

Kodade virvenduse käsitus

Rein Kolk

SA TÜK Südamekliinik

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Guidelines for the management of atrial fibrillation

The Task Force for the Management of Atrial Fibrillation of the European Society of Cardiology (ESC)

Developed with the special contribution of the European Heart Rhythm Association (EHRA)[†]

Endorsed by the European Association for Cardio-Thoracic Surgery (EACTS)

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ESC GUIDELINES

2012 focused update of the ESC Guidelines for the management of atrial fibrillation

An update of the 2010 ESC Guidelines for the management of atrial fibrillation

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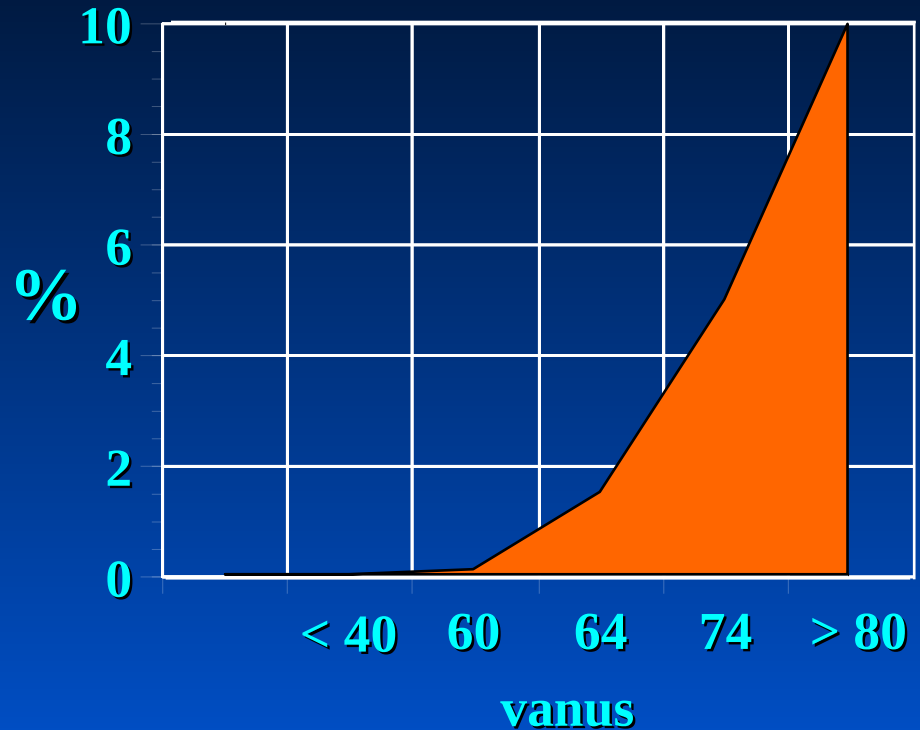
Kodade virvendusarütmia (KVA) kliiniline tähendus

- Esinemisagedus kasvab
- Ajuinfarkti risk 5x ja südamepuudulikkuse risk 3x kõrgem
- Elukvaliteedi langus, suremuse kasv
- Sagedaseim hospitaliseerimist vajav arütmia



KVA esinemissagedus

- Üldpopulatsioonis
1.5 - 2%
- Haigete keskmine
vanus 75 - 85 a.
- Meestel sageneb

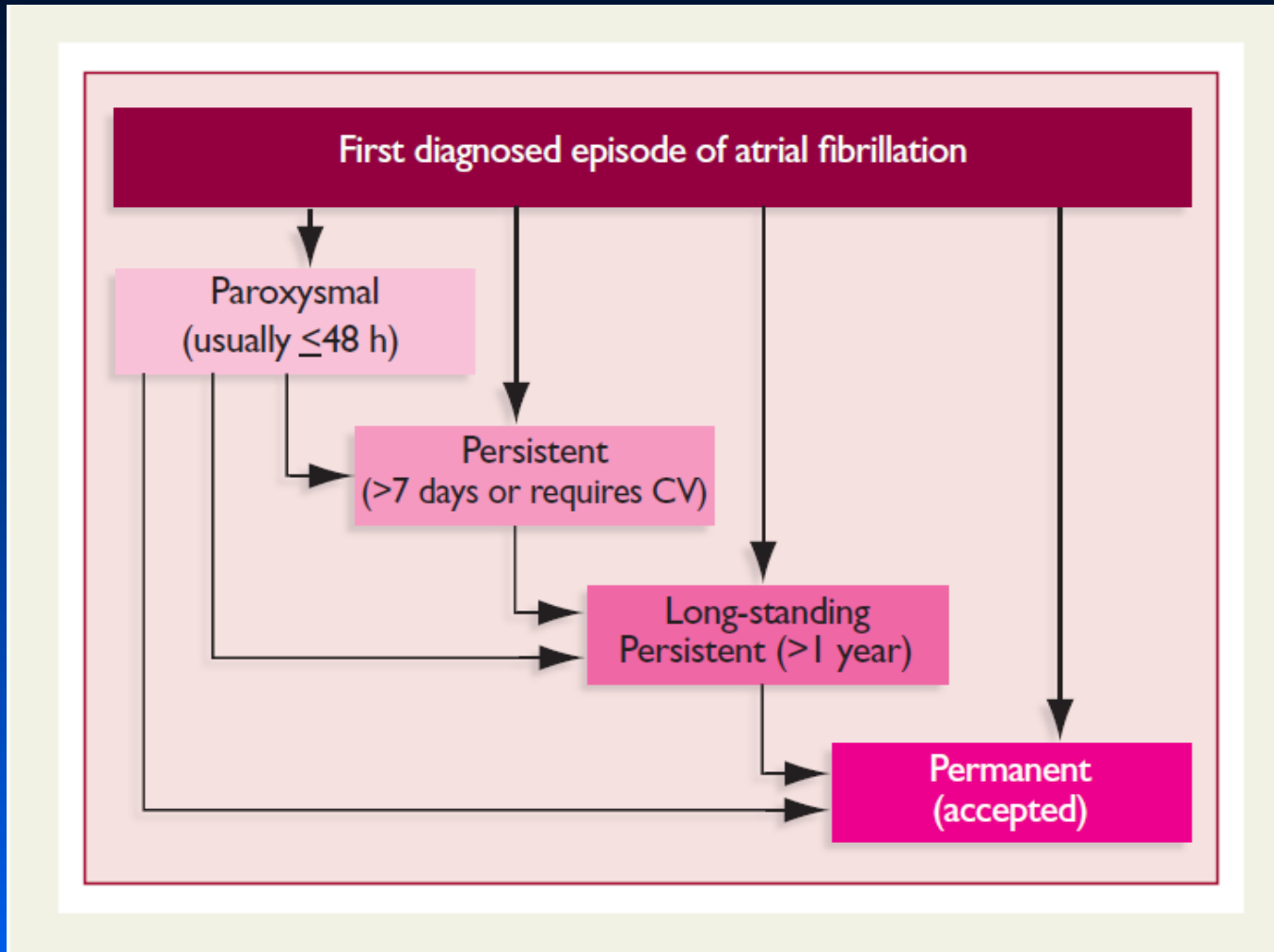


KVA skriining

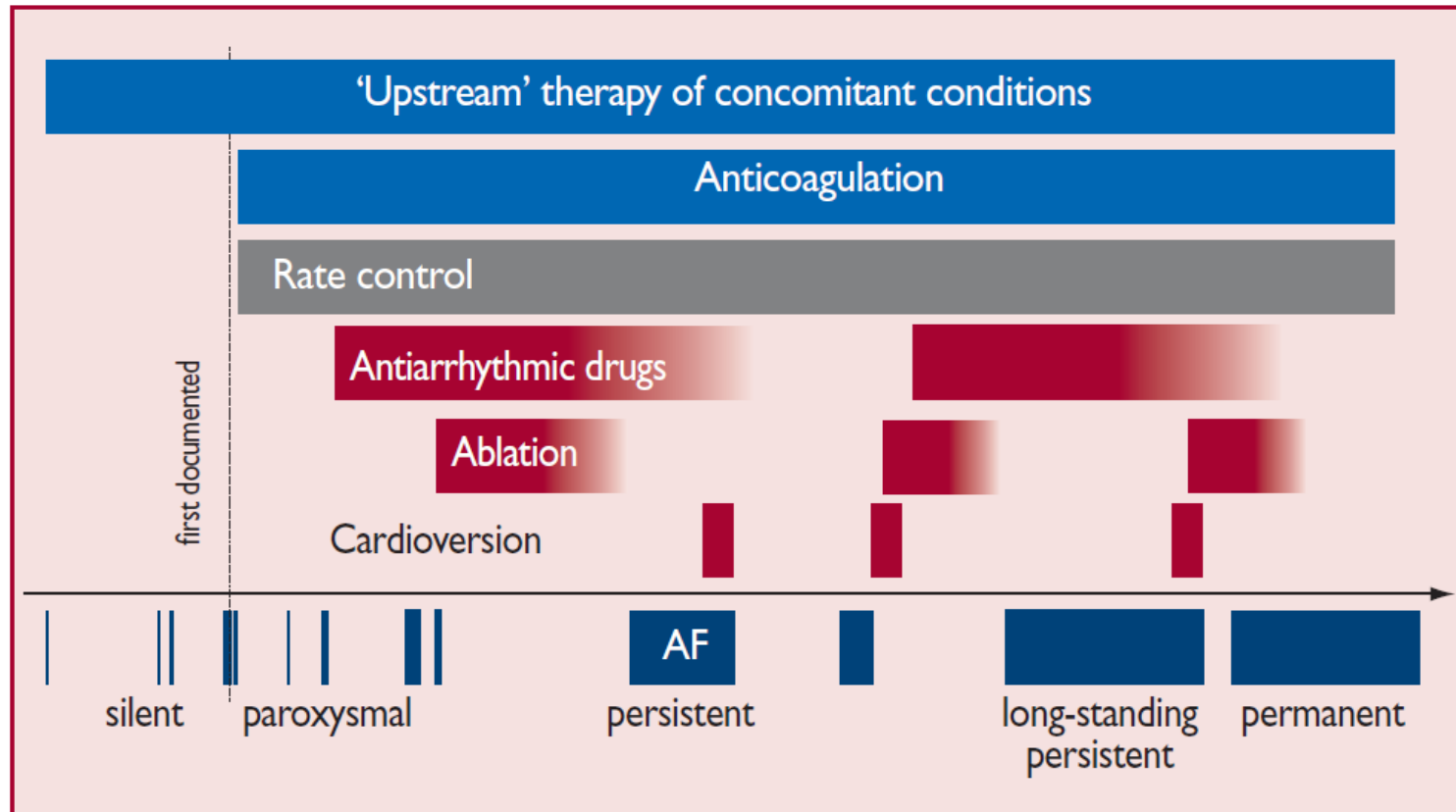
Recommendations	Class^a	Level^b	Ref^c
Opportunistic screening for AF in patients ≥ 65 years of age using pulse-taking followed by an ECG is recommended to allow timely detection of AF.	I	B	14, 15

AF = atrial fibrillation; ECG = electrocardiogram.

KVA jaotus



KVA kulg



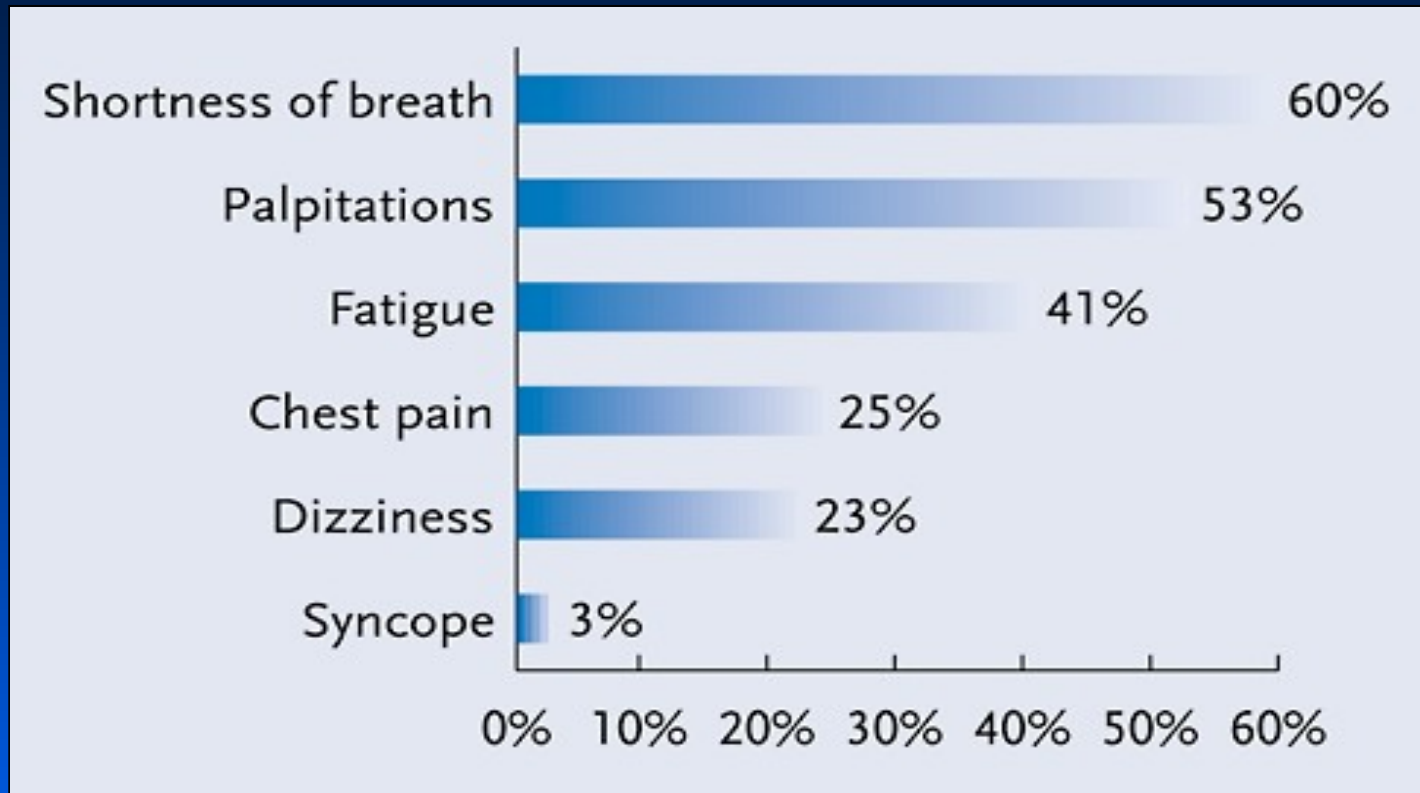
KVA ja hemodünaamika

- Kodade sünkroniseeritud kontraktsiooni puudumine
 - Südamerütmi ebakorrapärasus
 - Tahhükardia



SI ja CI langus → südamepuudulikkus

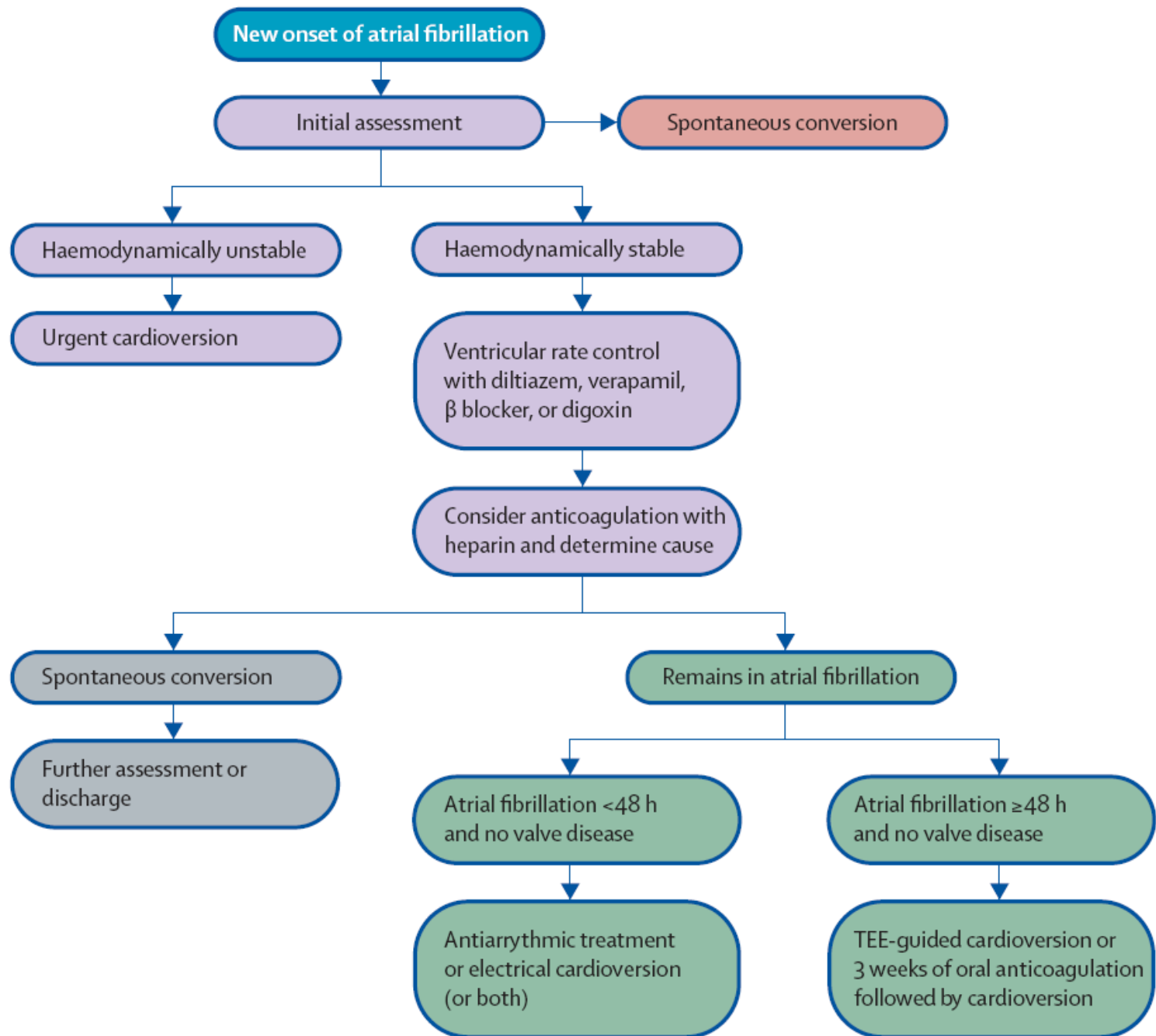
KVA sümptomatoloogia



KVA skoorung EHRA järgi

Classification of AF-related symptoms (EHRA score)	
EHRA class	Explanation
EHRA I	'No symptoms'
EHRA II	'Mild symptoms'; normal daily activity not affected
EHRA III	'Severe symptoms'; normal daily activity affected
EHRA IV	'Disabling symptoms'; normal daily activity discontinued

AF = atrial fibrillation; EHRA = European Heart Rhythm Association.



Ajuinfakti riskifaktorid mittevalvulaarse KVA korral - CHADS₂

Mõõduka riski faktorid

- Südamepuudulikkus 1 punkt
- Arteriaalne hüpertensioon 1 punkt
- Vanus ≥ 75 a 1 punkt
- Suhkurdiabeet 1 punkt

Kõrge riski faktorid

- Varasem ajuinfarkt või TIA 2 punkti

Mitraalstenoos

Mehhaanilised südameklapi proteesid

0-1 p – ajuinfarkti risk 2-3% aastas, 6 p 18% aastas

CHA₂DS₂VASc skoorling

(a) Risk factors for stroke and thrombo-embolism in non-valvular AF	
'Major' risk factors	'Clinically relevant non-major' risk factors
Previous stroke, TIA, or systemic embolism Age ≥ 75 years	Heart failure or moderate to severe LV systolic dysfunction (e.g. LV EF $\leq 40\%$) Hypertension - Diabetes mellitus Female sex - Age 65–74 years Vascular disease ^a
(b) Risk factor-based approach expressed as a point based scoring system, with the acronym CHA ₂ DS ₂ -VASc (Note: maximum score is 9 since age may contribute 0, 1, or 2 points)	
Risk factor	Score
Congestive heart failure/LV dysfunction	1
Hypertension	1
Age ≥ 75	2
Diabetes mellitus	1
Stroke/TIA/thrombo-embolism	2
Vascular disease ^a	1
Age 65–74	1
Sex category (i.e. female sex)	1
Maximum score	9

HAS BLED skoring

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

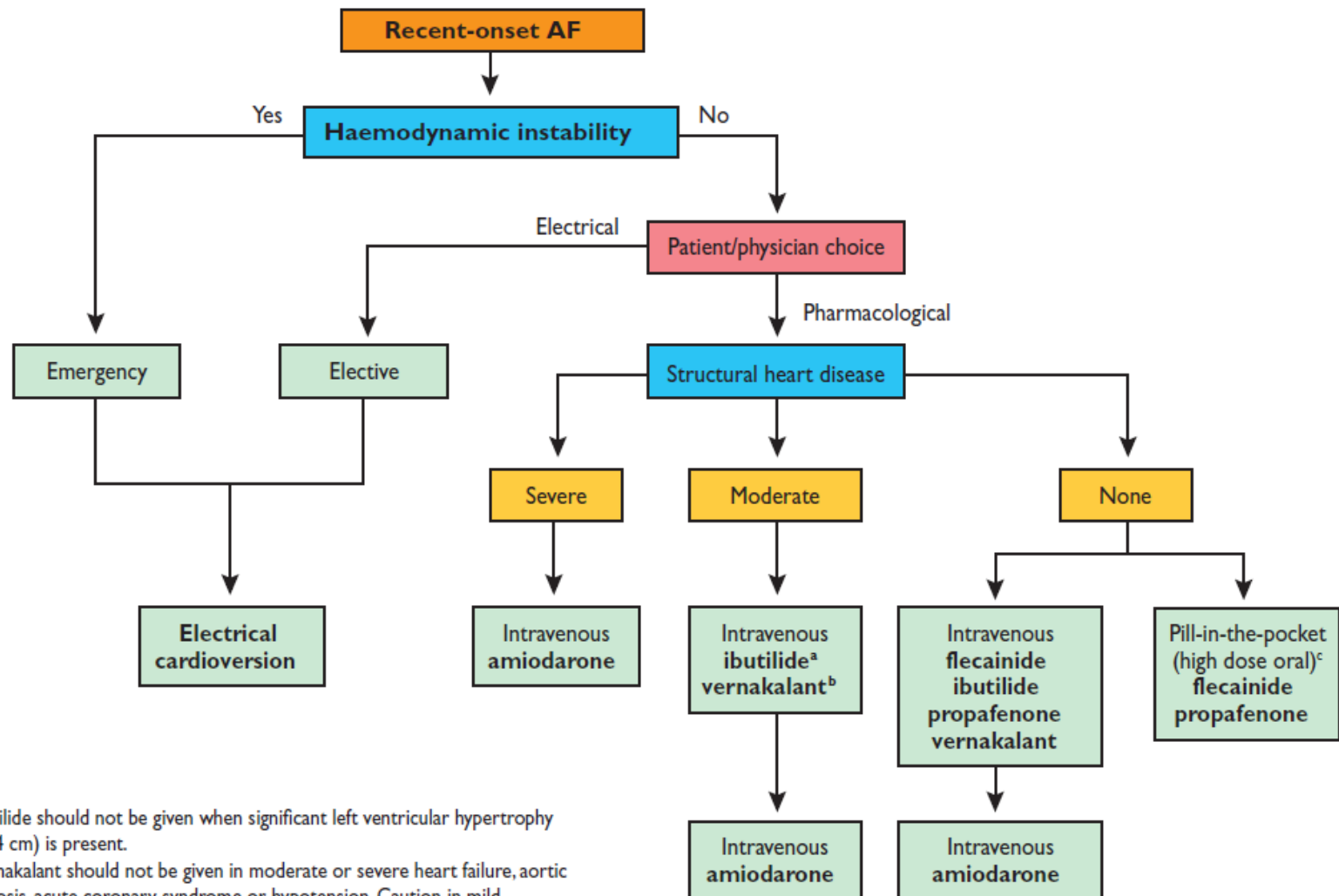
Antitrombootiline ravi KVA korral

- Kõrge trombemboolilise riskiga haigete asemel välja selgitada madala riski haiged
- Riskifaktoriteta haiged: ravita
- Trombemboolilise riskiga haiged: antikoagulantravi (Warfarin INR= 2 – 3, uued suukaudsed antikoagulandid)
 - Meh. klapiproteeside korral INR>2.5
- Antiagregantravi (Aspiriin monoterapia või kombinatsioon Klopidoogreeliga) neil, kellel pole antikoagulandid kasutatavad

Vasaku koja kõrva sulgemine / eemaldamise näidustused

Recommendations	Class ^a	Level ^b	Ref ^c
Interventional, percutaneous LAA closure may be considered in patients with a high stroke risk and contraindications for long-term oral anticoagulation.	IIb	B	115, 118
Surgical excision of the LAA may be considered in patients undergoing open heart surgery.	IIb	C	

LAA = left atrial appendage.



^aIbutilide should not be given when significant left ventricular hypertrophy (≥ 1.4 cm) is present.

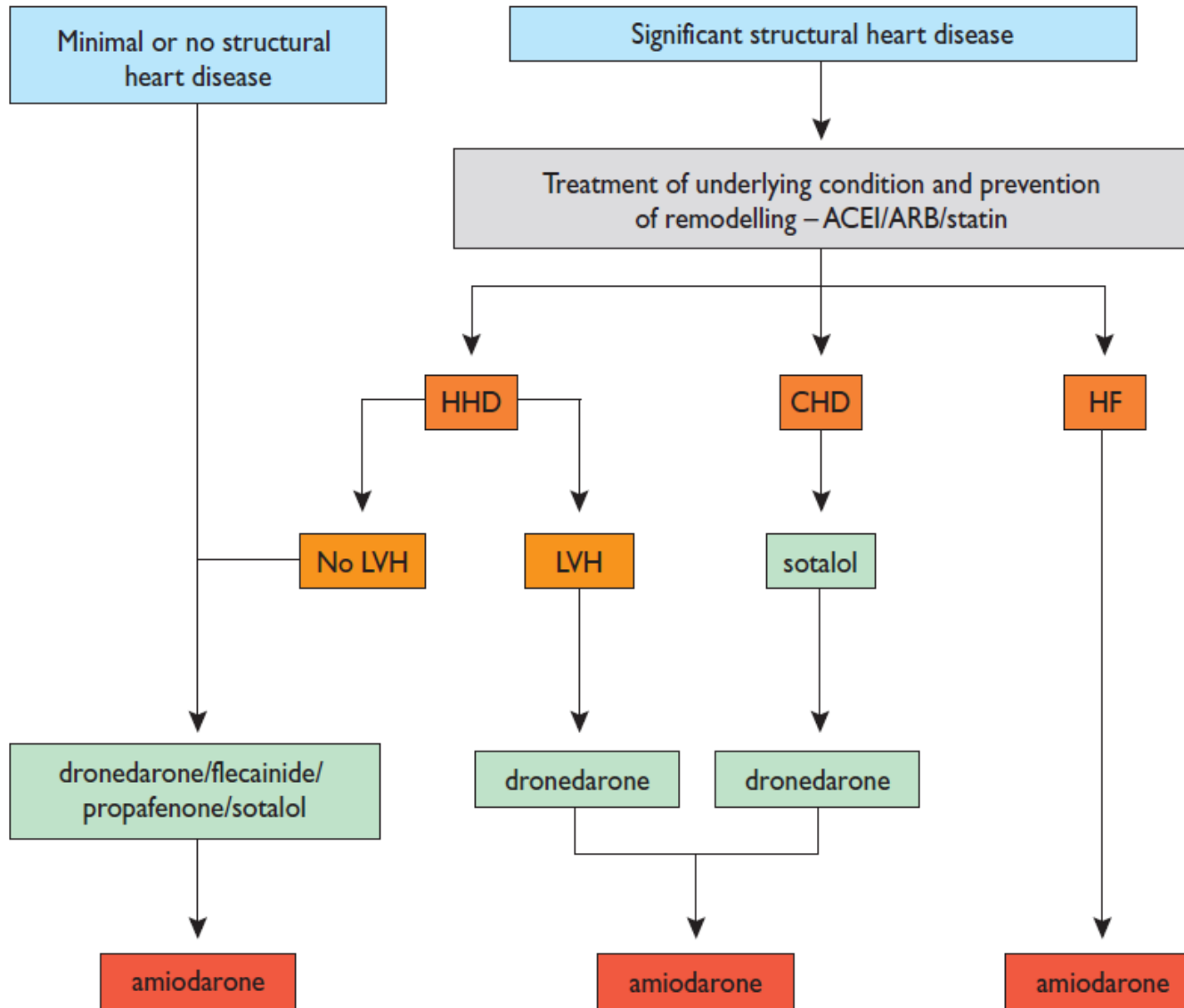
^bVernakalant should not be given in moderate or severe heart failure, aortic stenosis, acute coronary syndrome or hypotension. Caution in mild heart failure.

^c'Pill-in-the-pocket' technique – preliminary assessment in a medically safe environment and then used by the patient in the ambulatory setting.

Figure 3 Indications for electrical and pharmacological cardioversion, and choice of antiarrhythmic drugs for pharmacological cardioversion in patients with recent-onset AF.

Recommendations for pharmacological cardioversion of recent-onset AF

Recommendations	Class ^a	Level ^b	Ref ^c
When pharmacological cardioversion is preferred and there is no or minimal structural heart disease, intravenous flecainide, propafenone, ibutilide, or vernakalant are recommended.	I	A	120, 121, 123, 124, 126, 127, 131–134
In patients with AF ≤ 7 days and moderate structural heart disease [but without hypotension < 100 mm Hg, NYHA class III or IV heart failure, recent (< 30 days) ACS, or severe aortic stenosis], intravenous vernakalant may be considered. Vernakalant should be used with caution in patients with NYHA class I–II heart failure.	IIb	B	120, 121, 124, 128
Intravenous vernakalant may be considered for cardioversion of postoperative AF ≤ 3 days in patients after cardiac surgery.	IIb	B	122



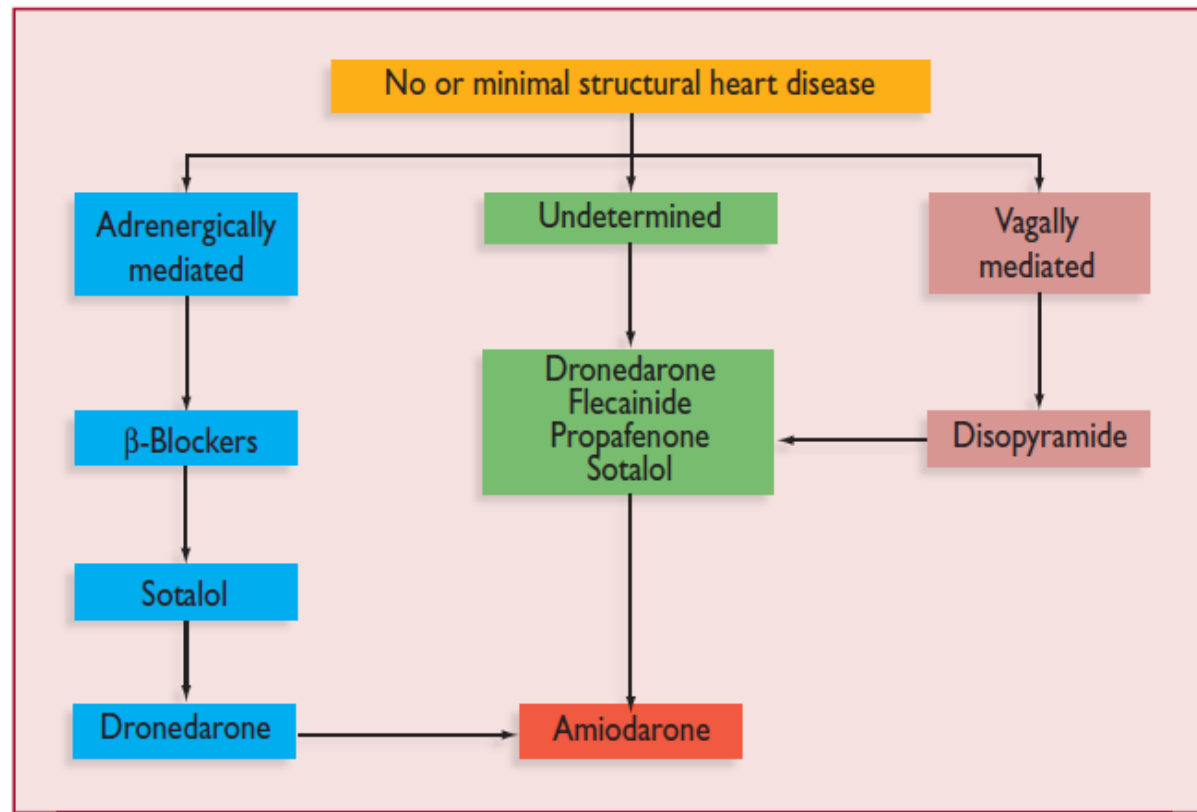
ACEI = angiotensin-converting enzyme inhibitor; ARB = angiotensin-receptor blocker; HHD = hypertensive heart disease; CHD = coronary heart disease; HF = heart failure; LVH = left ventricular hypertrophy, NYHA = New York Heart Association. Antiarrhythmic agents are listed in alphabetical order within each treatment box.

Figure 4 Choice of antiarrhythmic drug according to underlying pathology.

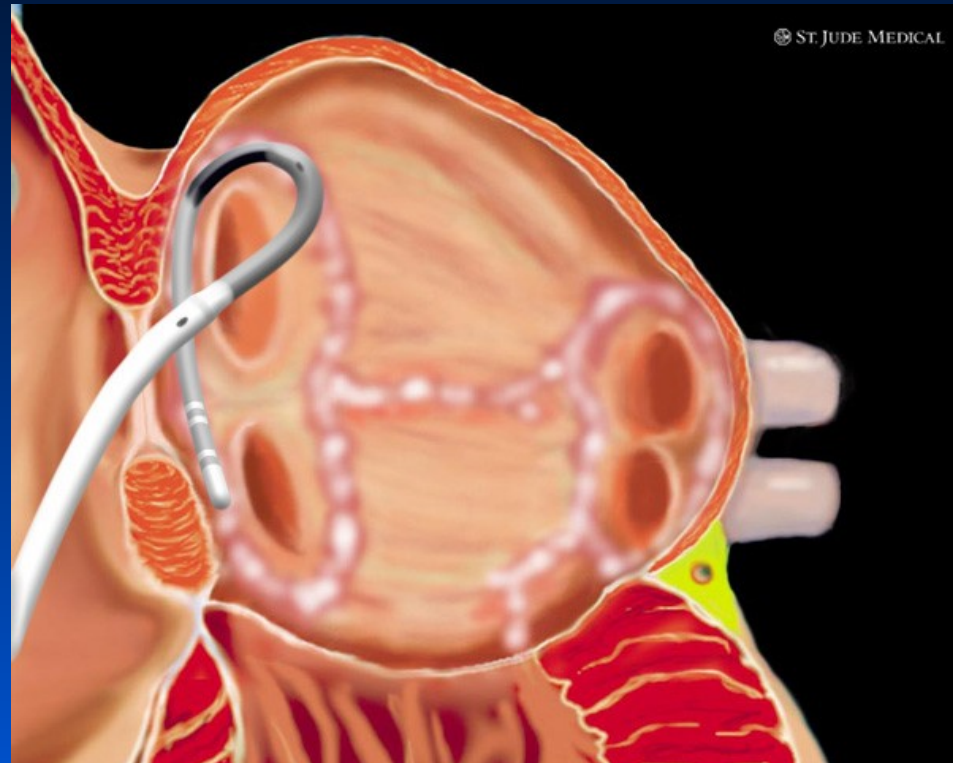
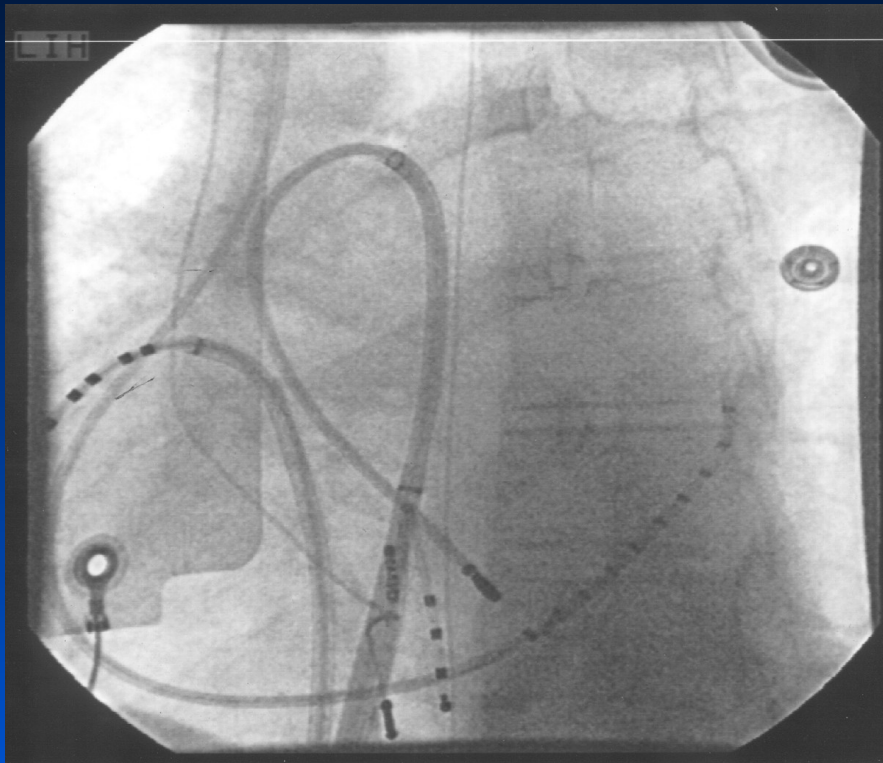
Dronedaroon - näidustused

- III klassi antiarütmikum
- Näidustus: varasema või olemasoleva mittepüsiva KVA täiskasvanud kliiniliselt stabiilsetele patsientidele KVA taastekke ärahoidmiseks või vatsakeste kontraktsioonisageduse aeglustamiseks
- 2/3 kordarooni efektiivsusest
- Annustamine p/o: 400 mg b.i.d.
- CYP3A4 inhibiitor
- Maksafunktsiooni kontroll enne ravi ja 1x kuus 6 kuu jooksul, 9. ja 12. ravikuul

“Lone” e. isoleeritud KVA ravi

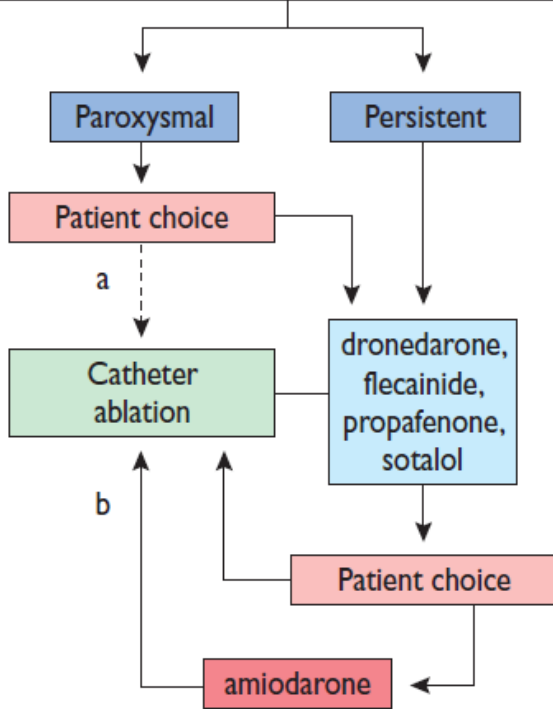


KVA kateeterablatsioon

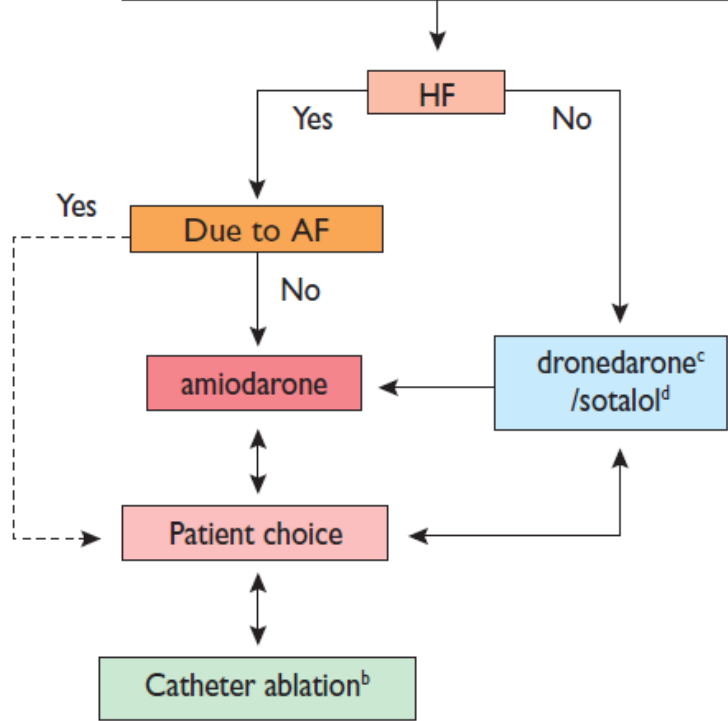


LAO view

No or minimal structural heart disease



Relevant structural heart disease



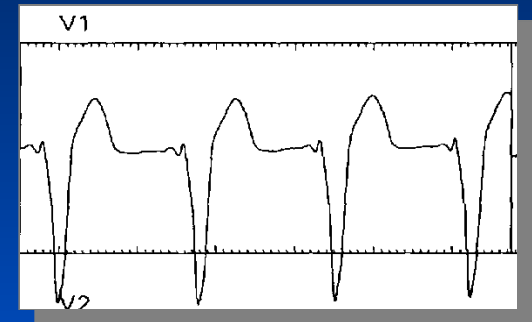
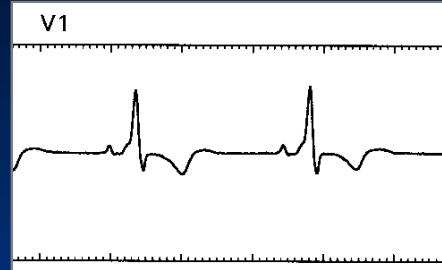
AF = atrial fibrillation; HF = heart failure. ^aUsually pulmonary vein isolation is appropriate. ^bMore extensive left atrial ablation may be needed. ^cCaution with coronary heart disease. ^dNot recommended with left ventricular hypertrophy. Heart failure due to AF = tachycardiomyopathy.

Figure 5 Antiarrhythmic drugs and/or left atrial ablation for rhythm control in AF.

Recommendations for left atrial ablation

Recommendations	Class ^a	Level ^b	Ref ^c
Catheter ablation of symptomatic paroxysmal AF is recommended in patients who have symptomatic recurrences of AF on antiarrhythmic drug therapy (amiodarone, dronedarone, flecainide, propafenone, sotalol) and who prefer further rhythm control therapy, when performed by an electrophysiologist who has received appropriate training and is performing the procedure in an experienced centre.	I	A	192, 193
Catheter ablation of AF should target isolation of the pulmonary veins.	IIa	A	170, 172, 192, 194
Catheter ablation of AF should be considered as first-line therapy in selected patients with symptomatic paroxysmal AF as an alternative to antiarrhythmic drug therapy, considering patient choice, benefit, and risk.	IIa	B	156–158
When catheter ablation of AF is planned, continuation of oral anticoagulation with a VKA should be considered during the procedure, maintaining an INR close to 2.0.	IIa	B	170, 181–184
When AF recurs within the first 6 weeks after catheter ablation, a watch-and-wait rhythm control therapy should be considered.	IIa	B	195

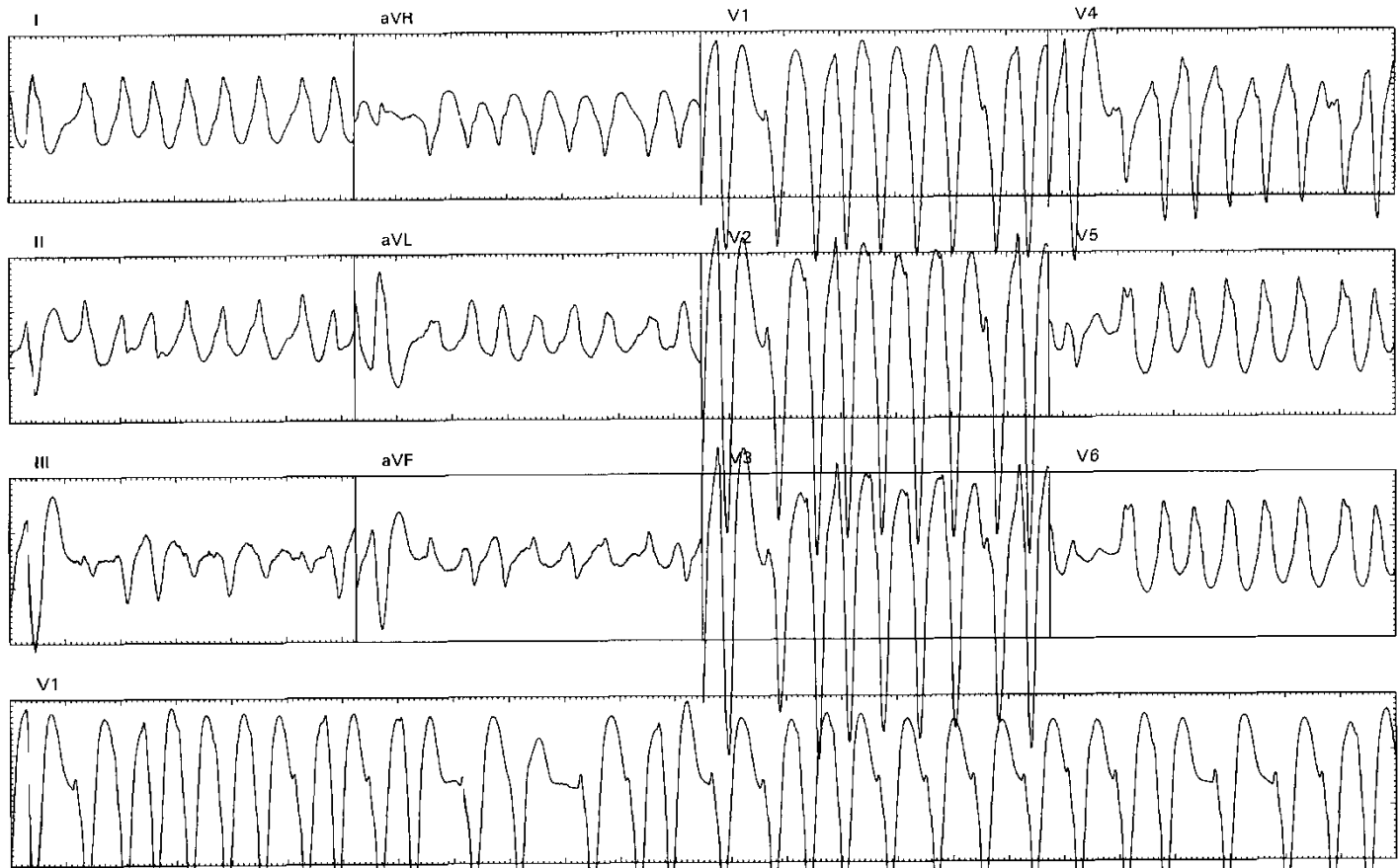
Dr. Wolff, Parkinson, White



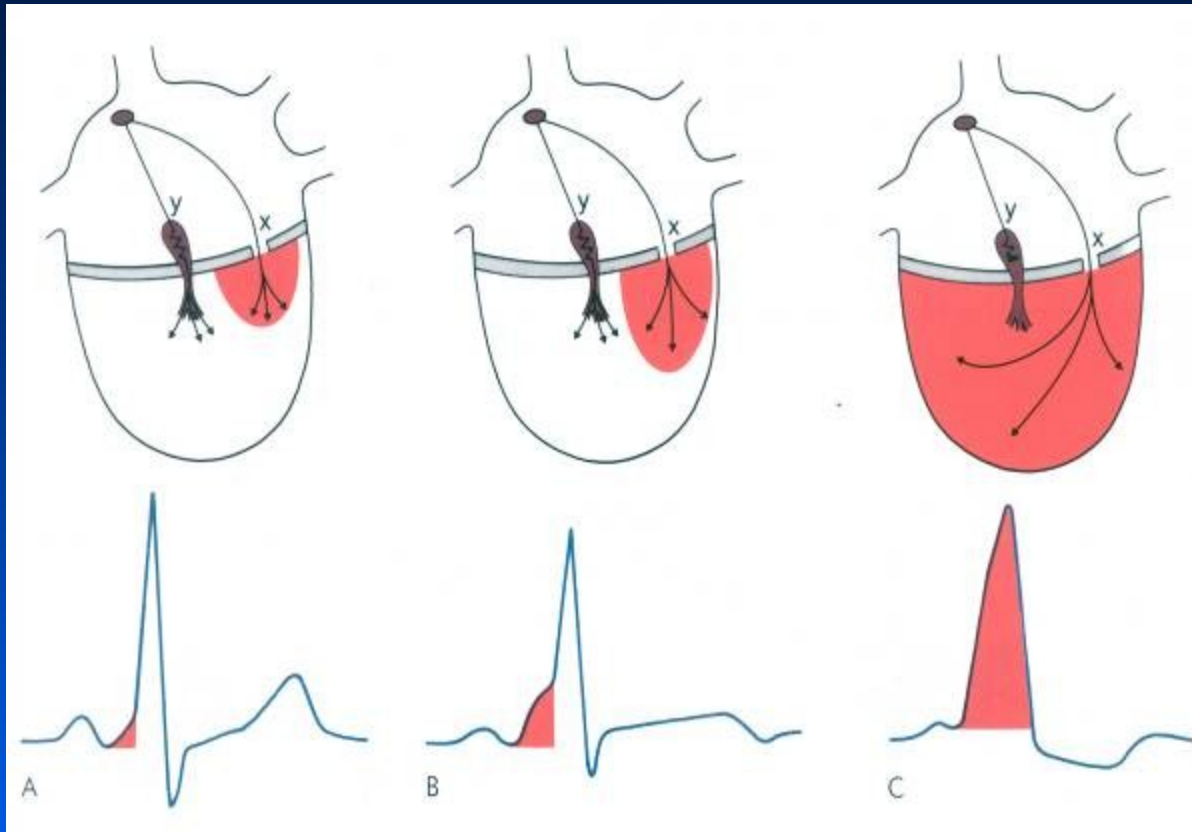
Wolff L, Parkinson J, White PD (1930). Bundle-branch block with short PR interval in healthy young people prone to paroxysmal tachycardia. *Am Heart J* 5:685-704.

Pre-eksiteeritud KVA

25mm/s
10mm/mV (Limb)
10mm/mV (Chest)
100Hz



WPW sündroom



KVA kirurgilise ravi näidustused

Recommendations	Class ^a	Level ^b	Ref. ^c
Surgical ablation of AF should be considered in patients with symptomatic AF undergoing cardiac surgery.	IIa	A	139, 141, 142
Surgical ablation of AF may be performed in patients with asymptomatic AF undergoing cardiac surgery if feasible with minimal risk.	IIb	C	
Minimally invasive surgical ablation of AF without concomitant cardiac surgery is feasible and may be performed in patients with symptomatic AF after failure of catheter ablation.	IIb	C	

Sageduskontroll

Südamesagedus permanentse KVA korral:

- Rahuolekus: <80 l/min
- Mõõdukal füüsilised koormusel: <110 l/min
 - Beetablokaatorid
 - Verapamiil
 - Digoksiin
 - Pre-eksitatsioon: propafenoon, amiodaroon

KVA - lõpetuseks

- Kaasuvate haiguste ravi / arütmiaid vallandavate faktorite korrigeerimine
- Antiarütmilise ravi ohutus on prioriteetne
- Võimalusel eelistada lühema poolväärtusajaga antiarütmikume
- Antitrombootiline ravi >48h kestnud arütmia korral
- Hospitaliseerimist vajavad ainult tüsistunud / väljendunud hemadünaamika häirega patsiendid
- Kodade virvendusarütmia ambulatoorne ravi on haiglaravist 25-30x odavam

Simplified AHA Atrial Fibrillation Treatment Guidelines

