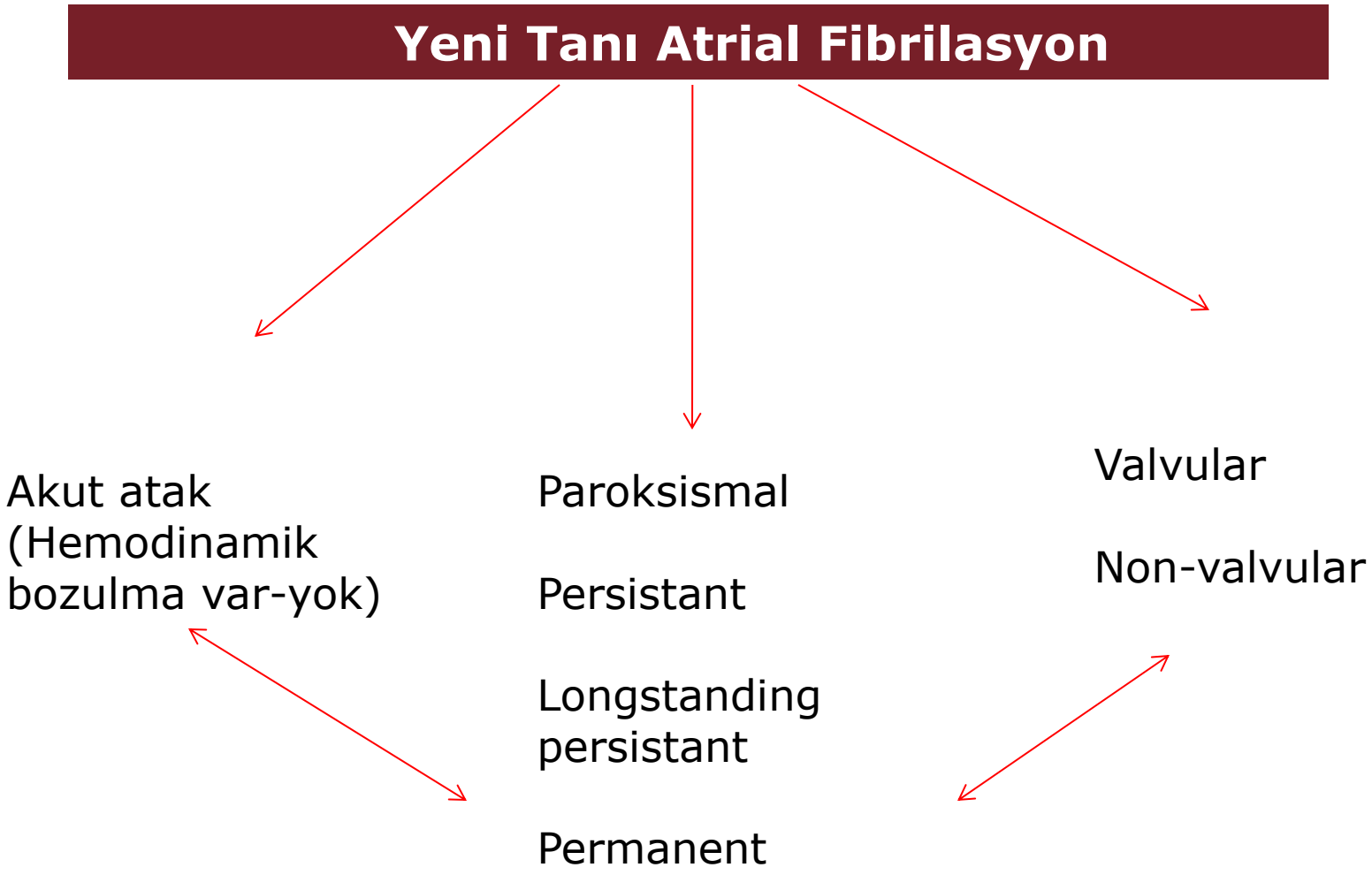
Yeni Tanı Atrial Fibrilasyona Yaklaşım

Dr Özlem Özcan Çelebi

Atrial Fibrilasyon Zirvesi 2014


Yeni Tanı Atrial Fibrilasyon
Akut atak
(Hemodinamik
bozulma var-yok)
Paroksismal
Persistant
Longstanding
persistant
Permanent
Valvular
Non-valvular

Minimum Evaluation

1. History and physical examination, to define	• Presence and nature of symptoms associated with AF
	• Clinical type of AF (paroxysmal, persistent, or permanent)
	• Onset of the first symptomatic attack or date of discovery of AF
	• Frequency, duration, precipitating factors, and modes of initiation or termination of AF
	• Response to any pharmacological agents that have been administered
	• Presence of any underlying heart disease or reversible conditions (e.g., hyperthyroidism or alcohol consumption)
2. ECG, to identify	• Rhythm (verify AF)
	• LVH
	• P-wave duration and morphology or fibrillatory waves
	• Pre-excitation
	• Bundle-branch block
	• Prior MI
	• Other atrial arrhythmias
	• To measure and follow the R-R, QRS, and QT intervals in conjunction with antiarrhythmic drug therapy
3. TTE, to identify	• VHD
	• LA and RA size
	• LV and RV size and function
	• Peak RV pressure (pulmonary hypertension)
	• LV hypertrophy
	• LA thrombus (low sensitivity)
	• Pericardial disease
4. Blood tests of thyroid, renal, and hepatic function	• For a first episode of AF
	• When the ventricular rate is difficult to control

Additional Testing (1 or several tests may be necessary)

1. 6-min walk test	• If the adequacy of rate control is in question
2. Exercise testing	• If the adequacy of rate control is in question
	• To reproduce exercise-induced AF
	• To exclude ischemia before treatment of selected patients with a type IC* antiarrhythmic drug
3. Holter or event monitoring	• If diagnosis of the type of arrhythmia is in question
	• As a means of evaluating rate control
4. TEE	• To identify LA thrombus (in the LAA)
	• To guide cardioversion
5. Electrophysiological study	• To clarify the mechanism of wide-QRS-complex tachycardia
	• To identify a predisposing arrhythmia such as atrial flutter or paroxysmal supraventricular tachycardia
	• To seek sites for curative AF ablation or AV conduction block/modification
6. Chest radiograph, to evaluate	• Lung parenchyma, when clinical findings suggest an abnormality
	• Pulmonary vasculature, when clinical findings suggest an abnormality

Yeni tanı Atrial Fibrilasyon

Hemodinamik bozulma → **Elektriksel Kardiyoversiyon**

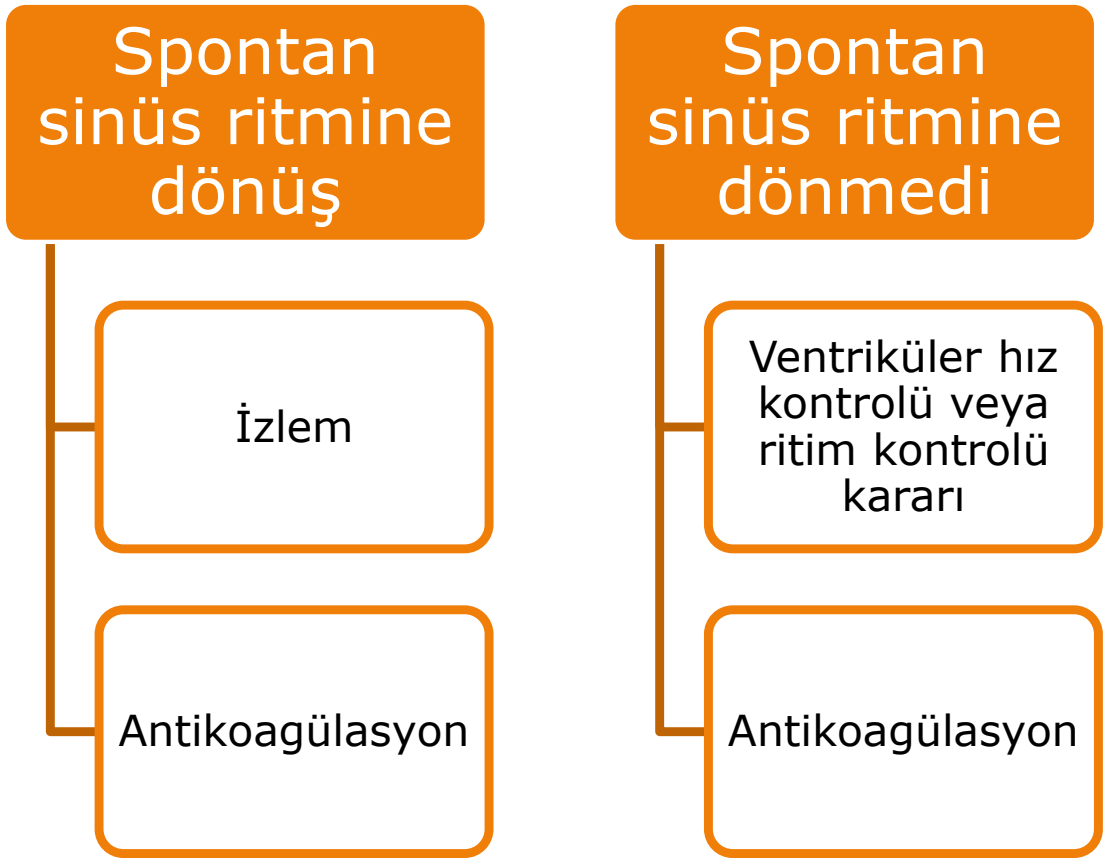
Stabilizasyon sağlanınca uzun dönem tedavi kararını ver

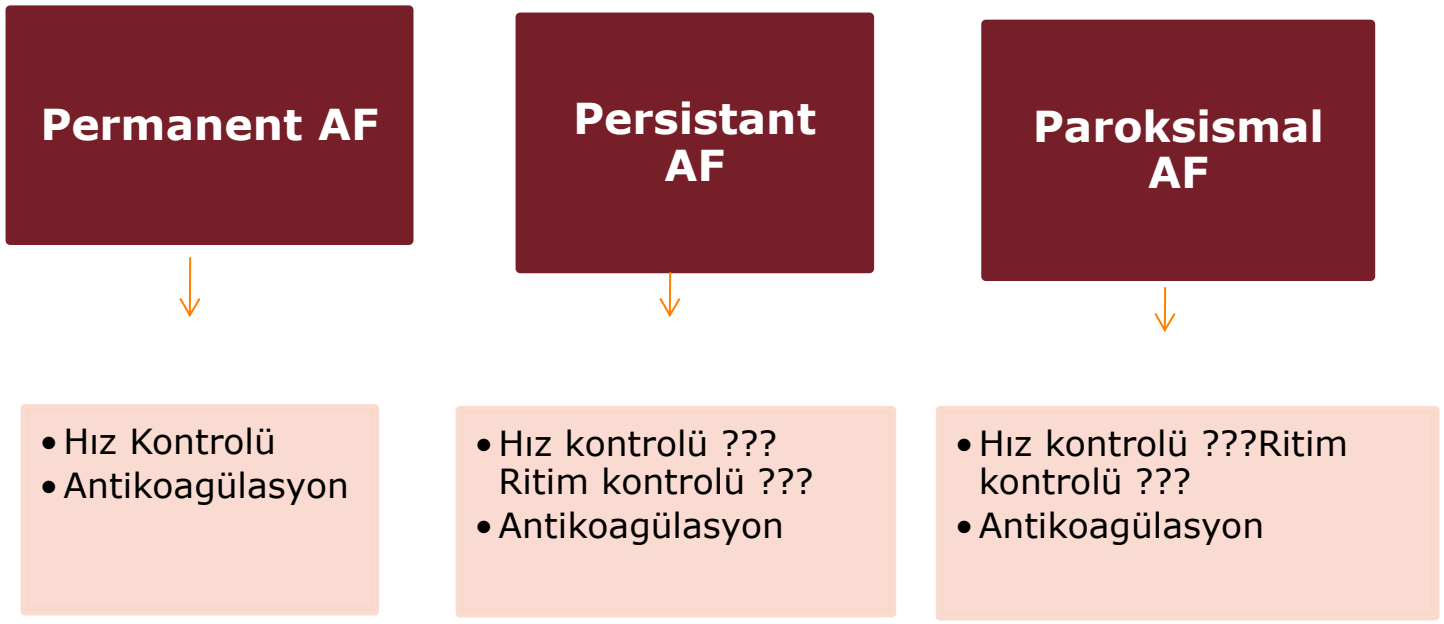
Yeni Tanı Atrial Fibrilasyon

Hemodinami Stabil

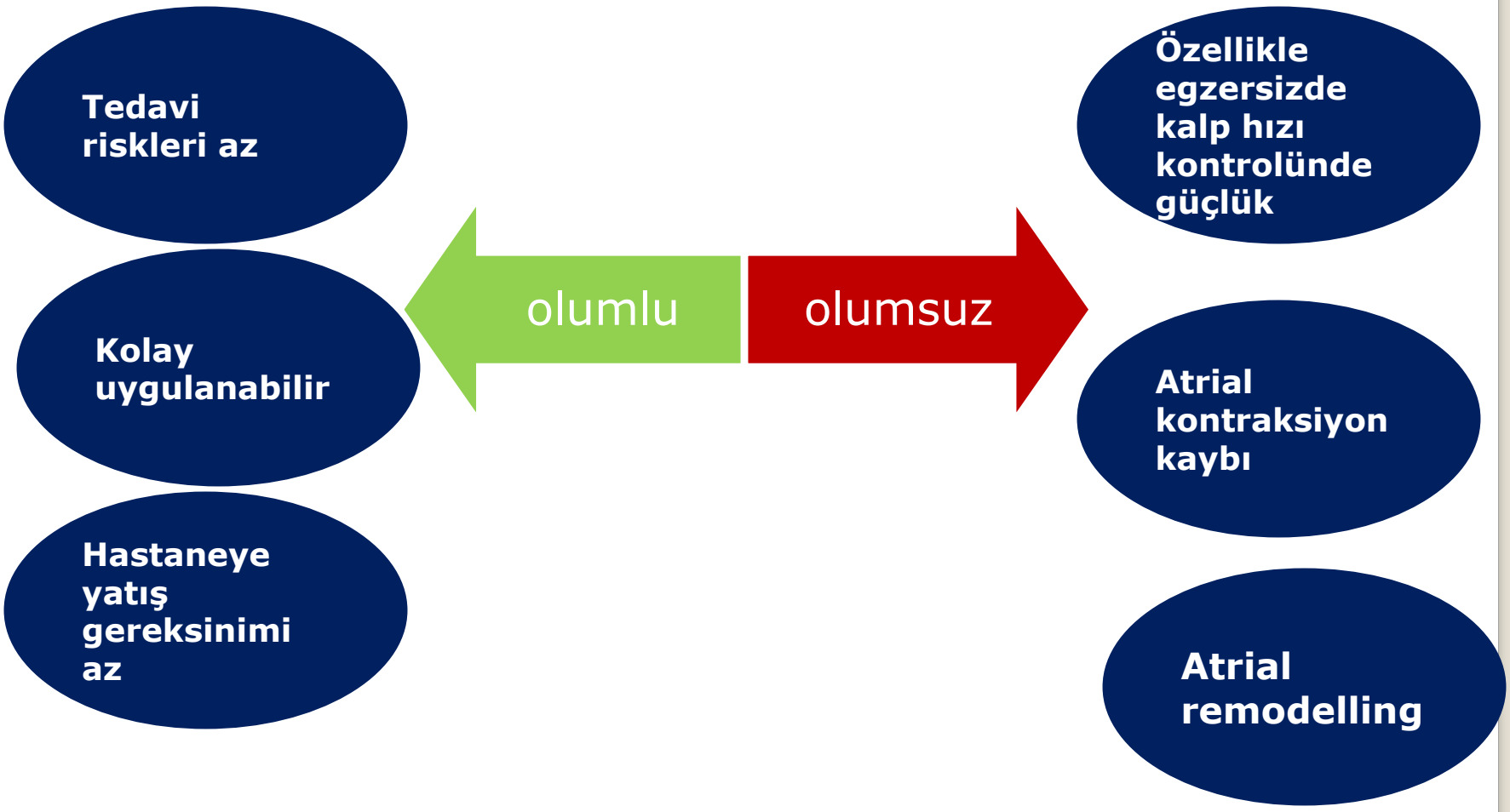
İlk atakta hastaların 2/3'si 24 saat içinde kendiliğinden sinüs ritmine dönmektedir.

Ventriküler hız kontrolünün yapılması ve risk faktörlerine göre antikoagülasyonun planlanması

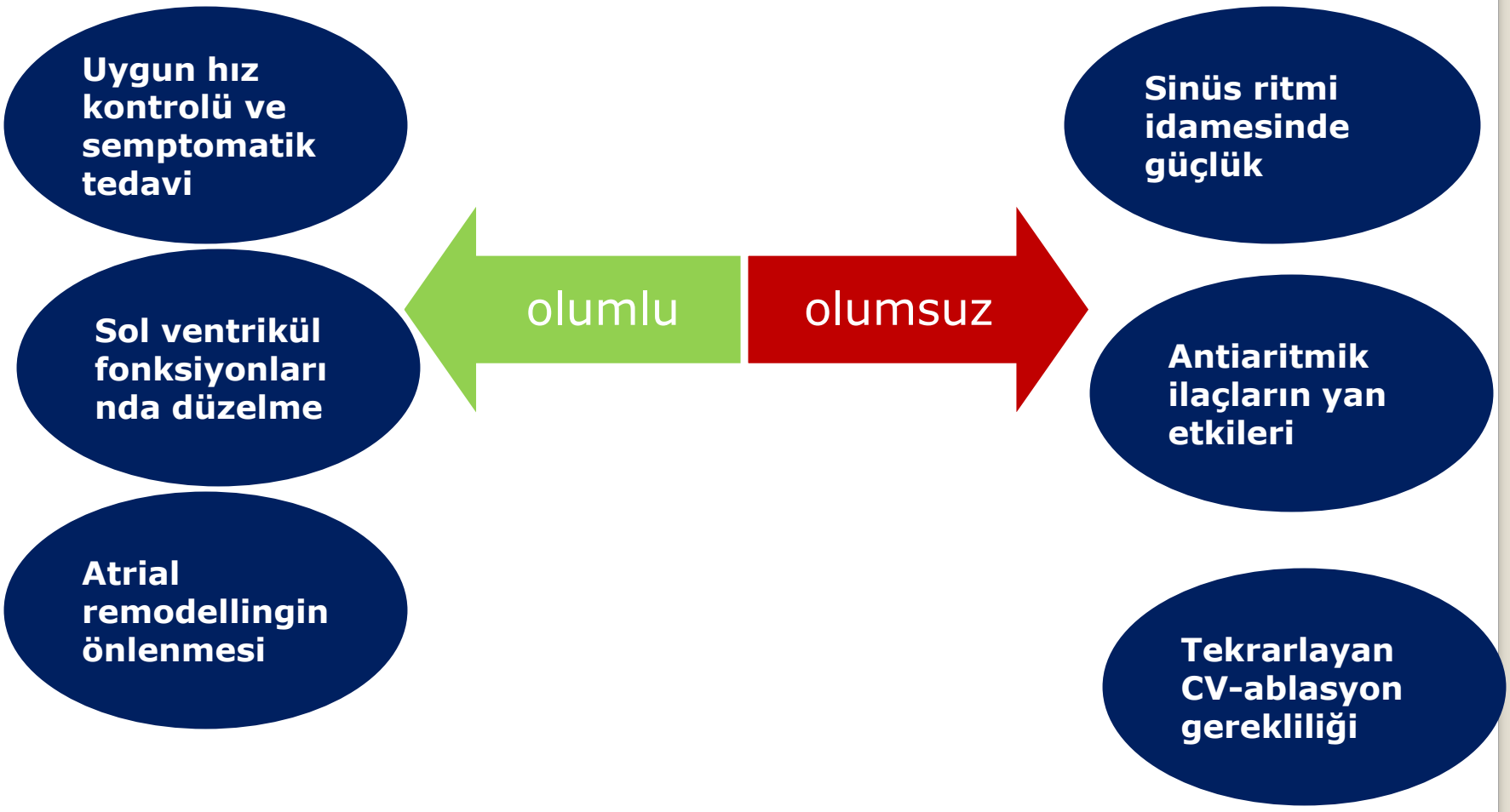

Spontan sinüs ritmine dönüş
İzlem
Antikoagülasyon
Spontan sinüs ritmine dönmedi
Ventriküler hız kontrolü veya ritim kontrolü kararı
Antikoagülasyon


Permanent AF
Persistant AF
Paroksismal AF
• Hız Kontrolü
• Antikoagülasyon
• Hız kontrolü ???
Ritim kontrolü ???
• Antikoagülasyon
• Hız kontrolü ???Ritim kontrolü ???
• Antikoagülasyon

Hız Kontrolü



Ritim Kontrolü



Hız kontrolü vs ritim kontrolü

Çalışmalar ritim kontrolünün beklenilen üstünlüğünü göstermemiştir. Hatta ritim kontrolü grubunda mortalitede artışa eğilim (AFFIRM) ve hastaneye yatışta artış (AFFIRM ve RACE) bildirildi.

Nedenler

- Hasta özellikleri, antiaritmik tedavinin başarı ve güvenlik sorunları
- Ablasyon tedavisiyle ilgili yeterli veri yok
- Ritim kontrolünün bazı hasta gruplarında semptomları ve yaşam kalitesini düzelttiği bildirilmişti

✓Hız kontolü, HT, Kalp yetmezliği, ileri yaş ve inme hikâyesi, AF progresyonunu arttırıyor.

✓Ritim kontrolü AF progresyonunu azaltıyor.

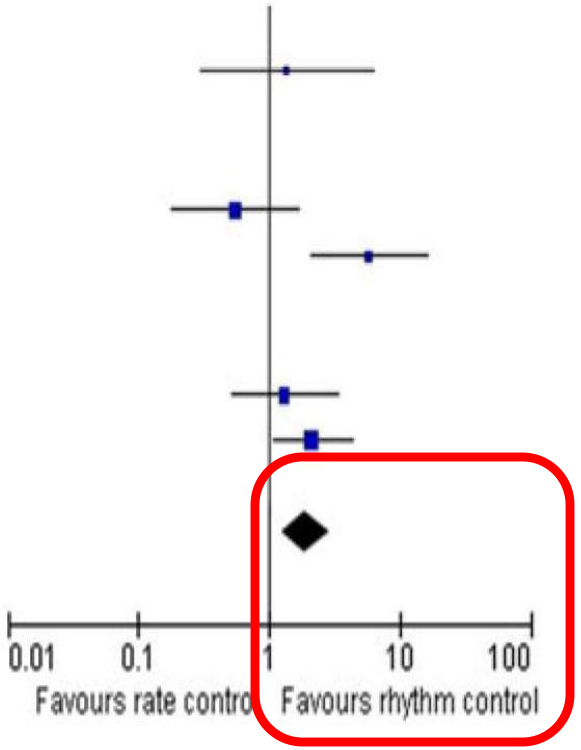
✓Ritim kontrolü yapılanlarda inme oranı anlamlı olarak daha düşük (CHADS2 skoru yüksek olanlarda daha da belirgin).

meta-analysis of composite outcome (all cause mortality, worsening heart failure events, bleeding events, thromboembolic events) in included studies with mean age less than 65 years

Wyse et al [6]	164	2027	177	2033	0.0%	0.92 [0.74, 1.15]
Hohnloser et al [7]	4	125	3	127	8.5%	1.37 [0.30, 6.23]
Carlsson et al [8]	29	100	37	100	0.0%	0.70 [0.38, 1.26]
Van Gelder et al [9]	19	256	21	266	0.0%	0.94 [0.49, 1.78]
Opolski et al [10]	5	101	9	104	24.9%	0.55 [0.18, 1.70]
Okçün et al [11]	26	84	5	70	11.1%	5.83 [2.10, 16.17]
Shelton et al [12]	1	31	1	30	0.0%	0.97 [0.06, 16.19]
Roy et al [13]	166	694	159	682	0.0%	1.03 [0.81, 1.33]
Ogawa et al [14]	10	404	8	419	22.6%	1.30 [0.51, 3.34]
Kanorski et al [15]	27	110	15	113	32.9%	2.13 [1.06, 4.26]
Total (95% CI)		**824**		**833**	**100.0%**	**1.89 [1.26, 2.86]**
Total events	72		40			

Heterogeneity: $Chi^2 = 10.16$, $df = 4$ ($P = 0.04$); $I^2 = 61\%$

Test for overall effect: $Z = 3.05$ ($P = 0.002$)



✓AFFIRM çalışması alt grup analizinde pacemakerlı hastalarda ritim kontrolü grubunda mortalite, hız kontrolü grubuna göre daha fazla (%32'ye karşı %19, $p<0.01$).

✓Pacemakerlı hastalarda hız kontrolü mü tercih edilmeli mi?

AFFIRM çalışmasında, hız kontrolündeki hastalar ile ritim kontrolündeki hastalar aldıkları antiaritmiğe göre (amiodaron, sotalol ve sınıf IC antiaritmik) karşılaştırılmış.

Amiodaron alanlarda, hız kontrolündeki hastalara göre total ve KV mortalite daha fazla, diğer antiaritmiklerde fark bildirilmemiş.

AFFIRM'deki ritim kontolü grubunda görülen mortalite artışına eğilim, amiodarona mı bağlı?

Hangi hastalarda ritim kontrolü tercih edilmelidir

- AF ilişkili dirençli semptomlar
- Hedeflenen ventriküler hız kontrolünün sağlanamadığı hastalar
- Genç hastalar
- Taşikardiye bağlı kardiyomiyopati olan hastalar
- İlk atak atrial fibrilasyon olan hastalar
- Akut başka bir hastalığa bağlı atrial fibrilasyon olan hastalar
- Hasta tercihi

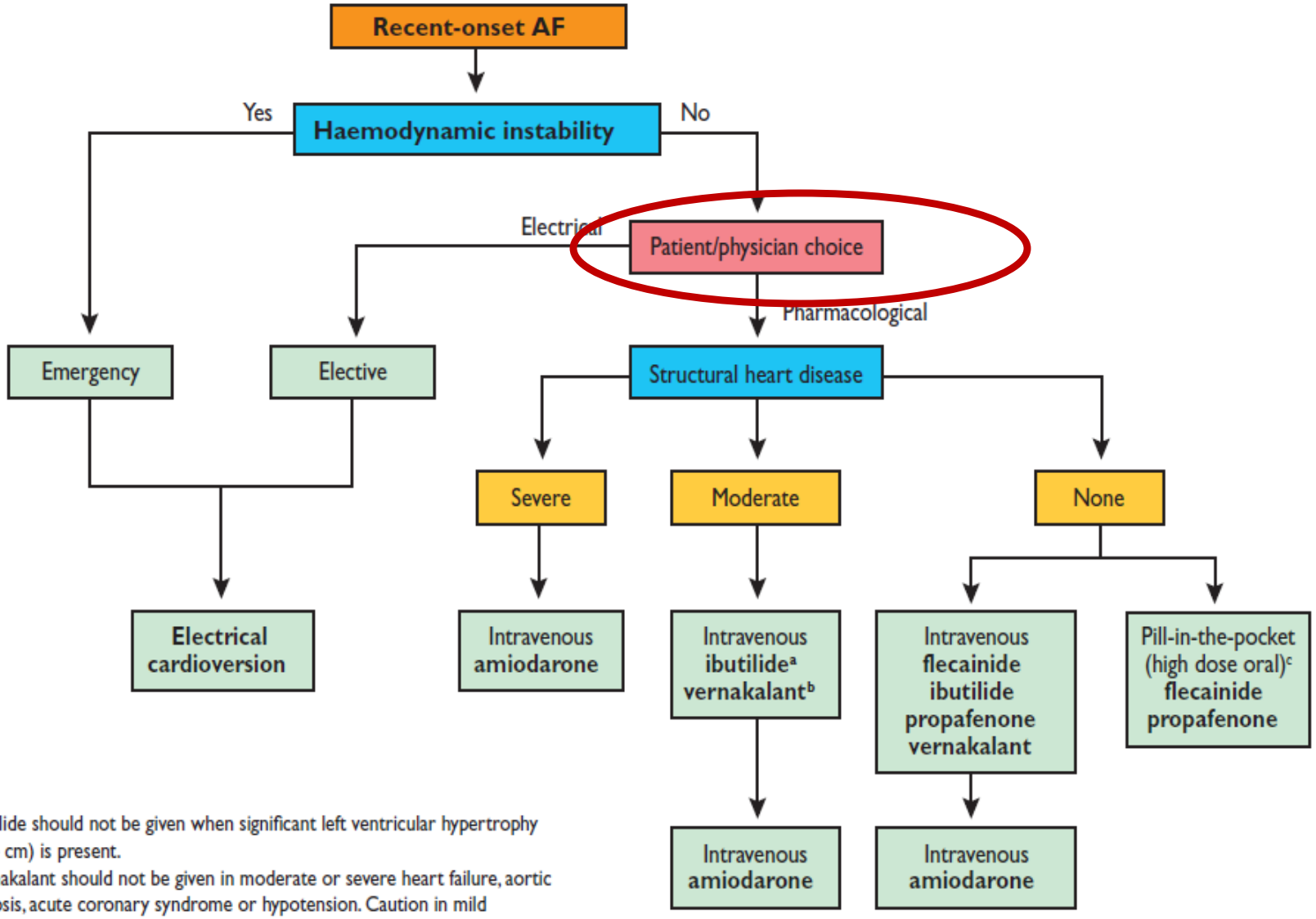
Atrial fibrilasyon paroksismal formdan persistan forma ilerlemektedir ve zamanla geri dönüşümsüz elektriksel ve yapısal değişiklikler olmaktadır

Bu nedenle uygun hastalarda ritim kontrolü geciktirilmeden uygulanmalıdır (hastanın gelecekteki muhtemel tedavi stratejilerine iyi yanıt verebilmesi için).

Yeni Tanı Atrial Fibrilasyonda Ritim Kontrolü

Farmakolojik vs Direkt Akım Elektriksel CV

- ✓Her iki stratejiyi karşılaştıran büyük çaplı çalışma yok
- ✓Antikoagülasyon gereksinimi benzer
- ✓Bifazik DCCV, farmakolojik kardiyoversiyona üstün olduğuna dair veriler var



[a]Ibutilide should not be given when significant left ventricular hypertrophy (≥1.4 cm) is present.
[b]Vernakalant 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.

Yeni tanı AF’de DCCV

Olumlu

- **Hızlı sinüs ritmi sağlanır**
- **Hemodinamik bozulma varsa etkin**

Olumsuz

- **Anestezi gereksinimi**
- **Cilt hasarı**

Yeni tanı AF'de DCCV

- Hızlı sonuç almak, verilen enerji miktarını azaltmak ve tekrarlayan şokların önüne geçmek için yüksek enerji (360 joule) tercih edilebilir.

- DCCV'na düşük enerji (100 joule) ile başlanmışsa ve sinüs ritmi sağlanamadıysa enerji artırılarak işlem tekrarlanmalıdır.

- Tekrarlayan şoklar arasında en az 1 dk beklenmelidir.

- Kabaca, 100 J bifazik şok, 200 J monofazik şoka denk gelir

□.

DCCV ile sinüs ritmi sağlanamadıysa

Daha yüksek enerji seviyeleriyle (400 joule max) tekrar denemelidir.

AP pozisyon denenmelidir.

Bifazik DCCV tercih edilmelidir

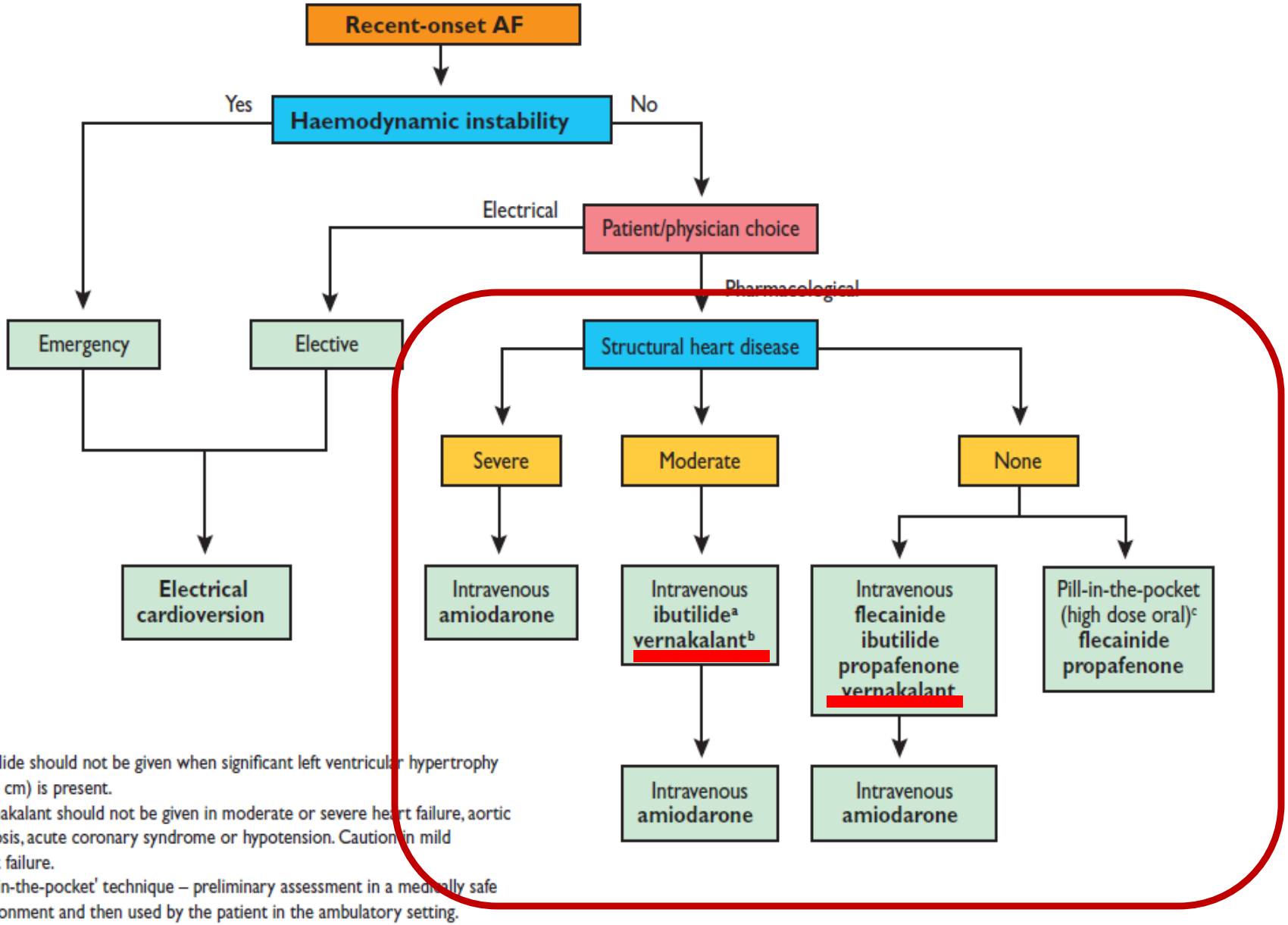
İbutilid verilebilir

DCCV ile sinüs ritmi sağlanıyor ama hemen AF nüks ediyorsa

Antiaritmik tedavi altında DCCV yeniden planlanmalıdır (Sınıf IIa).

Yeni tanı AF'de Farmakolojik Kardiyoversiyon

- ✓Genellikle AF akut epizodu sonrası ilk 7 gün içinde etkili
- ✓Kısa süre içinde yüksek doz antiaritmik ilaç kullanımı gereklidir.
- ✓Sinüs ritmine dönüş yavaştır
- ✓Bazı ajanlarla etkinlik plasebo ile aynıdır.



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Pharmacological cardioversion		
Flecainide, dofetilide, propafenone, and IV ibutilide are useful for cardioversion of AF or atrial flutter provided contraindications to the selected drug are absent	I	A
Amiodarone is reasonable for pharmacological cardioversion of AF	IIa	A
Propafenone or flecainide ("pill-in-the-pocket") to terminate AF out of hospital is reasonable once observed to be safe in a monitored setting	IIa	B
Dofetilide should not be initiated out of hospital	III: Harm	B

Drug	Route of Administration	Dosage		Potential Adverse Effects
Amiodarone	Oral	600–800 mg daily in divided doses to a total load of up to 10 g, then 200 mg QD as maintenance		Phlebitis (IV), hypotension, bradycardia, QT prolongation, torsades de pointes (rare), GI upset, constipation, increased INR
	IV	150 mg over 10 min, then 1 mg/min for 6 h, then 0.5 mg/min for 18 h or change to oral dosing		
Dofetilide	Oral	CrCl (mL/min)	Dose (mcg BID)	QT prolongation, torsades de pointes; adjust dose for renal function, body size, and age
		>60	500	
		40–60	250	
		20–40	125	
		<20	Not recommended	
Flecainide	Oral	200–300 mg x 1*		Hypotension, atrial flutter with 1:1 AV conduction, ventricular proarrhythmia; avoid in patients with CAD and significant structural heart disease
Ibutilide	IV	1 mg over 10 min; may repeat 1 mg once if necessary (weight <60 kg use 0.01 mg/kg)		QT prolongation, torsades de pointes, hypotension
Propafenone	Oral	450–600 mg x 1*		Hypotension, atrial flutter with 1:1 AV conduction, ventricular proarrhythmia; avoid in patients with CAD and significant structural heart disease

Recommendations	Class[a]	Level[b]
When pharmacological cardioversion is preferred and there is no or minimal structural heart disease, intravenous flecainide, propafenone, ibutilide, or vernakalant are recommended.	I	A
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
Intravenous vernakalant may be considered for cardioversion of postoperative AF ≤3 days in patients after cardiac surgery.	IIb	B

Kardiyoversiyonda Antikoagülasyon

<24-48 saat AF'de CV esnasında ve sonrasında 4 hafta antikoagülasyon önerilir (varfarin veya YOAK ile)

>48 saat AF'de ise 3 hafta antikoagülasyon sonrası CV ve sonrasında 4 hafta süreyle antikoagülasyonun devamı önerilir (varfarin veya YOAK ile)

>48 saat AF'de alternatif olarak TEE yapılarak (trombüs yoksa) CV planlanabilir. Sonrasında 4 hafta antikoagülasyona devam edilmelidir.

With AF or atrial flutter for >48 h or unknown duration requiring immediate cardioversion, anticoagulate as soon as possible and continue for at least 4 wk	I	C
With AF or atrial flutter <48 h and high stroke risk, IV heparin or LMWH, or factor Xa or direct thrombin inhibitor, is recommended before or immediately after cardioversion, followed by long-term anticoagulation	I	C
Following cardioversion of AF, long-term anticoagulation should be based on thromboembolic risk	I	C
With AF or atrial flutter for ≥48 h or unknown duration and no anticoagulation for preceding 3 wk, it is reasonable to perform a TEE prior to cardioversion, and then cardiovert if no LA thrombus is identified, provided anticoagulation is achieved before TEE and maintained after cardioversion for at least 4 wk	IIa	B
With AF or atrial flutter ≥48 h, or unknown duration, anticoagulation with dabigatran, rivaroxaban, or apixaban is reasonable for ≥3 wk prior to and 4 wk after cardioversion	IIa	C
With AF or atrial flutter <48 h and low thromboembolic risk, IV heparin, LMWH, a new oral anticoagulant, or no antithrombotic may be considered for cardioversion	IIb	C

Yeni tanı AF'de Sinüs Ritmi İdamesi

Amiodaron

AFFIRM'de sınıf I antiaritmiklere ve sotalol'a göre, SAFE-T'de ise sotalol'a göre amiodaron alanlarda sinüs ritminde kalma süresi çok daha uzun.

Dronedaron

Kalp yetmezliği ve permanent AF'de mortaliteyi arttırıyor.
Dabigatran ve digoksinin kan seviyelerini arttırıyor

Hepatotoksik

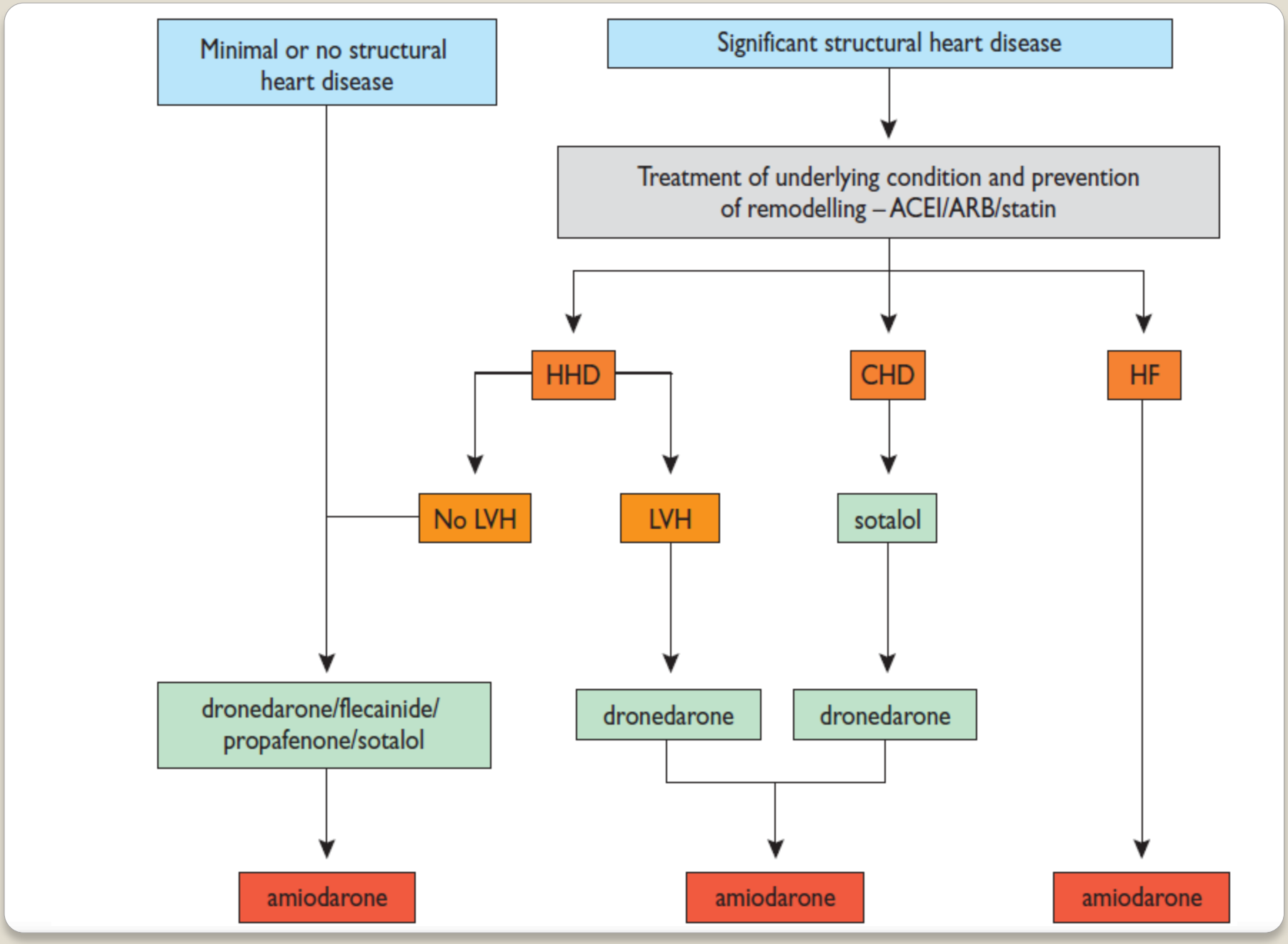
Flekainid ve Propafenon

KAH ve kalp yetersizliğinde kontrendikedir.
Asıl kullanma yeri pill-in-the-pocket

Drug	Usual Doses	Exclude/Use with Caution	Major Pharmacokinetic Drug Interactions
Vaughan Williams Class IA			
Disopyramide	• Immediate release: 100–200 mg once every 6 h • Extended release: 200–400 mg once every 12 h	• HF • Prolonged QT interval • Prostatism, glaucoma • Avoid other QT interval-prolonging drugs	• Metabolized by *CYP3A4*: caution with inhibitors (e.g., verapamil, diltiazem, ketoconazole, macrolide antibiotics, protease inhibitors, grapefruit juice) and inducers (e.g., rifampin, phenobarbital, phenytoin)
Quinidine	• 324–648 mg every 8 h	• Prolonged QT interval • Diarrhea	• Inhibits *CYP2D6*: ↑concentrations of tricyclic antidepressants, metoprolol, antipsychotics; ↓efficacy of codeine • Inhibits P-glycoprotein: ↑digoxin concentration
Vaughan Williams Class IC			
Flecainide	• 50–200 mg once every 12 h	• Sinus or AV node dysfunction • HF • CAD • Atrial flutter • Infranodal conduction disease • Brugada syndrome • Renal or liver disease	• Metabolized by *CYP2D6* (inhibitors include quinidine, fluoxetine, tricyclics; also genetically absent in 7%–10% of population) and renal excretion (dual impairment can ↑↑plasma concentration)
Propafenone	• Immediate release: 150–300 mg once every 8 h • Extended release: 225–425 mg once every 12 h	• Sinus or AV node dysfunction • HF • CAD • Atrial flutter • Infranodal conduction disease • Brugada syndrome • Liver disease • Asthma	• Metabolized by *CYP2D6* (inhibitors include quinidine, fluoxetine, tricyclics; also genetically absent in 7%–10% of population)—poor metabolizers have ↑beta blockade • Inhibits P-glycoprotein: ↑digoxin concentration • Inhibits *CYP2C9*: ↑warfarin concentration (↑INR 25%)

Vaughan Williams Class III			
Amiodarone	• Oral: 400–600 mg daily in divided doses for 2-4 wk; maintenance typically 100-200 mg QD • IV: 150 mg over 10 min; then 1 mg/min for 6 h; then 0.5 mg/min for 18 h or change to oral dosing; after 24 h, consider decreasing dose to 0.25 mg/min	• Sinus or AV node dysfunction • Infranodal conduction disease • Lung disease • Prolonged QT interval	• Inhibits most CYPs to cause drug interaction: ↑concentrations of warfarin (↑INR 0%–200%), statins, many other drugs • Inhibits P-glycoprotein: ↑digoxin concentration
Dofetilide	• 125–500 mcg once every 12 h	• Prolonged QT interval • Renal disease • Hypokalemia • Diuretic therapy • Avoid other QT interval prolonging drugs	• Metabolized by *CYP3A*: verapamil, HCTZ, cimetidine, ketoconazole, trimethoprim, prochlorperazine, and megestrol are contraindicated; discontinue amiodarone at least 3 mo before initiation

Dronedarone	• 400 mg once every 12 h	• Bradycardia • HF • Long-standing persistent AF/flutter • Liver disease • Prolonged QT interval	• Metabolized by *CYP3A*: caution with inhibitors (e.g., verapamil, diltiazem, ketoconazole, macrolide antibiotics, protease inhibitors, grapefruit juice) and inducers (e.g., rifampin, phenobarbital, phenytoin) • Inhibits *CYP3A*, *CYP2D6*, P-glycoprotein: ↑concentrations of some statins, sirolimus, tacrolimus, beta blockers, digoxin
Sotalol	• 40–160 mg once every 12 h	• Prolonged QT interval • Renal disease • Hypokalemia • Diuretic therapy • Avoid other QT interval prolonging drugs • Sinus or AV nodal dysfunction • HF • Asthma	• None (renal excretion)


Minimal or no structural heart disease
Significant structural heart disease
Treatment of underlying condition and prevention of remodelling – ACEI/ARB/statin
HHD
CHD
HF
No LVH
LVH
sotalol
dronedarone/flecainide/ propafenone/sotalol
dronedarone
dronedarone
amiodarone
amiodarone
amiodarone

Recommendations	Class[a]	Level[b]
Dronedarone is recommended in patients with recurrent AF as a moderately effective antiarrhythmic agent for the maintenance of sinus rhythm.	I	A
Short-term (4 weeks) antiarrhythmic therapy after cardioversion may be considered in selected patients e.g. those at risk for therapy-associated complications.	IIb	B
Dronedarone is not recommended in patients with permanent AF.	III	B

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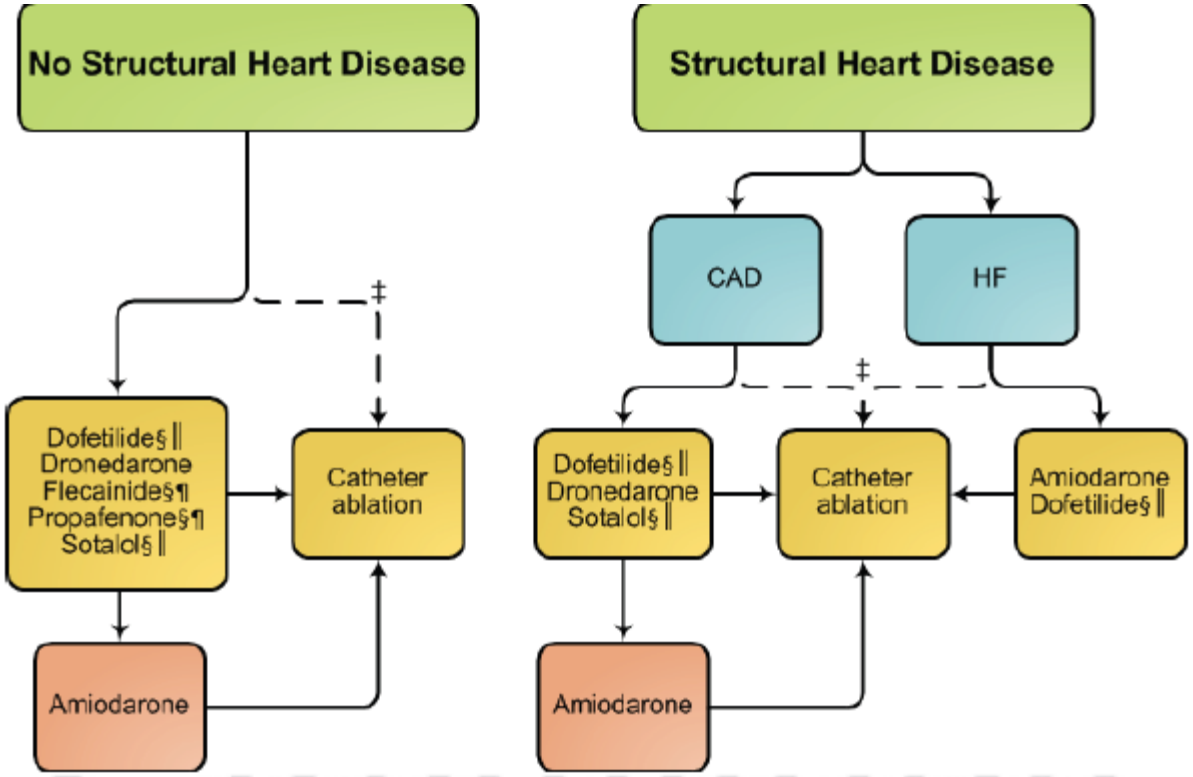
Yeni tanı AF'de Kateter Ablasyonu



*Catheter ablation is only recommended as first-line therapy for patients with paroxysmal AF (Class IIa recommendation).
†Drugs are listed alphabetically.
‡Depending on patient preference when performed in experienced centers.
§Not recommended with severe LVH (wall thickness >1.5 cm).
‖Should be used with caution in patients at risk for torsades de pointes ventricular tachycardia.
¶Should be combined with AV nodal blocking agents.
AF indicates atrial fibrillation; CAD, coronary artery disease; HF, heart failure; and LVH, left ventricular hypertrophy.

Class I

1. **AF catheter ablation is useful for symptomatic paroxysmal AF refractory or intolerant to at least 1 class I or III antiarrhythmic medication when a rhythm control strategy is desired (363, 392-397).** ***(Level of Evidence: A)***
2. **Prior to consideration of AF catheter ablation, assessment of the procedural risks and outcomes relevant to the individual patient is recommended.** ***(Level of Evidence: C)***

Class IIa

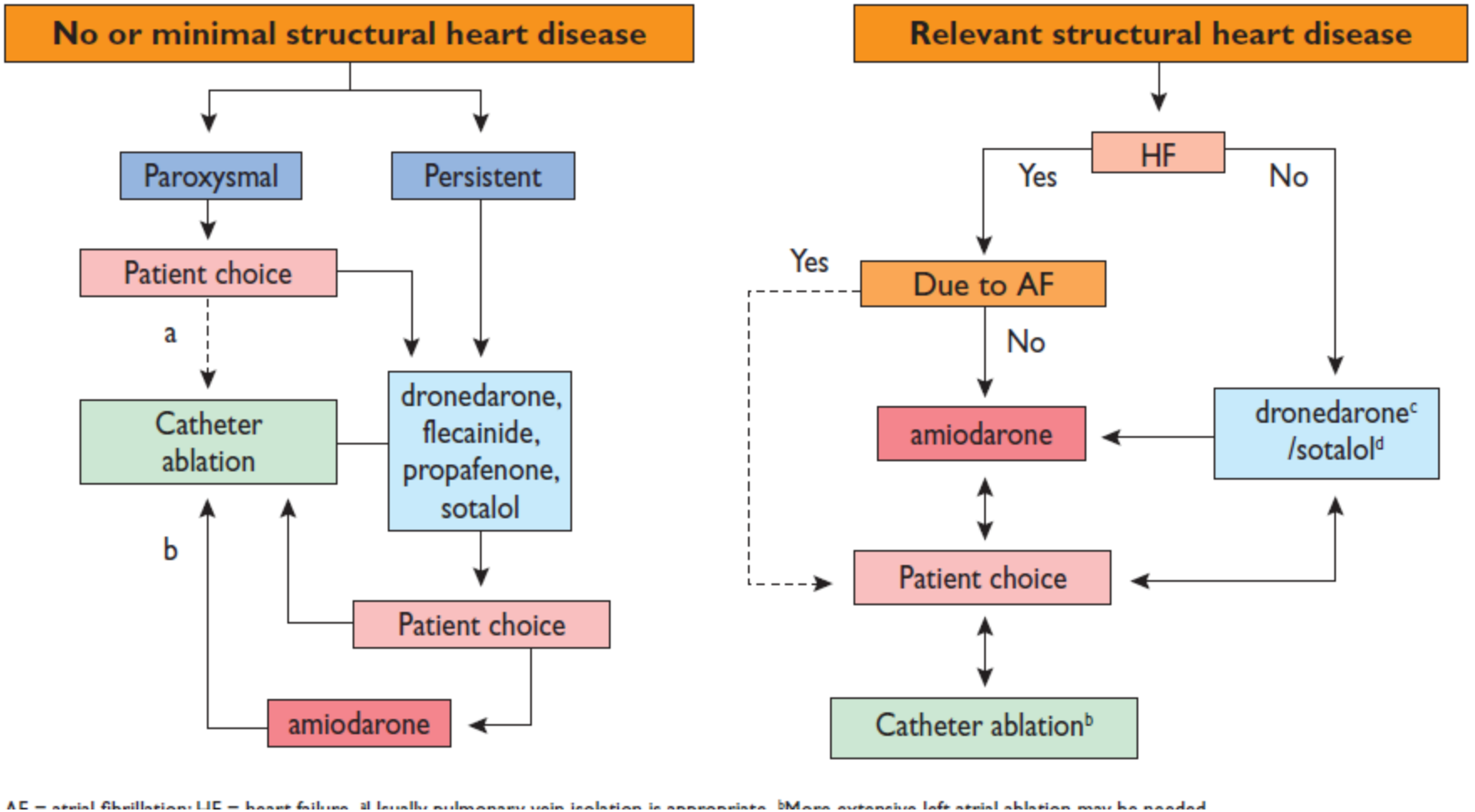
1. **AF catheter ablation is reasonable for selected patients with symptomatic persistent AF refractory or intolerant to at least 1 class I or III antiarrhythmic medication (394, 398-400).** ***(Level of Evidence: A)***
2. **In patients with recurrent symptomatic paroxysmal AF, catheter ablation is a reasonable initial rhythm control strategy prior to therapeutic trials of antiarrhythmic drug therapy, after weighing risks and outcomes of drug and ablation therapy (401-403).** ***(Level of Evidence: B)***

Class IIb

1. **AF catheter ablation may be considered for symptomatic long-standing (>12 months) persistent AF refractory or intolerant to at least 1 class I or III antiarrhythmic medication, when a rhythm control strategy is desired (363, 404).** ***(Level of Evidence: B)***
2. **AF catheter ablation may be considered prior to initiation of antiarrhythmic drug therapy with a class I or III antiarrhythmic medication for symptomatic persistent AF, when a rhythm control strategy is desired.** ***(Level of Evidence: C)***

Class III: Harm

1. **AF catheter ablation should not be performed in patients who cannot be treated with anticoagulant therapy during and following the procedure.** ***(Level of Evidence: C)***



AF = atrial fibrillation; HF = heart failure. [a]Usually pulmonary vein isolation is appropriate. [b]More extensive left atrial ablation may be needed.

Yeni tanı AF'de Kateter Ablasyonu

- ✓İlk 3 ay nüks olabilir
- ✓İlk 3 ay nükslerde CV önerilir
- ✓>3 ay nükslerde CV veya işlemin tekrarı önerilir
- ✓Antikoagülasyon en az 2 ay devam edilmelidir.
- ✓Ablasyon sonrası troboemboli riskinde azalma ????

Yeni Tanı AF'de Hız Kontrolü

Hayat kalitesini artırır, morbiditeyi azaltır ve taşikardiye bağlı kardiyomiyopati gelişimi riskini azaltır.
(hız kontrolü ile troponin düzeylerinde düşme var)

Betabloker

Nondihidropridin kalsiyum kanal blokerleri

Digoksin

Amiodaron ve sotalol

Hızlı etki isteniyorsa iv tercih edilmeli

Beta blokerler KKB'ye göre daha iyi hız düşürüyor.

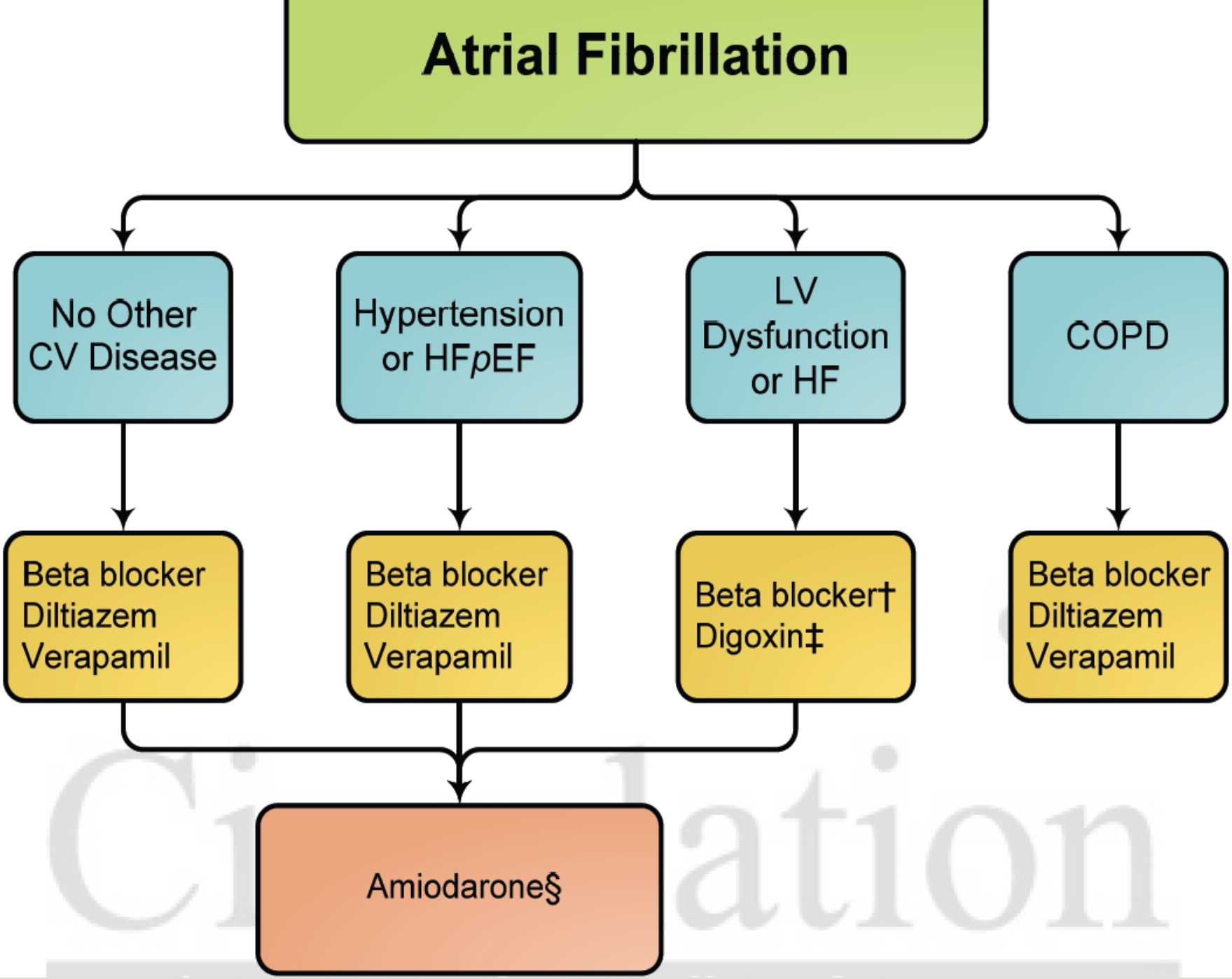
Digoksin egzersiz kalp hızına etkisiz, monoterapi olarak, sâdece sedentar hayât tarzı olanlarda düşünülebilir.

Digoksin + BB kombinasyonu digoksin + KKB kombinasyonundan daha iyi.

İlk basamak ilaçlara rağmen kalp hızı halen yüksek ise amiodaron düşünülebilir.

	Intravenous Administration	Usual Oral Mainten
Beta blockers		
Metoprolol tartrate	2.5–5.0 mg IV bolus over 2 min; up to 3 doses	25–100 mg BID
Metoprolol XL (succinate)	N/A	50–400 mg QD
Atenolol	N/A	25–100 mg QD
Esmolol	500 mcg/kg IV bolus over 1 min, then 50–300 mcg/kg/min IV	N/A
Propranolol	1 mg IV over 1 min, up to 3 doses at 2 min intervals	10–40 mg TID or QID
Nadolol	N/A	10–240 mg QD
Carvedilol	N/A	3.125–25 mg BID
Bisoprolol	N/A	2.5–10 mg QD
Nondihydropyridine calcium channel antagonists		
Verapamil	(0.075-0.15 mg/kg) IV bolus over 2 min, may give an additional 10.0 mg after 30 min if no response, then 0.005 mg/kg/min infusion	180–480 mg QD (ER)
Diltiazem	0.25 mg/kg IV bolus over 2 min, then 5-15 mg/h	120–360 mg QD (ER)
Digitalis glycosides		
Digoxin	0.25 mg IV with repeat dosing to a maximum of 1.5 mg over 24 h	0.125–0.25 mg QD
Others		
Amiodarone	300 mg IV over 1 h, then 10–50 mg/h over 24 h	100–200 mg QD

Control ventricular rate using a beta blocker or nondihydropyridine calcium channel antagonist for paroxysmal, persistent, or permanent AF	I	B
IV beta blockers or nondihydropyridine calcium channel blocker recommended to slow ventricular heart rate in the acute setting in patients without pre-excitation. In hemodynamically unstable patients, electrical cardioversion is indicated	I	B
For AF, assess heart rate control during exertion, adjusting pharmacological treatment as necessary	I	C
A heart rate control (resting heart rate <80 bpm) strategy is reasonable for symptomatic management of AF	IIa	B
IV amiodarone can be useful for rate control in critically ill patients without pre-excitation	IIa	B
AV nodal ablation with permanent ventricular pacing is reasonable when pharmacological management is inadequate and rhythm control is not achievable	IIa	B
Lenient rate control strategy (resting heart rate <110 bpm) may be reasonable with asymptomatic patients and LV systolic function is preserved	IIb	B
Oral amiodarone may be useful for ventricular rate control when other measures are unsuccessful or contraindicated	IIb	C
AV nodal ablation should not be performed without prior attempts to achieve rate control with medications	III: Harm	C
Nondihydropyridine calcium channel antagonists should not be used in decompensated HF	III: Harm	C
With pre-excitation and AF, digoxin, nondihydropyridine calcium channel antagonists, or amiodarone, should not be administered	III: Harm	B
Dronedarone should not be used to control ventricular rate with permanent AF	III: Harm	B


Atrial Fibrillation
No Other CV Disease
Hypertension or HF*p*EF
LV Dysfunction or HF
COPD
Beta blocker Diltiazem Verapamil
Beta blocker Diltiazem Verapamil
Beta blocker† Digoxin‡
Beta blocker Diltiazem Verapamil
Amiodarone§

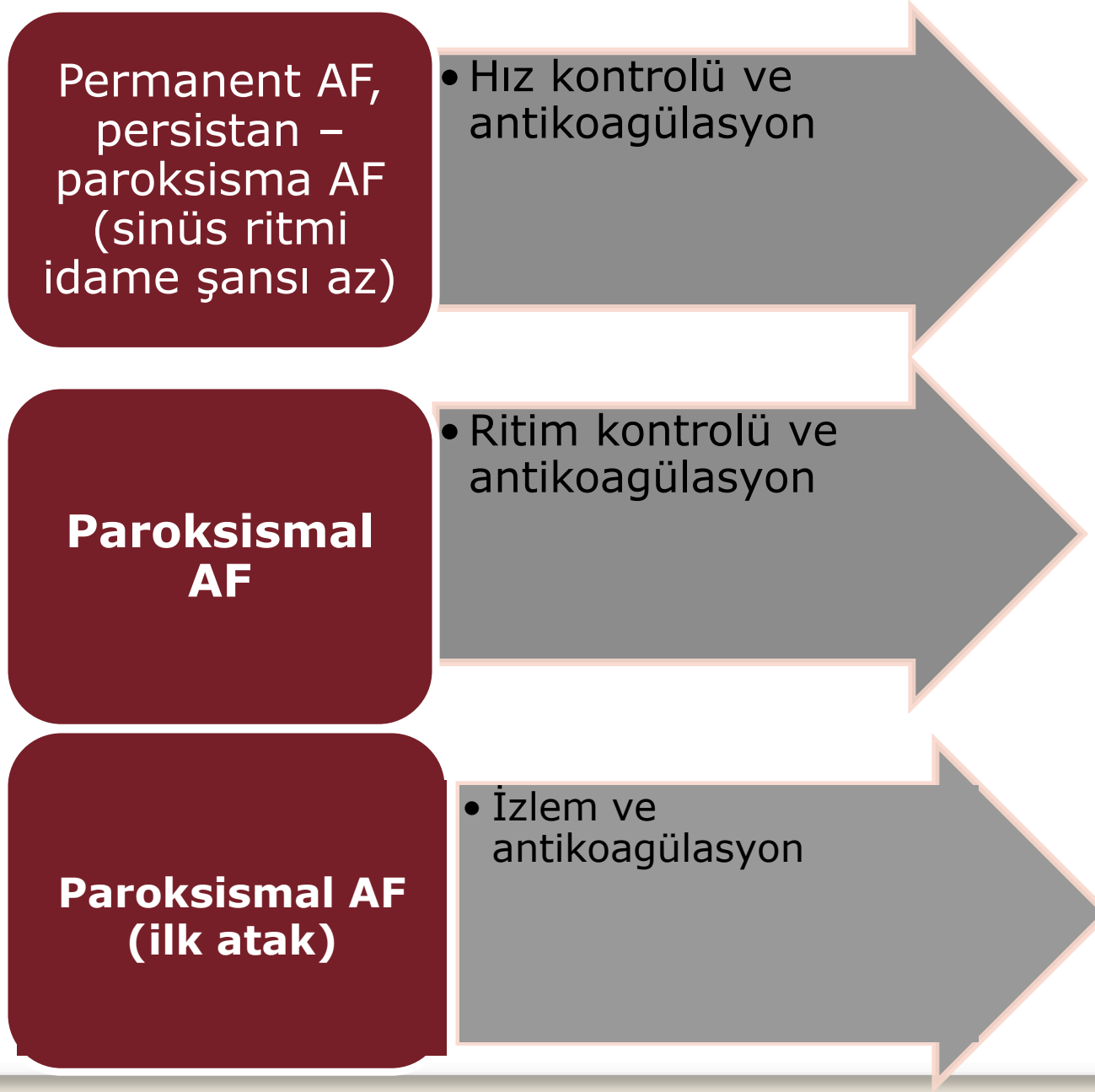
Yeni Tanı Atrial Fibrilasyonda Antikoagülasyon

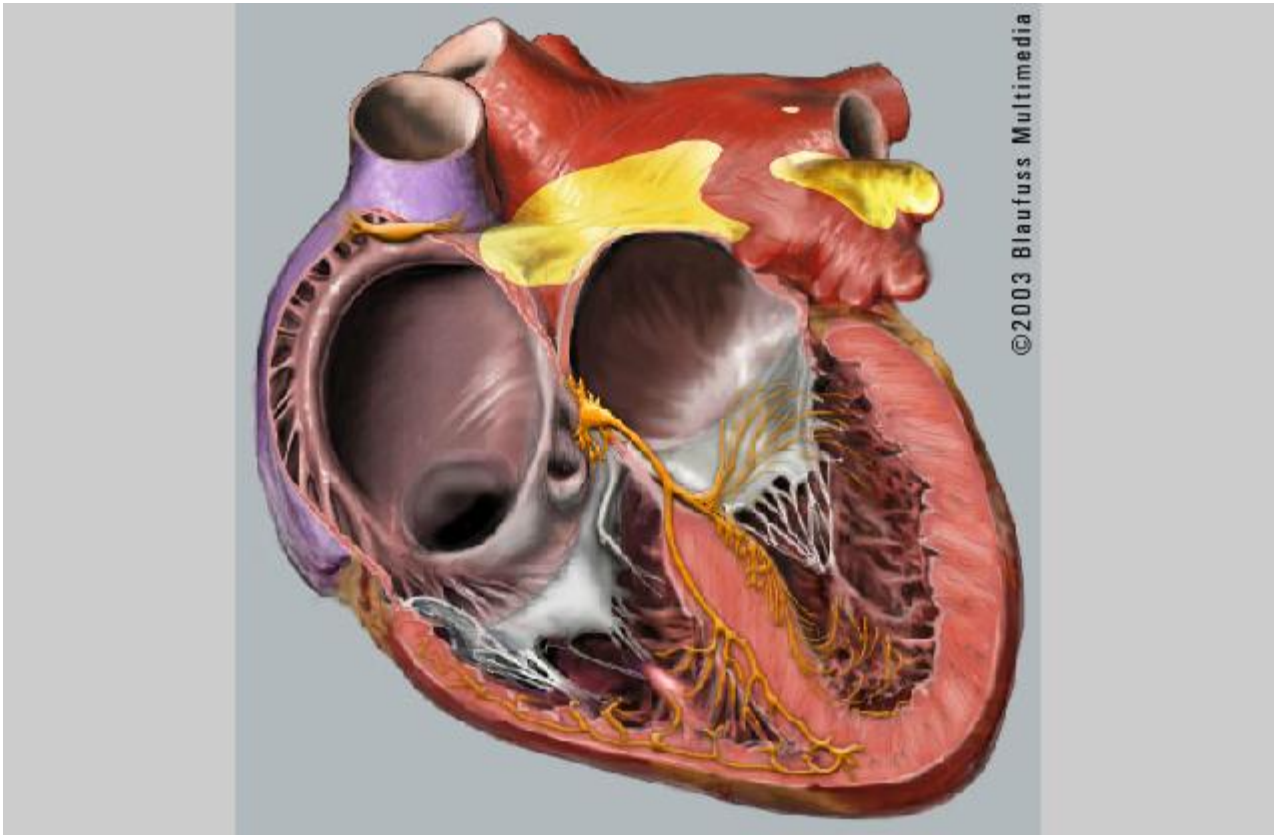
Definition and Scores for $CHADS_2$ and CHA_2DS_2-VASc	
	Score
$CHADS_2$ acronym	
Congestive HF	1
Hypertension	1
Age ≥75 y	1
Diabetes mellitus	1
Stroke/TIA/TE	2
Maximum Score	6
CHA_2DS_2-VASc acronym	
Congestive HF	1
Hypertension	1
Age ≥75 y	2
Diabetes mellitus	1
Stroke/TIA/TE	2
Vascular disease (prior MI, PAD, or aortic plaque)	1
Age 65–74 y	1
Sex category (i.e., female sex)	1
Maximum Score	9

Stroke Risk Stratification With the $CHADS_2$ and CHA_2DS_2-VASc scores	
	Adjusted stroke rate (% per y)
$CHADS_2$ acronym*	
0	1.9%
1	2.8%
2	4.0%
3	5.9%
4	8.5%
5	12.5%
6	18.2%
CHA_2DS_2-VASc acronym†	
0	0%
1	1.3%
2	2.2%
3	3.2%
4	4.0%
5	6.7%
6	9.8%
7	9.6%
8	6.7%
9	15.20%

Recommendations	COR	LOE
Antithrombotic therapy based on shared decision-making, discussion of risks of stroke and bleeding, and patient's preferences	I	C
Antithrombotic therapy selection based on risk of thromboembolism	I	B
CHA_2DS_2-VASc score recommended to assess stroke risk	I	B
Warfarin recommended with mechanical heart valves. Target INR intensity should be based on the type and location of prosthesis	I	B
With prior stroke, TIA, or CHA_2DS_2-VASc score ≥2, oral anticoagulants recommended. Options include:		
• Warfarin	I	A
• Dabigatran, rivaroxaban, or apixaban	I	B
With warfarin, determine INR at least weekly during initiation and monthly when stable	I	A
Direct thrombin or factor Xa inhibitor recommended, if unable to maintain therapeutic INR	I	C
Re-evaluate the need for anticoagulation at periodic intervals	I	C
Bridging therapy with LMWH or UFH recommended with a mechanical heart valve if warfarin is interrupted. Bridging therapy should balance risks of stroke and bleeding	I	C
Without a mechanical heart valve, bridging therapy decisions should balance stroke and bleeding risks against the duration of time patient will not be anticoagulated	I	C
Evaluate renal function prior to initiation of direct thrombin or factor Xa inhibitors, and re-evaluate when clinically indicated and at least annually	I	B

With nonvalvular AF and CHA_2DS_2-VASc score of 0, it is reasonable to omit antithrombotic therapy	IIa	B
With CHA_2DS_2-VASc score ≥2 and end-stage CKD (CrCl <15 mL/min) or on hemodialysis, it is reasonable to prescribe warfarin for oral anticoagulation	IIa	B
With nonvalvular AF and a CHA_2DS_2-VASc score of 1, no antithrombotic therapy or treatment with an oral anticoagulant or aspirin may be considered	IIb	C
With moderate-to-severe CKD and CHA_2DS_2-VASc scores of ≥2, reduced doses of direct thrombin or factor Xa inhibitors may be considered	IIb	C
For PCI,* BMS may be considered to minimize duration of DAPT	IIb	C
Following coronary revascularization in patients with CHA_2DS_2-VASc score of ≥2, it may be reasonable to use clopidogrel concurrently with oral anticoagulants, but without aspirin	IIb	B
Direct thrombin, dabigatran, and factor Xa inhibitor, rivaroxaban, are not recommended with AF and end-stage CKD or on hemodialysis because of the lack of evidence from clinical trials regarding the balance of risks and benefits	III: No Benefit	C
Direct thrombin inhibitor, dabigatran, should not be used with a mechanical heart valve	III: Harm	B


Permanent AF, persistan – paroksisma AF (sinüs ritmi idame şansı az)
• Hız kontrolü ve antikoagülasyon
Paroksismal AF
• Ritim kontrolü ve antikoagülasyon
Paroksismal AF (ilk atak)
• İzlem ve antikoagülasyon



Teşekkür Ederim