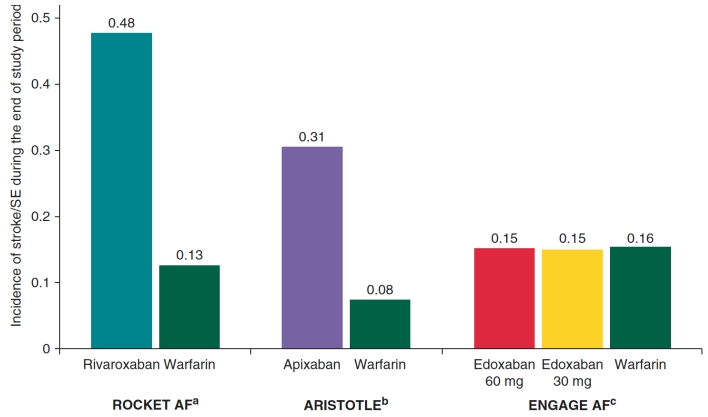
DOACs use in special categories of patients

Curr Probl Cardiol. 2019 Feb 27. pii: S0146-2806(19)30019-2.

Table 3 **Differences between the four NOAC randomized controlled trials that impact the robustness of cross-study comparisons**

	RE-LY[6]	ROCKET AF[7]	ARISTOTLE[8]	ENGAGE AF[9]
Dose reduction	No dose reduction–patients randomized between two doses of dabigatran (110 or 150 mg bid)	At randomization: Rivaroxaban 15 mg od for patients with CrCl 30–49 mL/min	At randomization: Apixaban 2.5 mg bid for patients with ≥2 of the following criteria: • Age ≥80 years • Body weight ≤60 kg • Serum creatinine level ≥1.5 mg/dL	Throughout the study period: Edoxaban 30 mg od for patients with ≥1 of the following criteria: • CrCl 30–50 mL/min • Body weight ≤60 kg • Concomitant use of verapamil or quinidine
Patients taking reduced NOAC dose	50.0%	20.7%[12]	4.7%	25.3%
Definition of NVAF	Patients with a history of heart valve disorders were excluded	Patients with AF and valvular disease (defined as mitral stenosis or prosthetic valve) were excluded	Patients with moderate or severe mitral stenosis were excluded	Patients with moderate or severe mitral stenosis, unresected atrial myxoma, or a mechanical heart valve were excluded





EP Europace, Volume 20, Issue 1, January 2018, Pages 1–11

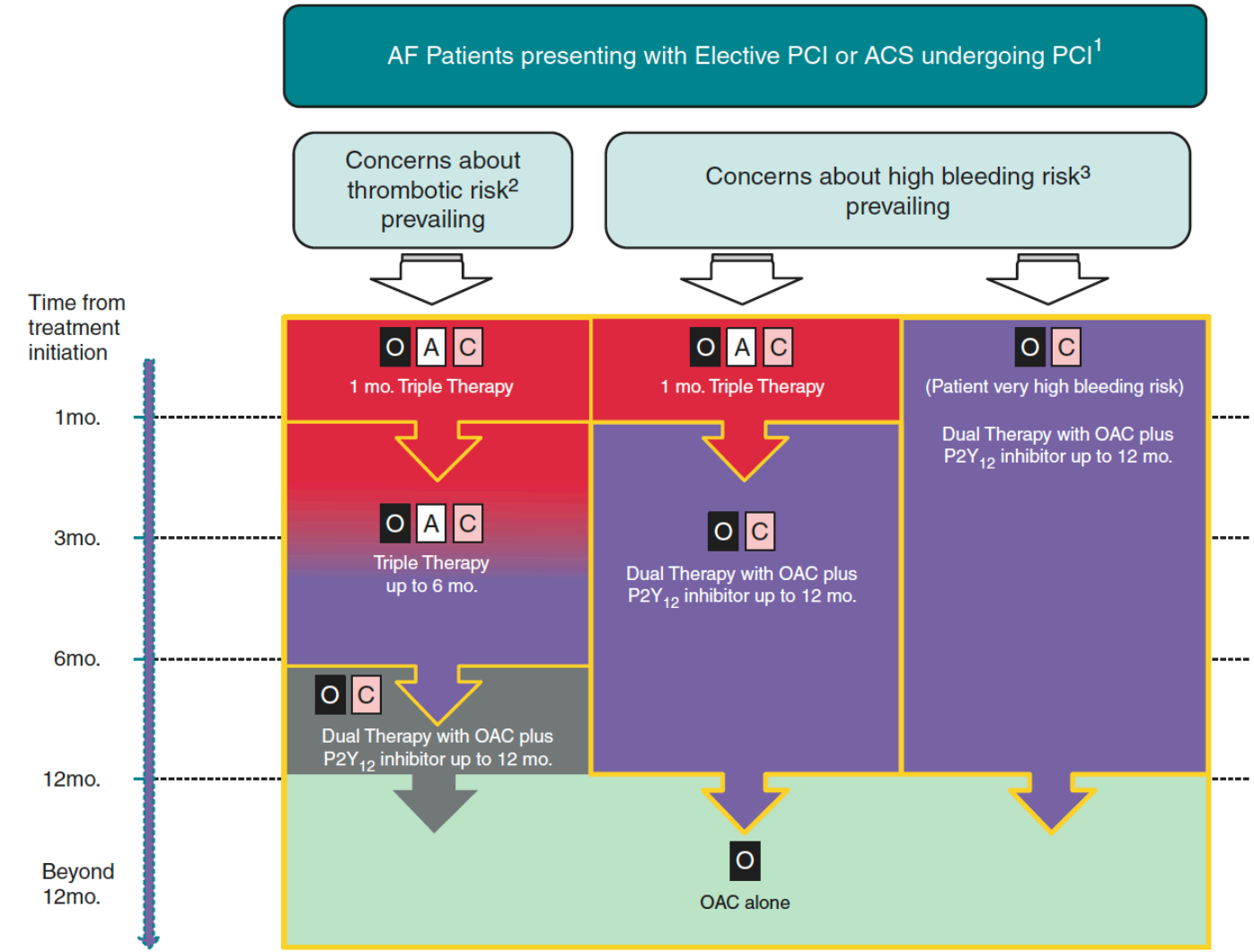


Figure 2 Management algorithm for AF patients presenting with elective PCI or ACS undergoing PCI.

Europace (2019) 21, 192–217

ORIGINAL ARTICLE

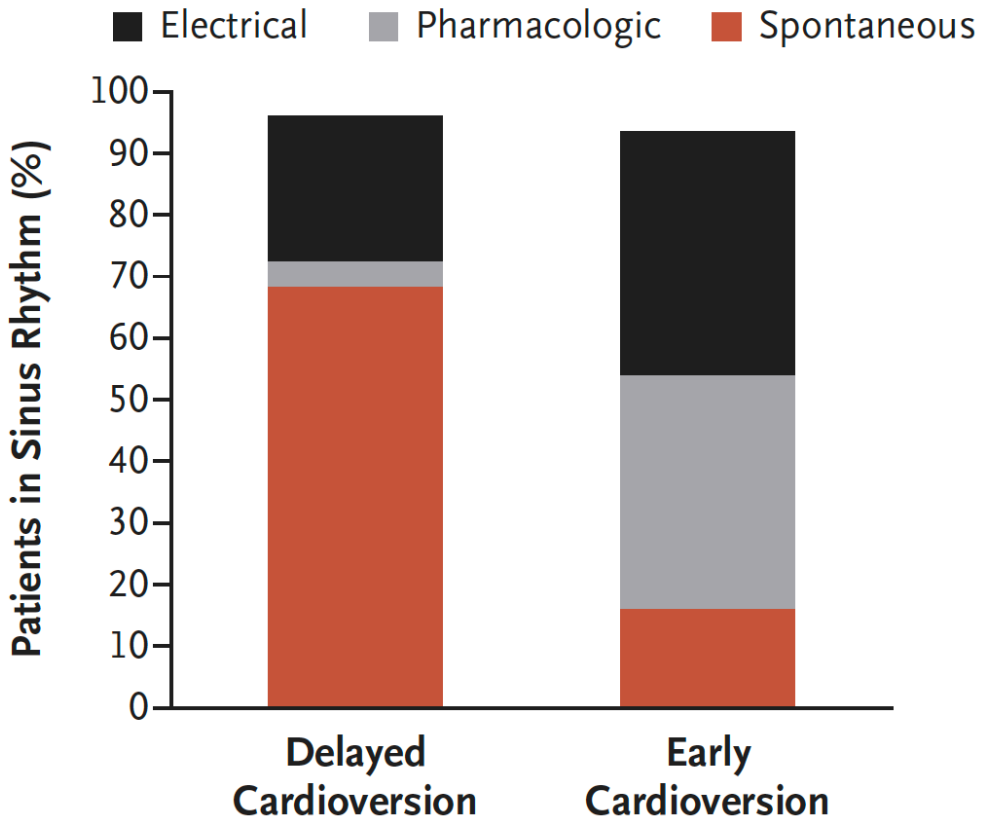
Early or Delayed Cardioversion in Recent-Onset Atrial Fibrillation

N.A.H.A. Pluymaekers, E.A.M.P. Dudink, J.G.L.M. Luermans, J.G. Meeder, T. Lenderink, J. Widdershoven, J.J.J. Bucx, M. Rienstra, O. Kamp, J.M. Van Opstal, M. Alings, A. Oomen, C.J. Kirchhof, V.F. Van Dijk, H. Ramanna, A. Liem, L.R. Dekker, B.A.B. Essers, J.G.P. Tijssen, I.C. Van Gelder, and H.J.G.M. Crijns, for the RACE 7 ACWAS Investigators*

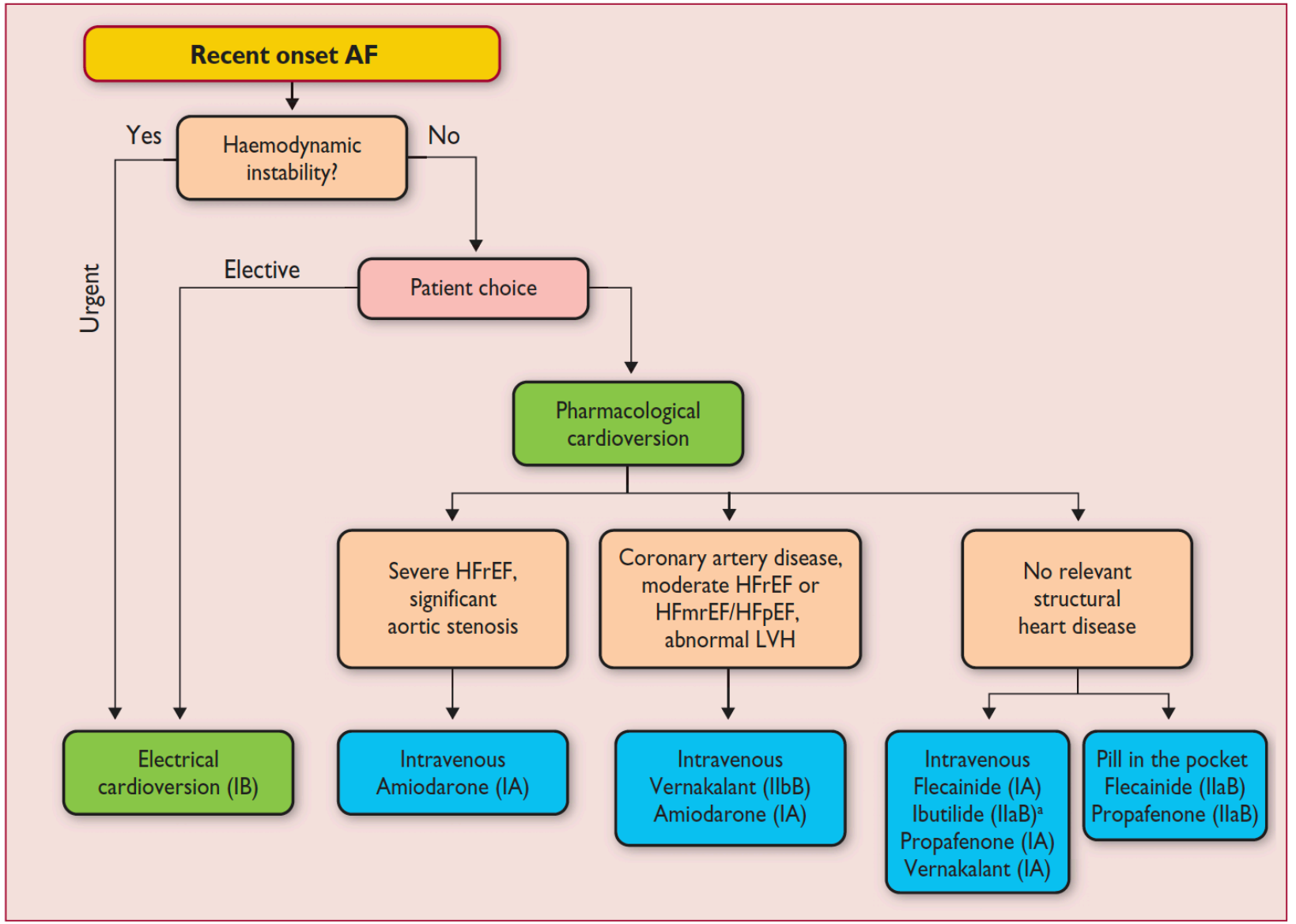
…hemodynamically stable, recent-onset (<36 hours), symptomatic atrial fibrillation in the emergency department to be treated with a wait-and-see approach (delayed-cardioversion group) or early cardioversion.

NEJM 2019: DOI: 10.1056/NEJMoa1900353

B Sinus Rhythm during Index Visit, According to Type of Cardioversion



Among the patients who completed remote monitoring during 4 weeks of follow-up, a recurrence of atrial fibrillation occurred in 49 of 164 patients (30%) in the delayed-cardioversion group and in 50 of 171 (29%) in the early cardioversion group.



AF = atrial fibrillation; HFmrEF = heart failure with mid-range ejection fraction; HFpEF = heart failure with preserved ejection fraction; HFrEF = heart failure with reduced ejection fraction; LVH = left ventricular hypertrophy.

[a]Ibutilide should not be used in patients with long QT interval.

Figure 16 Rhythm control management of recent onset atrial fibrillation.

European Heart Journal (2016) 37, 2893–2962

Table 16 Antiarrhythmic drugs for pharmacological cardioversion

Drug	Route	1st dose	Follow-up dose	Risks	Reference
Flecainide	Oral IV	200–300 mg 1.5–2 mg/kg over 10 min	N/A	Hypotension, atrial flutter with 1:1 conduction, QT prolongation. Avoid in patients with IHD and/or significant structural heart disease.	595, 598
Amiodarone	IV[a]	5–7 mg/kg over 1–2 hours	50 mg/hour to a maximum of 1.0 g over 24 hours	Phlebitis, hypotension, bradycardia/AV block. Will slow ventricular rate. Delayed conversion to sinus rhythm (8–12 hours).	596–601
Propafenone	IV Oral	1.5–2 mg/kg over 10 min 450–600 mg		Hypotension, atrial flutter with 1:1 conduction, QRS prolongation (mild). Avoid in patients with IHD and/or significant structural heart disease.	622, 625
Ibutilide[b]	IV	1 mg over 10 min	1 mg over 10 min after waiting for 10 min	QT prolongation, polymorphic ventricular tachycardia/torsades de pointes (3–4% of patients). Will slow ventricular rate. Avoid in patients with QT prolongation, hypokalemia, severe LVH or low ejection fraction.	614, 615
Vernakalant	IV	3 mg/kg over 10 min	2 mg/kg over 10 min after waiting for 15 min	Hypotension, non-sustained ventricular arrhythmias, QT and QRS prolongation. Avoid in patients with SBP <100 mmHg, recent (<30 days) ACS, NYHA Class III and IV heart failure, QT interval prolongation (uncorrected QT >440 ms) and severe aortic stenosis.	602–605, 618

ACS = acute coronary syndromes; AV = atrio-ventricular; IHD = ischaemic heart disease; i.v. = intravenous; LVH = left ventricular hypertrophy; NYHA = New York Heart Association; SBP = systolic blood pressure.

[a]Use a large peripheral vessel and change to oral amiodarone within 24 h of i.v. (central line) administration.

[b]Ibutilide is only available in selected European countries.

European Heart Journal (2016) 37, 2893–2962

The need of proper anticoagulation for cardio-version of atrial fibrillation (AF) episodes with duration≥ 48 h is well established. Nonanticoagulated patients carry a risk for thrombo-embolism of up to 10%.

Incidence of Thromboembolic Complications Within 30 Days of Electrical Cardioversion Performed Within 48 Hours of Atrial Fibrillation Onset

Aatish Garg, MD,[a] Monica Khunger, MD,[a] Sinziana Seicean, MD, MPH, PhD,[b] Mina K. Chung, MD,[b] Patrick J. Tchou, MD[b]

… However, **no events** occurred in **postoperative** patients and in those with **CHA2DS2-VASc scores of <2 (0, 1)**, supporting the utility of accurate assessment of AF onset and risk stratification in determining the need for anticoagulation for cardioversion of AF **<48 h in duration**.

JACC Clin Electrophysiol. 2016;2:487-494.
JACC Clin Electrophysiol. 2016;2:495-497.

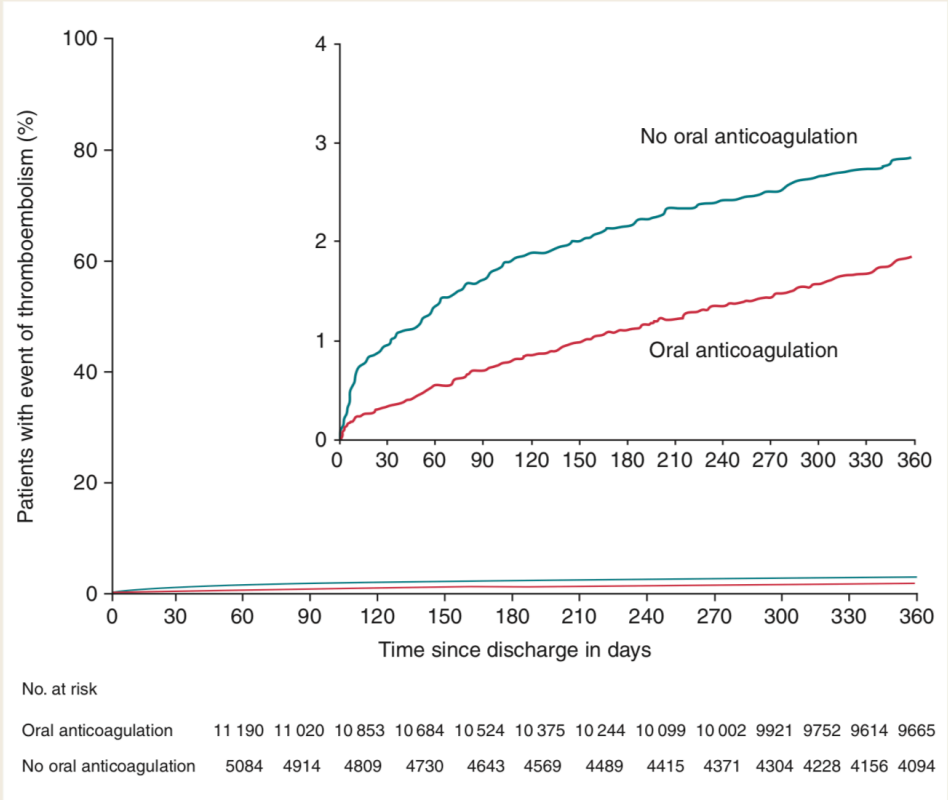
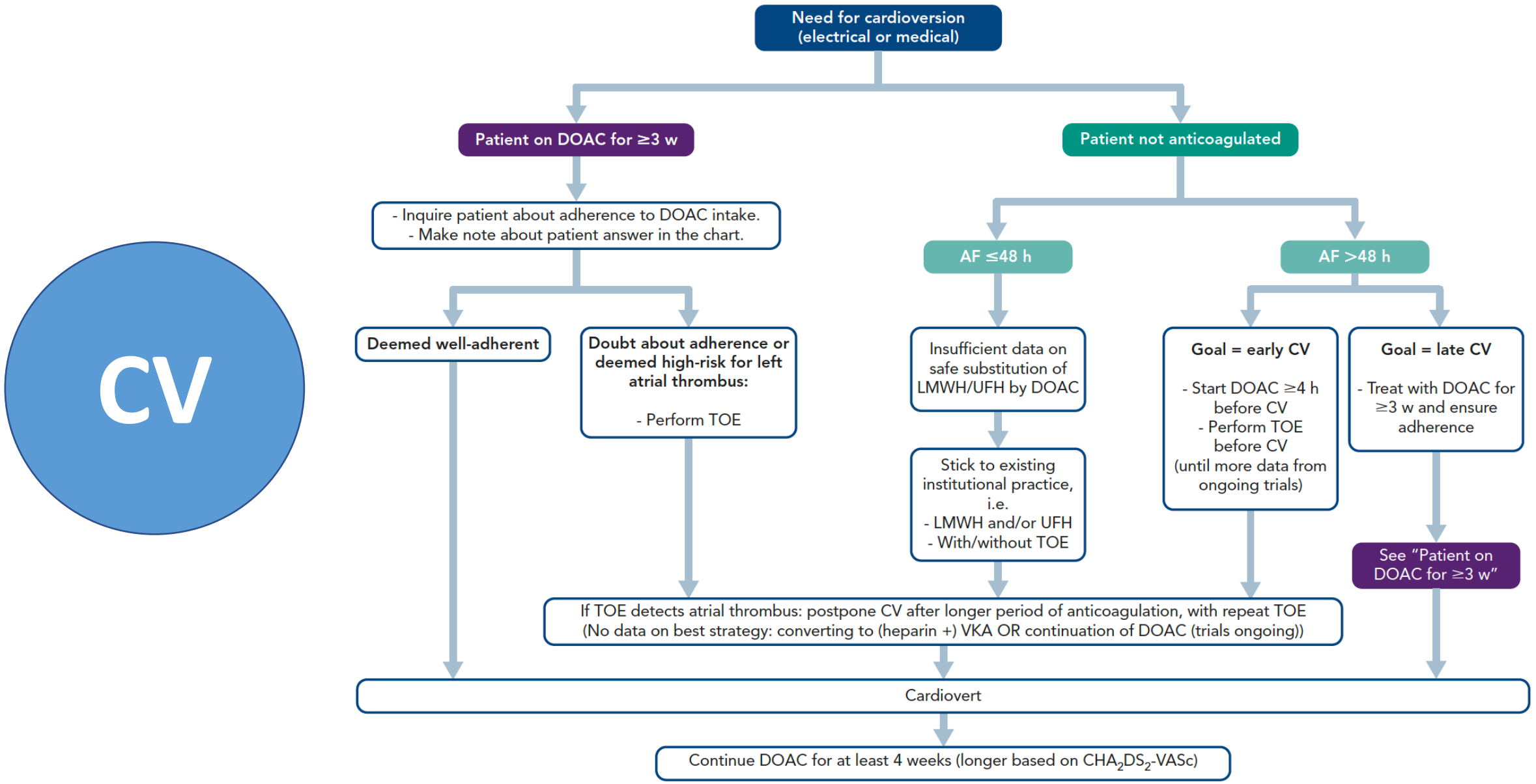
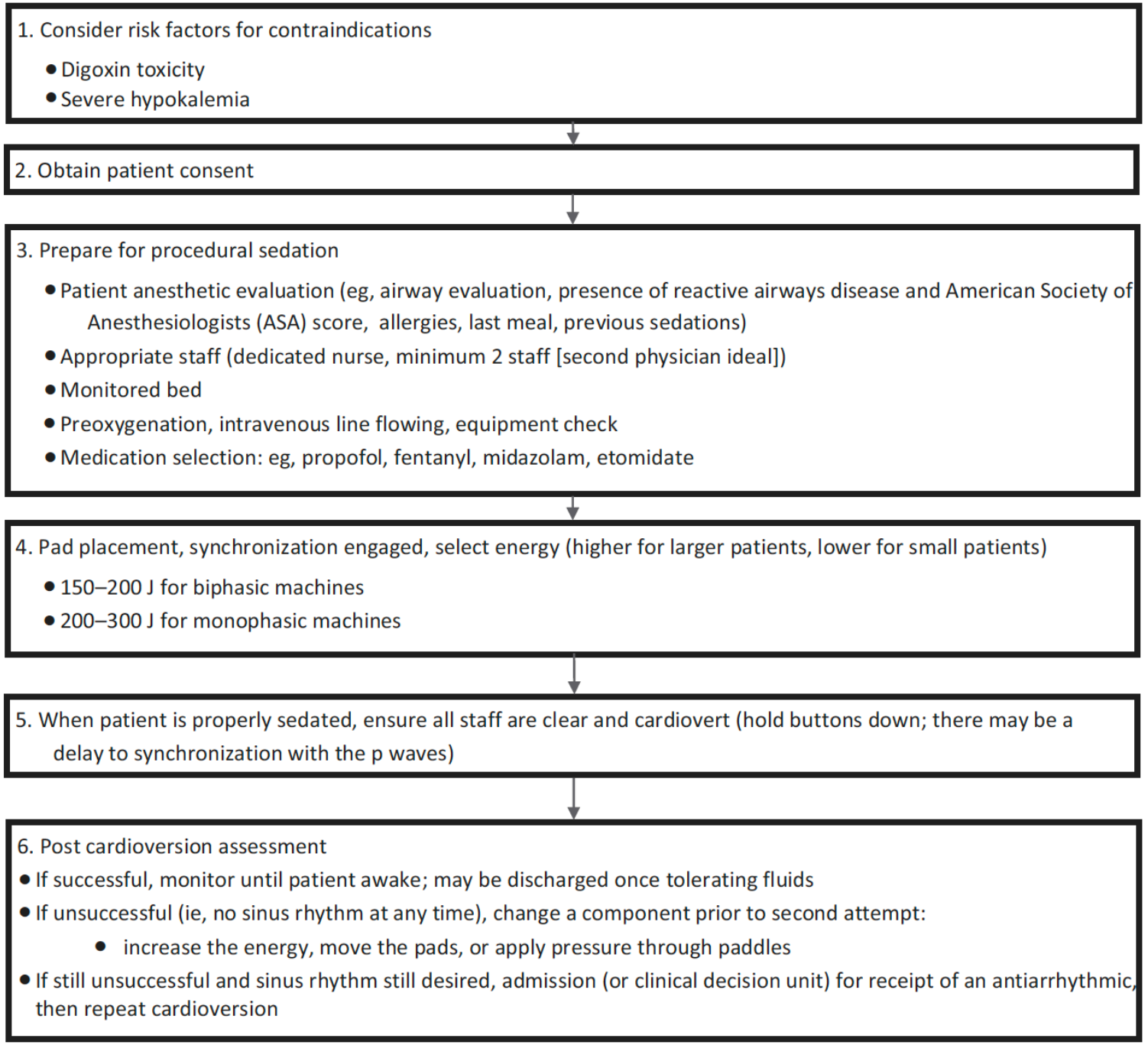


Figure 1 Kaplan Meijer curves for the outcome of thrombo-embolism after discharge for DC cardioversion of atrial fibrillation.

Europace (2015) 17, 18–23

Figure 2: Cardioversion Flowchart in Patients with AF Treated with Direct Oral Anticoagulants

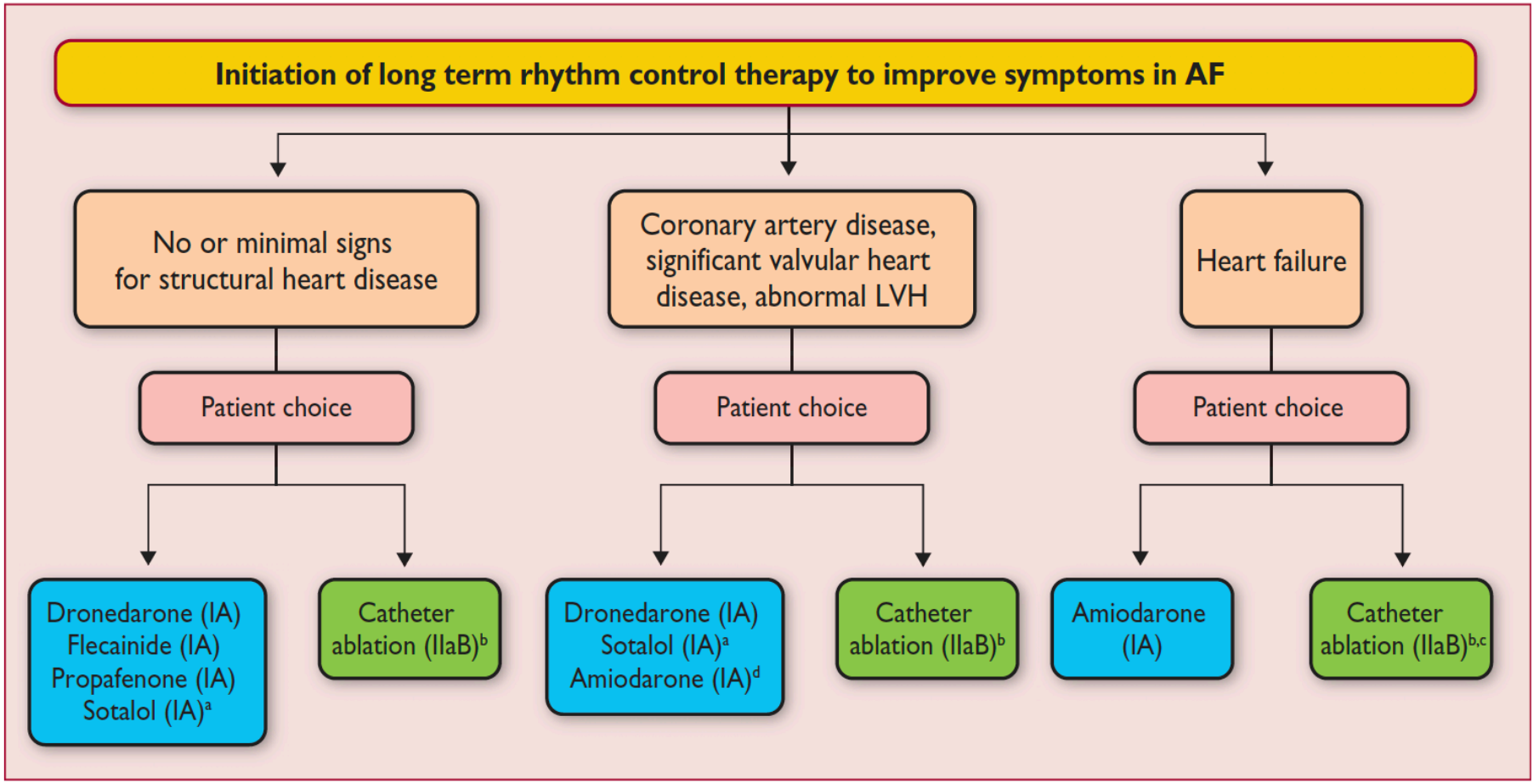




Cardiol Clin. 2018 Feb;36(1):141-159.

Fig. 3. Performing electrical cardioversion.

EP



AF = atrial fibrillation; HF = heart failure; LVH = left ventricular hypertrophy;
[a]Sotalol requires careful evaluation of proarrhythmic risk.
[b]Catheter ablation should isolate pulmonary veins and can be performed using radiofrequency or cryoballoon catheters.
[c]Catheter ablation as a first-line therapy is usually reserved for heart failure patients with tachycardiomyopathy.
[d]Amiodarone is a second-choice therapy in many patients because of its extracardiac side-effects.

Figure 17 Initiation of long-term rhythm control therapy in symptomatic patients with atrial fibrillation.

Integrated AF management			
Patient involvement	**Multidisciplinary teams**	**Technology tools**	**Access to all treatment options for AF**
• Central role in care process • Patient education • Encouragement and empowerment for self-management • Advice and education on lifestyle and risk factor management • Shared decision making	• Phycisians (general physicians, cardiology and stroke AF specialists, surgeons) and allied health professionals work in a collaborative practice model • Efficient mix of communication skills, education, and experience	• Information on AF • Clinical decision support • Checklist and communication tools • Used by healthcare professionals and patients • Monitoring of therapy adherence and effectiveness	• Structured support for lifestyle changes • Anticoagulation • Rate control • Antiarrhythmic drugs • Catheter and surgical interventions (ablation, LAA occluder, AF surgery, etc.)
• ***Informed, involved, empowered patient***	• ***Working together in a multidisciplinary chronic AF care team***	• ***Navigation system to support decision making in treatment team***	• ***Complex management decisions underpinned by an AF Heart Team***

AF = atrial fibrillation; LAA = left atrial appendage.

Figure 7 Fundamentals of integrated care in atrial fibrillation patients.

European Heart Journal (2016) 37, 2893–2962

Vielen Dank!