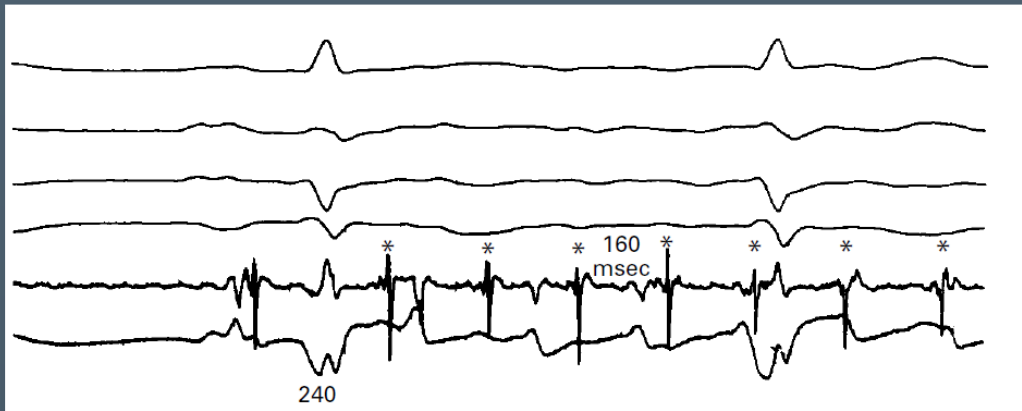


Hammamet, 25.11.2016



Fibrillation Atriale

Recommandations ESC 2016

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2016 ESC Guidelines for the management of atrial fibrillation developed in collaboration with EACTS

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) of the ESC

Endorsed by the European Stroke Organisation (ESO)

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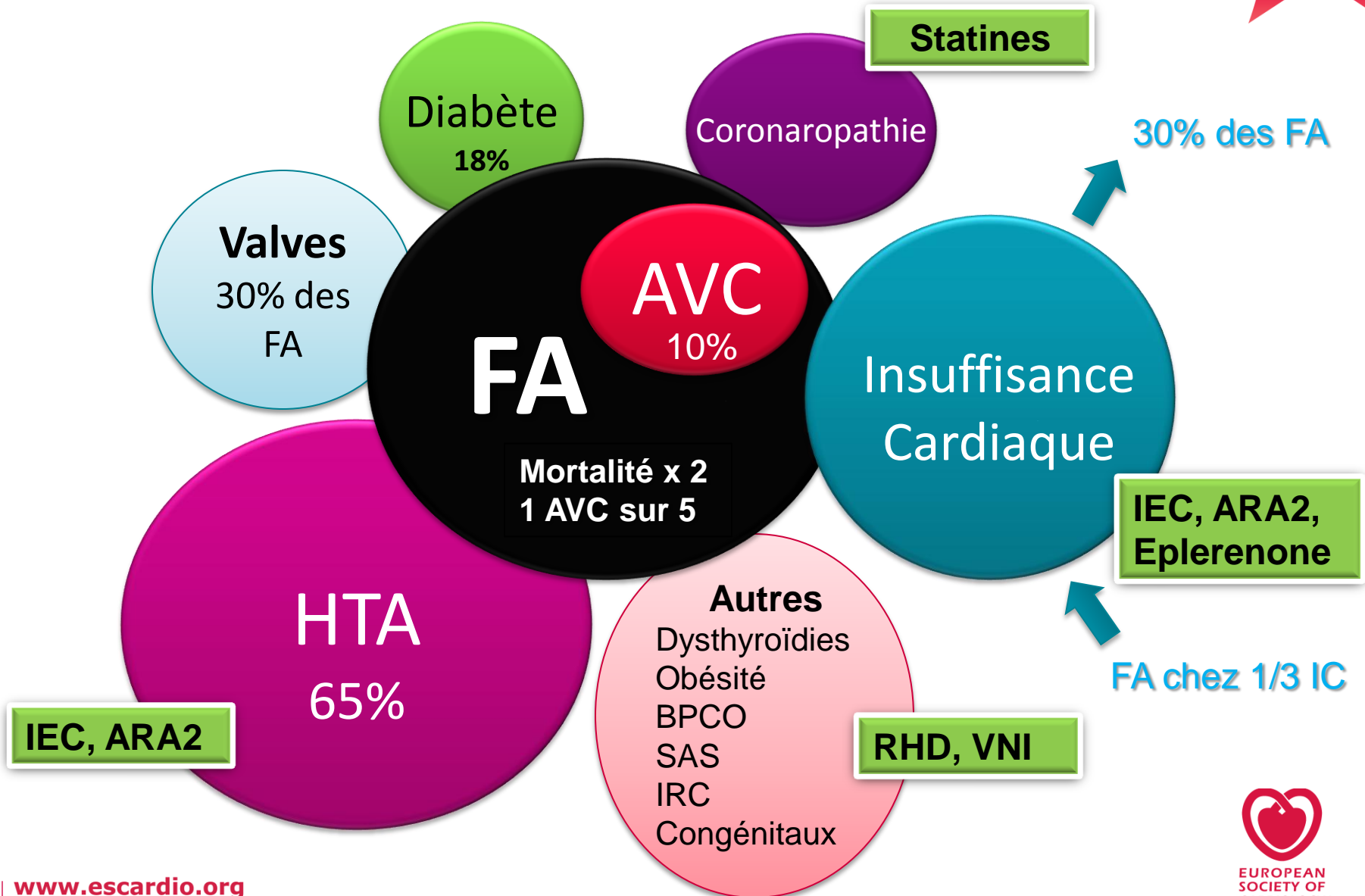


Classification des recommandations

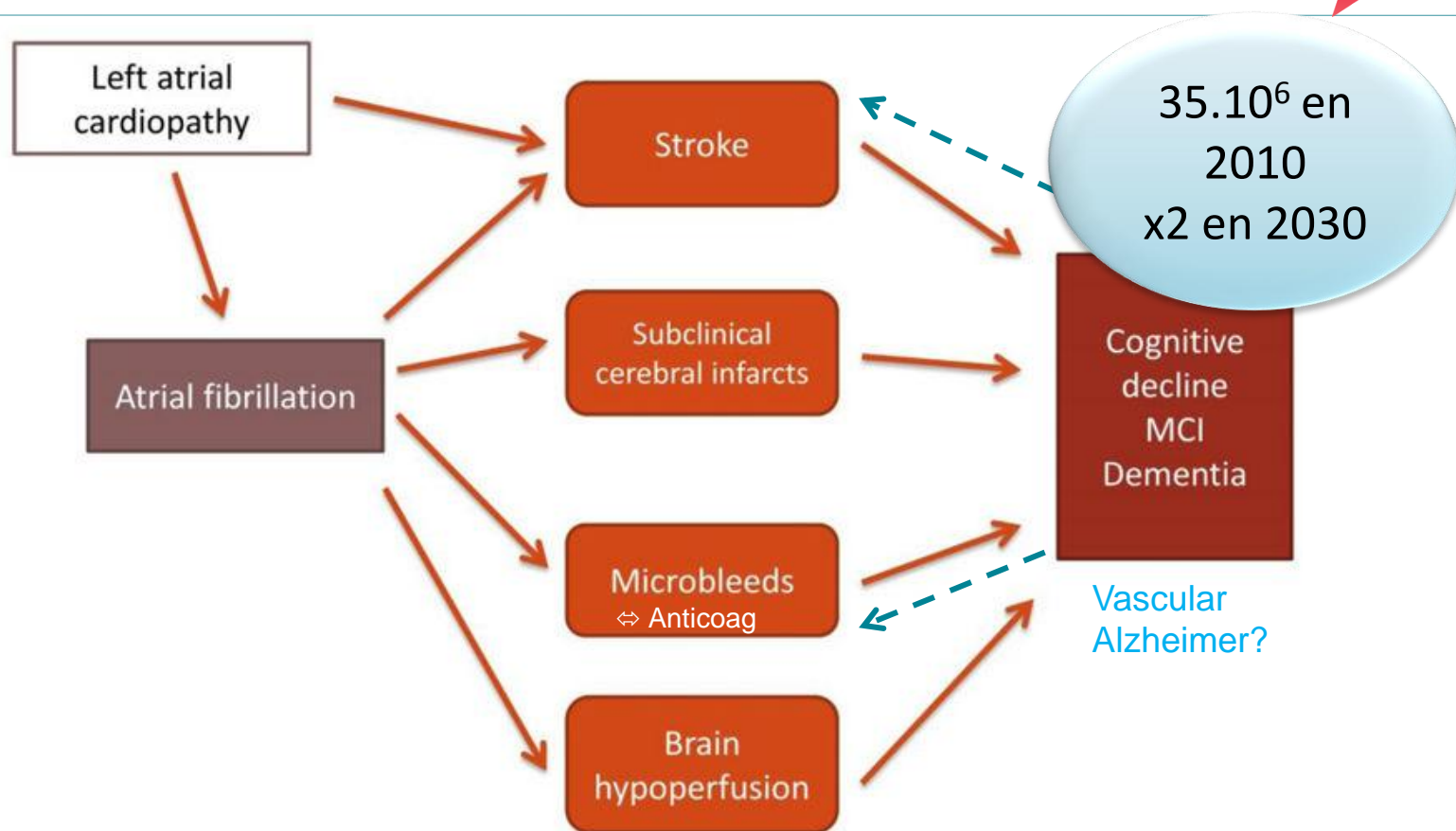
Classes of recommendations	Definition	Suggested wording to use
Class I	Evidence and/or general agreement that a given treatment or procedure is beneficial, useful, effective.	Is recommended/is indicated
Class II	Conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of the given treatment or procedure.	
<i>Class IIa</i>	<i>Weight of evidence/opinion is in favour of usefulness/efficacy.</i>	Should be considered
<i>Class IIb</i>	<i>Usefulness/efficacy is less well established by evidence/opinion.</i>	May be considered
Class III	Evidence or general agreement that the given treatment or procedure is not useful/effective; and in some cases may be harmful.	Is not recommended

Niveau de preuve

Level of evidence A	Data derived from multiple randomized clinical trials or meta-analyses.
Level of evidence B	Data derived from a single randomized clinical trial or large non-randomized studies.
Level of evidence C	Consensus of opinion of the experts and/or small studies, retrospective studies, registries.



Enjeux à long terme



MCI= mild cognitive impairment (13% of increased risk with AF, decreased MMSE by ≥ 3 points)

Recommendations for screening for atrial fibrillation

Recommendations	Class ^a	Level ^b	Ref ^c
Opportunistic screening for AF is recommended by pulse taking or ECG rhythm strip in patients >65 years of age.	I	B	130, 134, 155
In patients with TIA or ischaemic stroke, screening for AF is recommended by short-term ECG recording followed by continuous ECG monitoring for at least 72 hours.	I	B	27, 127
It is recommended to interrogate pacemakers and ICDs on a regular basis for atrial high rate episodes (AHRE). Patients with AHRE should undergo further ECG monitoring to document AF before initiating AF therapy.	I	B	141, 156
In stroke patients, additional ECG monitoring by long-term non-invasive ECG monitors or implanted loop recorders should be considered to document silent atrial fibrillation.	IIa	B	18, 128
Systematic ECG screening may be considered to detect AF in patients aged >75 years, or those at high stroke risk.	IIb	B	130, 135, 157



Symptômes

Recommendation on use of the modified European Heart Rhythm Association symptom scale

Recommendation	Class ^a	Level ^b	Ref ^c
Use of the modified EHRA symptom scale is recommended in clinical practice and research studies to quantify AF-related symptoms.	I	C	192, 199

Table 7 Modified European Heart Rhythm Association symptom scale (modified from Wynn et al.¹⁹⁹)

Modified EHRA score	Symptoms	Description
1	None	AF does not cause any symptoms
2a	Mild	Normal daily activity not affected by symptoms related to AF ^a
2b	Moderate	Normal daily activity not affected by symptoms related to AF, but patient troubled by symptoms ^a
3	Severe	Normal daily activity affected by symptoms related to AF
4	Disabling	Normal daily activity discontinued

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

^aEHRA class 2a and 2b can be differentiated by evaluating whether patients are functionally affected by their AF symptoms. AF-related symptoms are most commonly fatigue/tiredness and exertional shortness of breath, or less frequently palpitations and chest pain.^{42,194,200–202}

FA: évaluation initiale

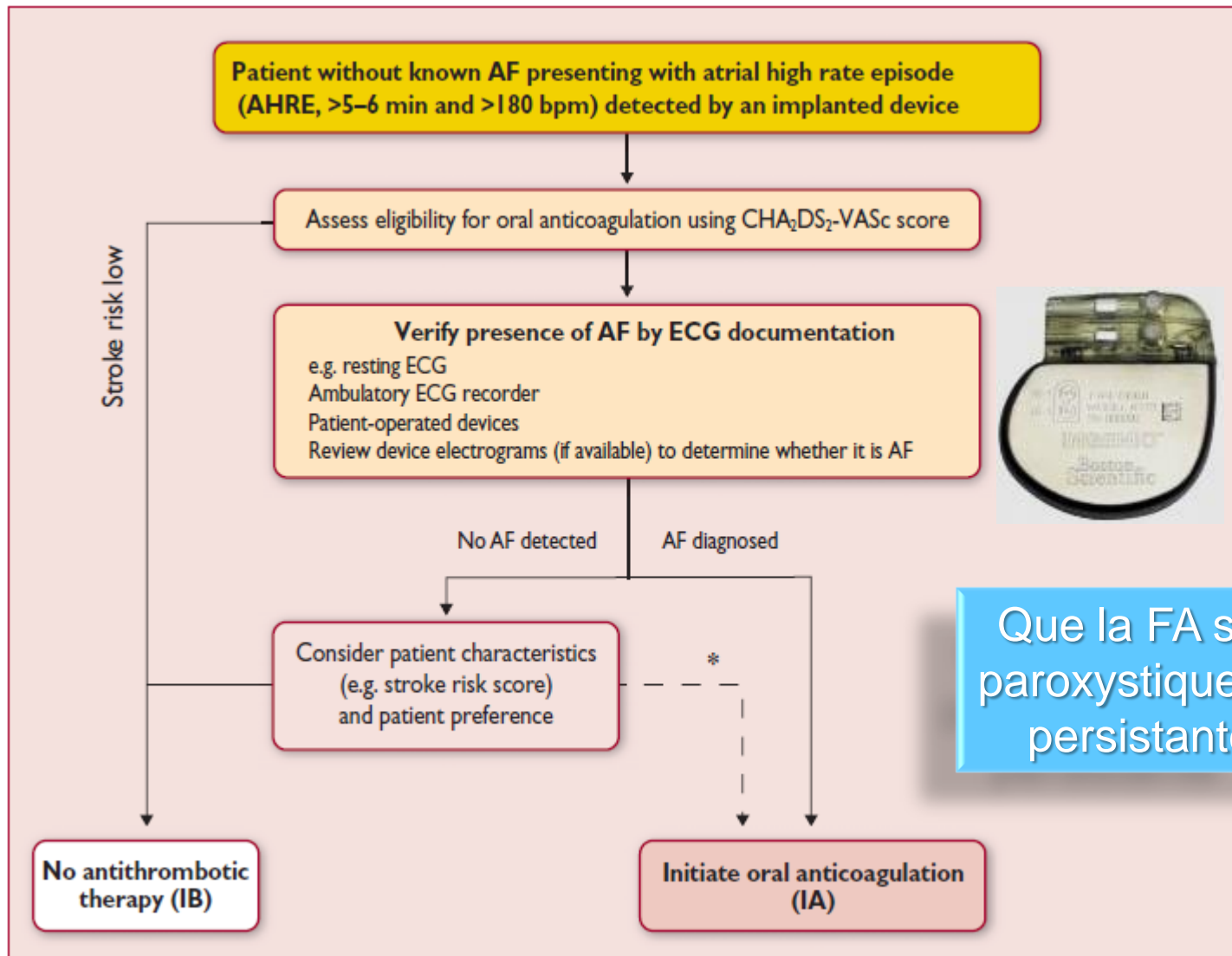


- 1. Quand anticoaguler?**
- 2. Contrôler la fréquence cardiaque**
- 3. Traiter la cardiopathie sous-jacente**
- 4. Stratégie: contrôle de RYTHME ?**

Importance d'une approche multidisciplinaire

- **Travailler en réseaux de spécialistes et non spécialistes**
- **Implication du patient dans la prise en charge**
- **Education thérapeutique (ACO +++)**

Combien de temps en FA pour anticoaguler?



Newly detected atrial high rate episodes predict long-term mortality outcomes in patients with permanent pacemakers

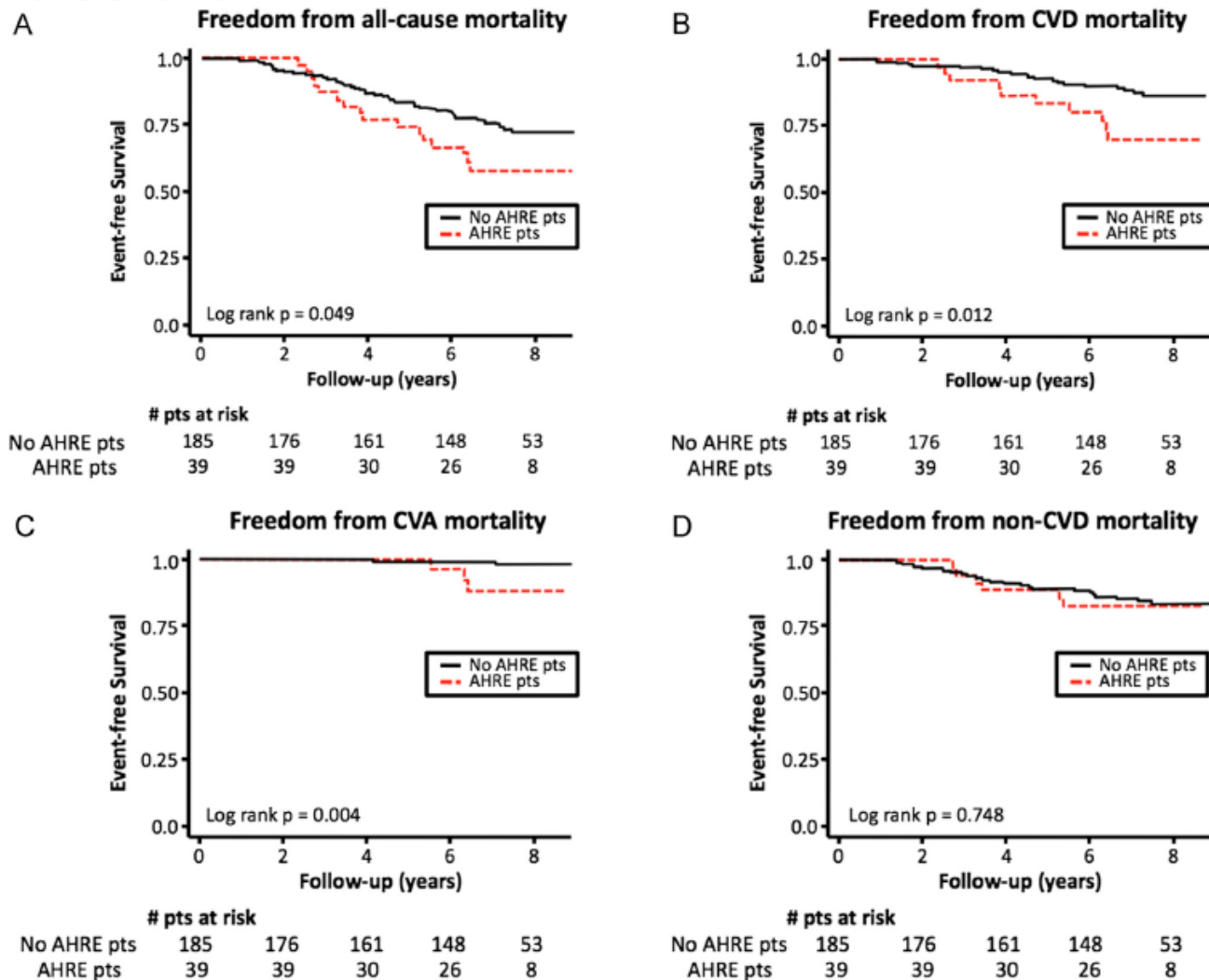


Figure 1 Kaplan-Meier curves comparing survival among patients with and without newly detected AHREs within 6 months of pacemaker implantation. **A:** All-cause mortality. **B:** Cardiovascular mortality. **C:** Stroke mortality. **D:** Noncardiovascular mortality. AHRE = atrial high rate episode; CVA = cerebrovascular accident; CVD = cardiovascular disease; pts = patients.

Newly detected atrial high rate episodes predict long-term mortality outcomes in patients with permanent pacemakers

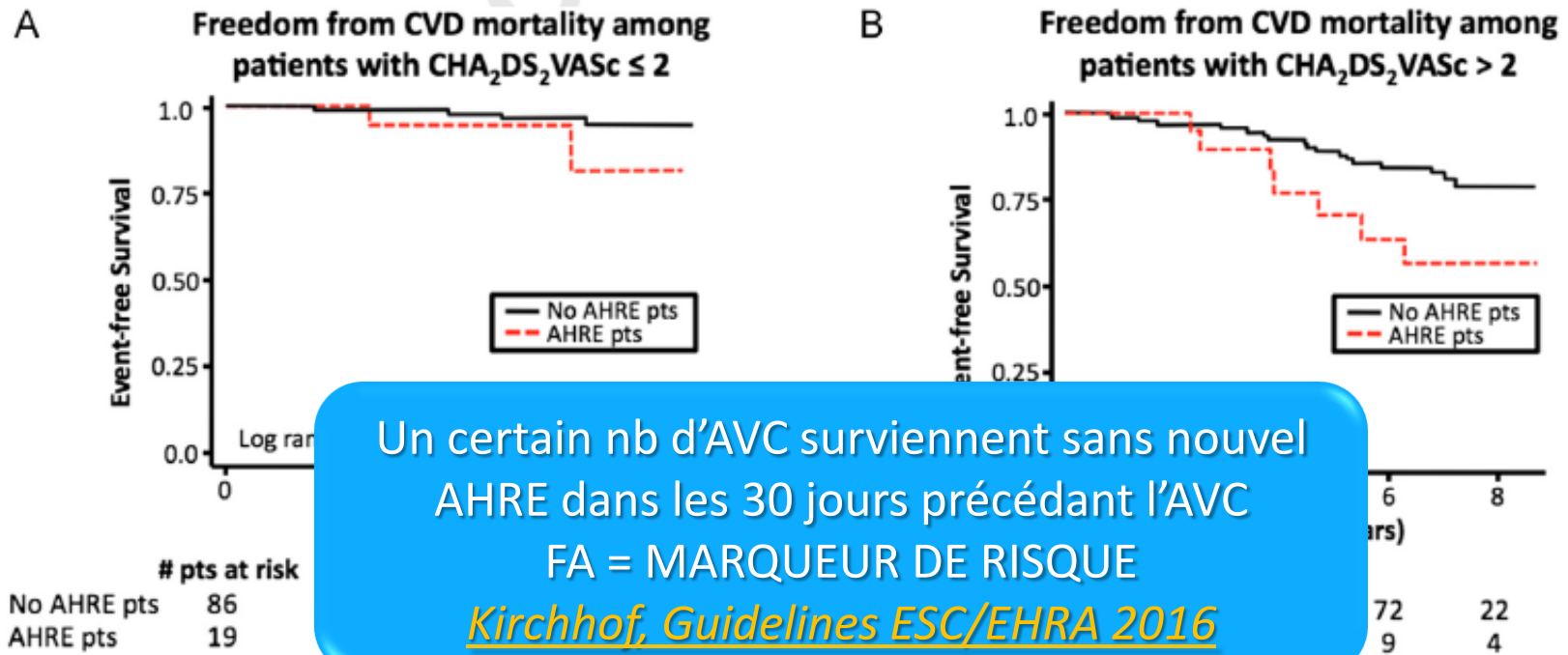


Figure 3 Detection of AHREs as a predictor of cardiovascular mortality stratified by CHA₂DS₂-VASc score. **A:** Comparison of survival among patients with and without AHREs who have CHA₂DS₂-VASc score ≤ 2. **B:** Comparison of survival among patients with and without AHREs who have CHA₂DS₂-VASc score > 2. AHRE = atrial high rate episode; CVD = cardiovascular disease.



CAT initiale FA et IC

Management of patients presenting acutely with AF and heart failure

Acute management Chronic management

Cardiovert if unstable

Anticoagulate according to stroke risk

Normalise fluid balance with diuretics to improve symptoms

Control rate: Initial rate target <110 bpm; stricter if persistent HF/AF symptoms

Inhibit the renin–angiotensin–aldosterone system^a

Early consideration of rhythm control

Advanced HF therapies, including devices^a

Treatment of other cardiovascular disease, especially ischaemia and hypertension

ACE = angiotensin-converting enzyme; AF = atrial fibrillation; ARB = angiotensin receptor blocker; ARNI = angiotensin receptor neprilysin inhibition; bpm = beats per minute; HF = heart failure.

^aIn patients with heart failure and reduced ejection fraction. Also consider combined ARNI in patients able to tolerate an ACE inhibitor or ARB with ongoing symptoms.

^aAdapted from Kotecha and Piccini.²¹⁸



Thérapies d'amont

- **Importance des thérapies d'amont dans l'IC et l'HTA.**
 - Diminution incidence de la FA avec :
 - IEC
 - ARA2
 - Inh. des récepteurs aux minéralocorticoïdes (FEVG \leq 35%)
 - Béta-bloquants (- 33% risque de FA pour IC FE basse en RS)
 - Effet neutre de l'inhibition de la neprilysine (LCZ696)

Valvulopathies

- FA valvulaire = toutes valves mécaniques ET sténose mitrale modérée à sévère (post RAA)
- La survenue d'une FA peut être considérée comme un marqueur d'évolution de la valvulopathie et amener à une décision chirurgicale

Recommendations for patients with valvular heart disease and atrial fibrillation

Recommendations	Class ^a	Level ^b	Ref ^c
Early mitral valve surgery should be considered in severe mitral regurgitation, preserved LV function, and new-onset AF, even in the absence of symptoms, particularly when valve repair is feasible.	IIa	C	276
Mitral valvulotomy should be considered for asymptomatic patients with severe mitral stenosis and suitable valve anatomy who have new-onset AF.	IIa	C	

Prévention des AVC

Pour les patients à risque modéré (CHA₂DS₂-VASc 1 pour les H ou 2 pour les femmes) les ACO doivent être discutés et contre-balancés par le risque hémorragique et le choix du patient

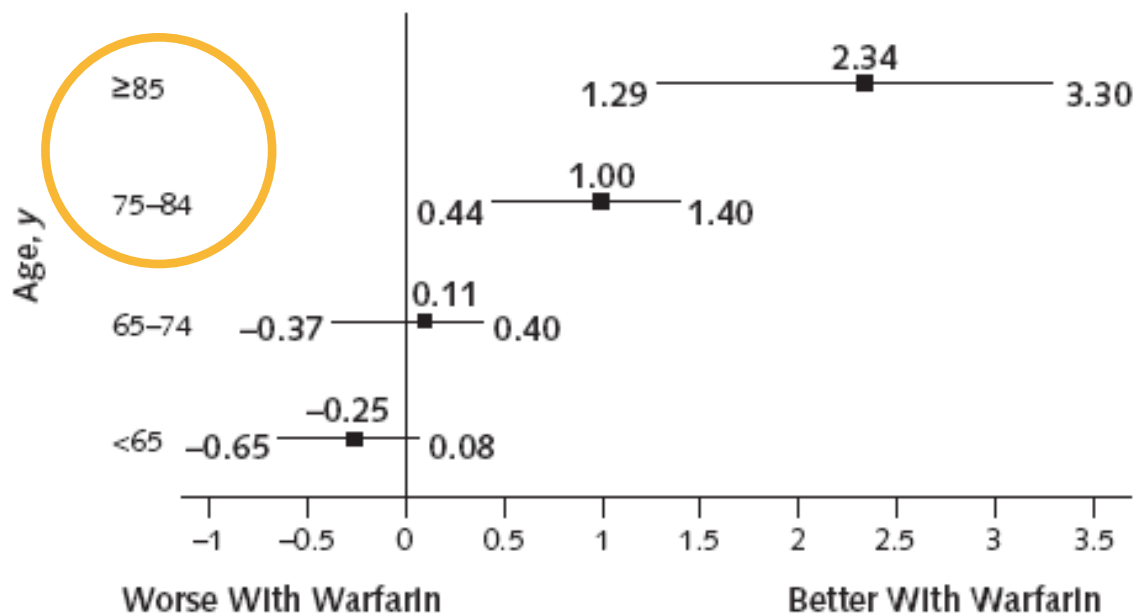
Recommendations bleeding risk

Recommendations

The CHA ₂ DS ₂ -VASc score is recommended for stroke risk prediction in patients with AF.	I	A	386
Bleeding risk scores should be considered in AF patients on oral anticoagulation to identify modifiable risk factors for major bleeding.	IIa	B	384, 386, 387, 389–392
Biomarkers such as high-sensitivity troponin and natriuretic peptide may be considered to further refine stroke and bleeding risk in AF patients.	IIb	B	380–382, 387, 393

AF = atrial fibrillation; CHA₂DS₂-VASc = Congestive Heart failure, hypertension, Age \geq 75 (doubled), Diabetes, Stroke (doubled), Vascular disease, Age 65–74, and Sex (female); OAC = oral anticoagulation.

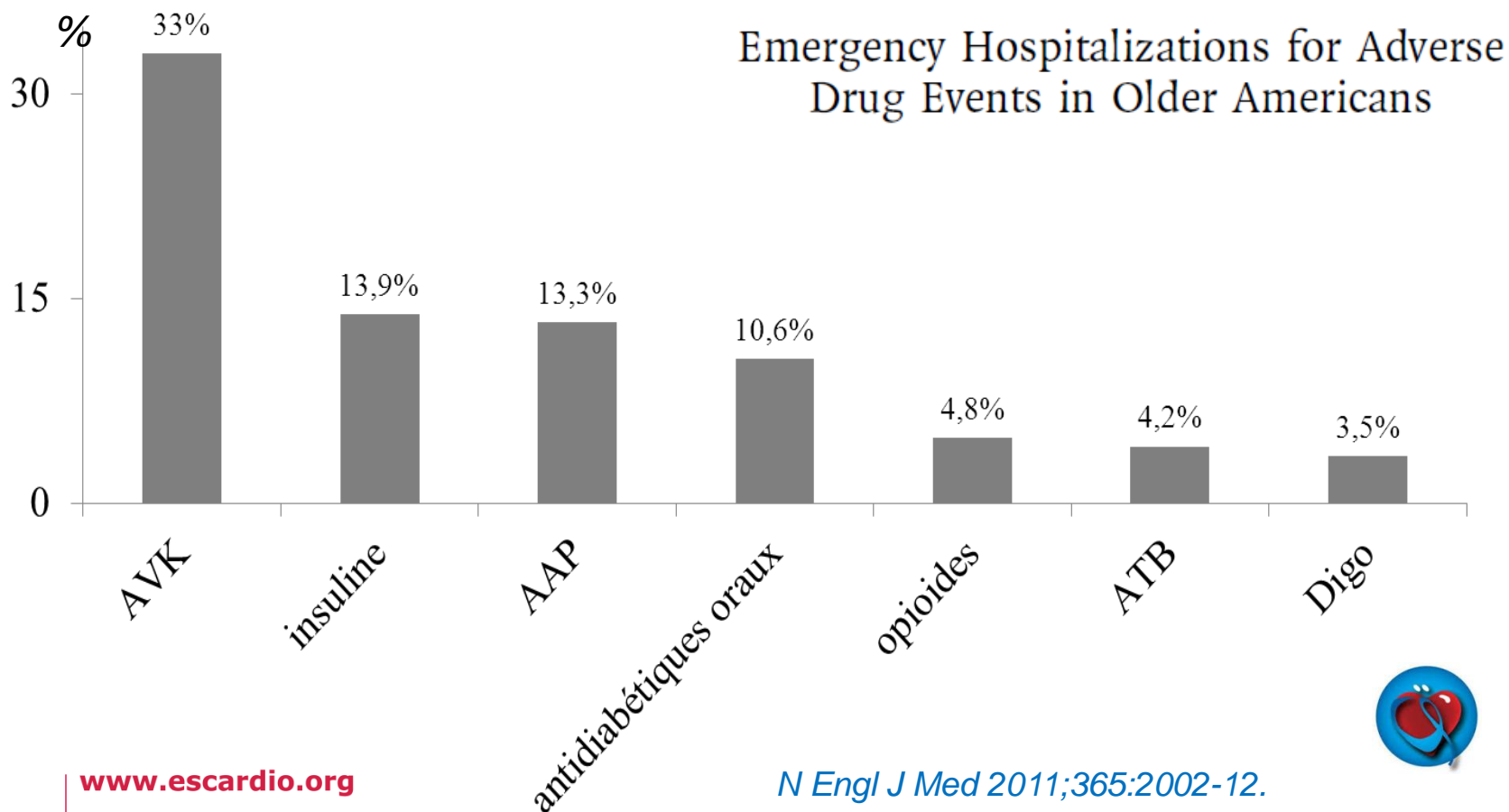
The Net Clinical Benefit of Warfarin Anticoagulation in Atrial Fibrillation



Net Clinical Benefit, *Events Prevented per 100 Person-Years*

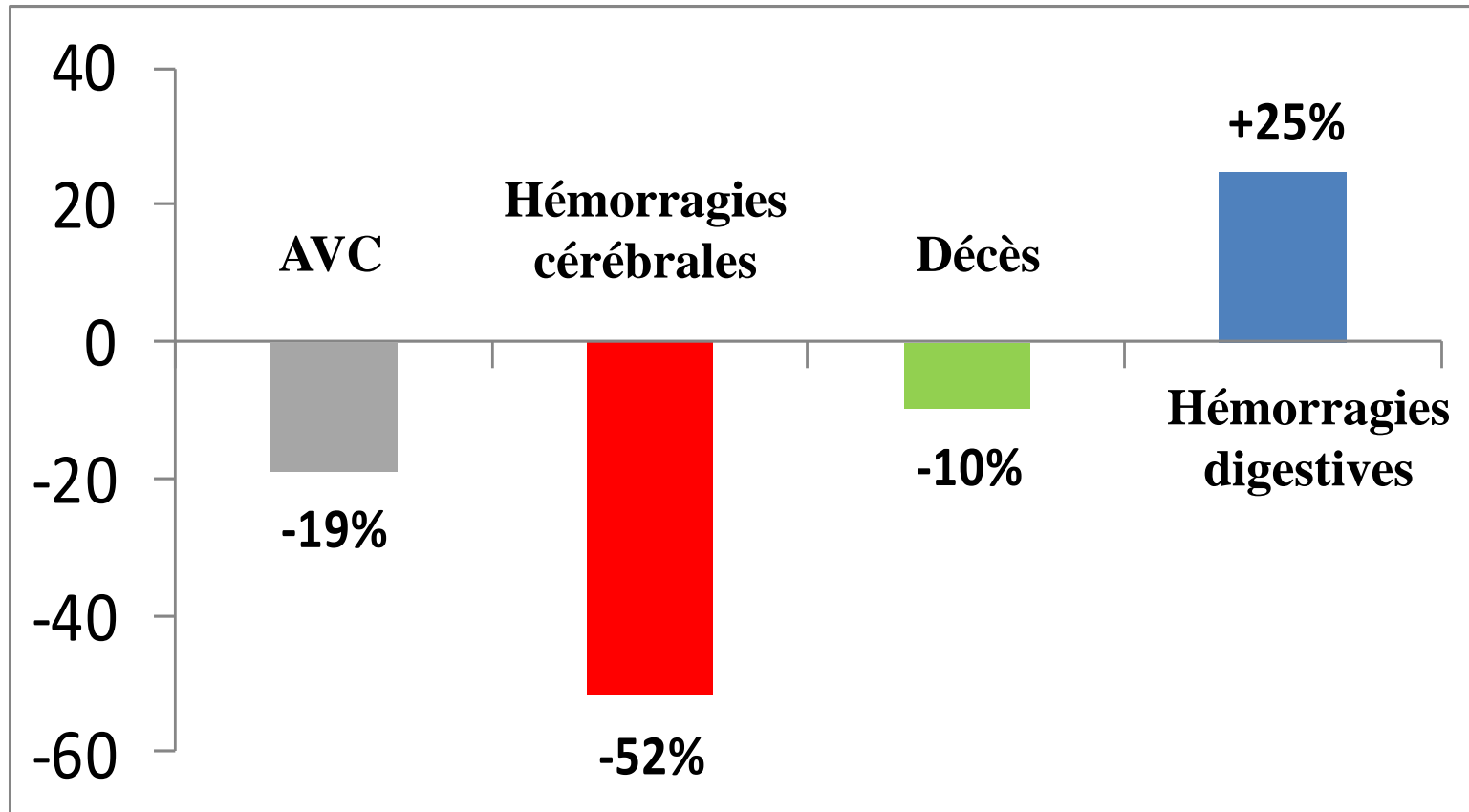
Mais AVK : 1ère cause de iatrogénie chez le sujet âgé

Annual National Estimate of Hospitalizations (N = 99,628)
for Adverse Drug Events in Older U.S. Adults, 2007–2009



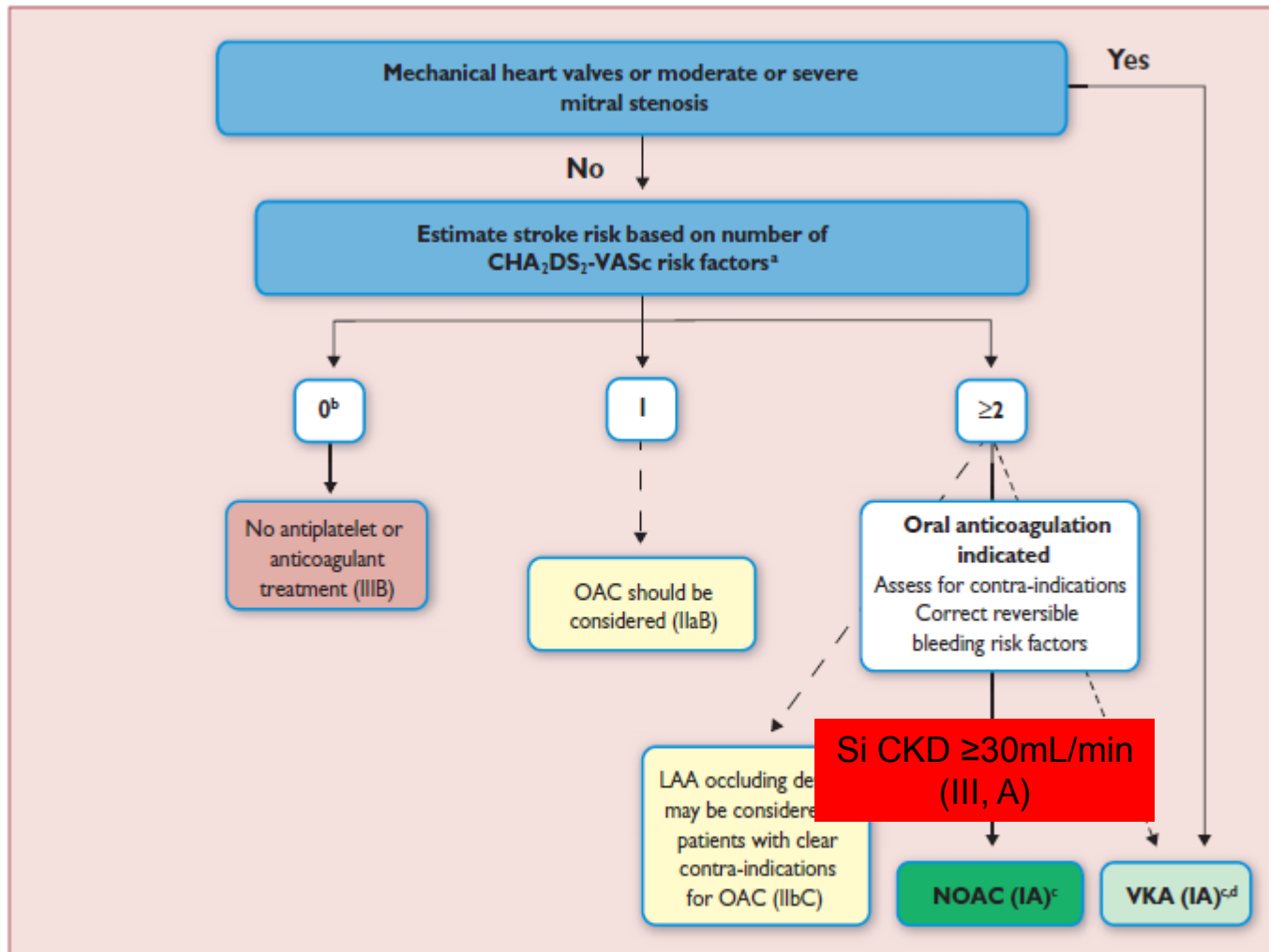
Méta-analyse FA – AOD vs AVK

% 71 683 participants, dont **29 099 ≥ 75 ans**



Résultats identiques > ou < 75 ans

Choix de l'anticoagulant

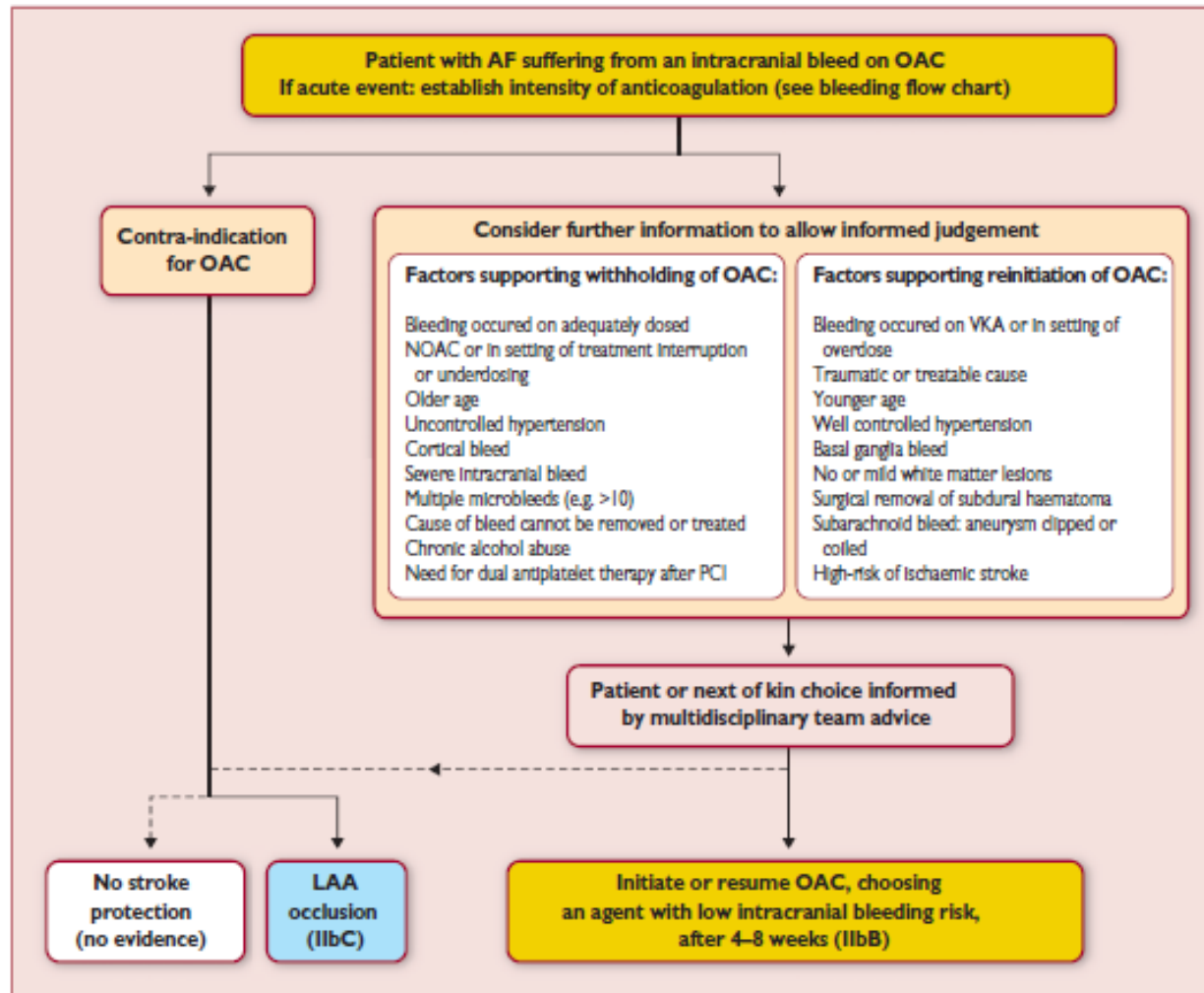


AF = atrial fibrillation; LAA = left atrial appendage; NOAC = non-vitamin K antagonist oral anticoagulant; OAC = oral anticoagulation; VKA = vitamin K antagonist.
 aCongestive heart failure, Hypertension, Age ≥75 years (2 points), Diabetes, prior Stroke/TIA/embolus (2 points), Vascular disease, age 65–74 years, female Sex.
 bIncludes women without other stroke risk factors.
 cIIaB for women with only one additional stroke risk factor.
 dIIb for patients with mechanical heart valves or mitral stenosis.

Recommendations	Class ^a	Level ^b
Oral anticoagulation therapy to prevent thromboembolism is recommended for all male AF patients with a CHA ₂ DS ₂ -VASc score of 2 or more.	I	A
Oral anticoagulation therapy to prevent thromboembolism is recommended in all female AF patients with a CHA ₂ DS ₂ -VASc score of 3 or more.	I	A
Oral anticoagulation therapy to prevent thromboembolism should be considered in male AF patients with a CHA ₂ DS ₂ -VASc score of 1, considering individual characteristics and patient preferences.	IIa	B
Oral anticoagulation therapy to prevent thromboembolism should be considered in female AF patients with a CHA ₂ DS ₂ -VASc score of 2, considering individual characteristics and patient preferences.	IIa	B
Vitamin K antagonist therapy (INR 2.0–3.0 or higher) is recommended for stroke prevention in AF patients with moderate-to-severe mitral stenosis or mechanical heart valves.	I	B
When oral anticoagulation is initiated in a patient with AF who is eligible for a NOAC (apixaban, dabigatran, edoxaban, or rivaroxaban), a NOAC is recommended in preference to a Vitamin K antagonist.	I	A
When patients are treated with a vitamin K antagonist, time in therapeutic range (TTR) should be kept as high as possible and closely monitored.	I	A
AF patients already on treatment with a vitamin K antagonist may be considered for NOAC treatment if TTR is not well controlled despite good adherence, or if patient preference without contra-indications to NOAC (e.g. prosthetic valve).	IIb	A
Combinations of oral anticoagulants and platelet inhibitors increase bleeding risk and should be avoided in AF patients without another indication for platelet inhibition.	III (harm)	B
In male or female AF patients without additional stroke risk factors, anticoagulant or antiplatelet therapy is not recommended for stroke prevention.	III (harm)	B
Antiplatelet monotherapy is not recommended for stroke prevention in AF patients, regardless of stroke risk.	III (harm)	A
NOACs (apixaban, dabigatran, edoxaban, and rivaroxaban) are not recommended in patients with mechanical heart valves (Level of evidence B) or moderate-to-severe mitral stenosis (Level of evidence C).	III (harm)	B C



Ré initiation après AVCh



AF = atrial fibrillation; LAA = left atrial appendage; NOAC = non-vitamin K antagonist oral anticoagulant; OAC = oral anticoagulation; PCI = percutaneous coronary intervention; VKA = vitamin K antagonist.

Heart Team / FAG

- **Neurologue**
- **Cardiologue**
- **Neuroradiologue**
- **± Neurochirurgien**
- **± Gériatre selon l'âge**
- **± Gastro-entérologue**

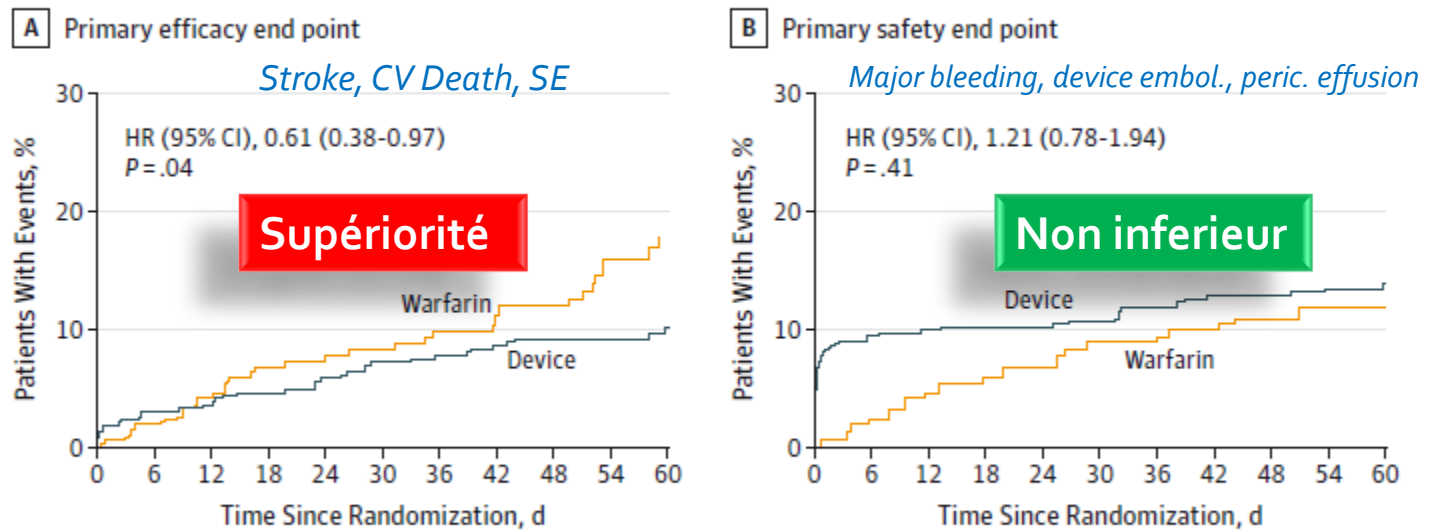
Exclusion de l'auricule G

Recommendations for occlusion or exclusion of the left atrial appendage

Recommendations	Class ^a	Level ^b	Ref ^c
After surgical occlusion or exclusion of the LAA, it is recommended to continue anticoagulation in at-risk patients with AF for stroke prevention.	I	B	461, 462
LAA occlusion may be considered for stroke prevention in patients with AF and contra-indications for long-term anticoagulant treatment (e.g. those with a previous life-threatening bleed without a reversible cause).	IIb	B	449, 453, 454
Surgical occlusion or exclusion of the LAA may be considered for stroke prevention in patients with AF undergoing cardiac surgery.	IIb	B	463
Surgical occlusion or exclusion of the LAA may be considered for stroke prevention in patients undergoing thoracoscopic AF surgery.	IIb	B	468

PROTECT-AF: long terme (4 ans)

Figure 2. Kaplan-Meier Curves for the Primary Efficacy and Safety End Points



No. of patients	0	6	12	18	24	30	36	42	48	54	60
Device	463	398	382	370	360	345	337	327	317	285	196
Warfarin	244	230	218	210	200	188	173	159	147	121	87

No. of patients	0	6	12	18	24	30	36	42	48	54	60
Device	463	376	364	357	353	341	332	320	310	277	190
Warfarin	244	228	214	207	195	183	169	153	139	117	86

Bénéfice supérieur:

- Score HAS-BLED élevé
- >75 ans
- Diabète
- Prévention II^{aire} AVC

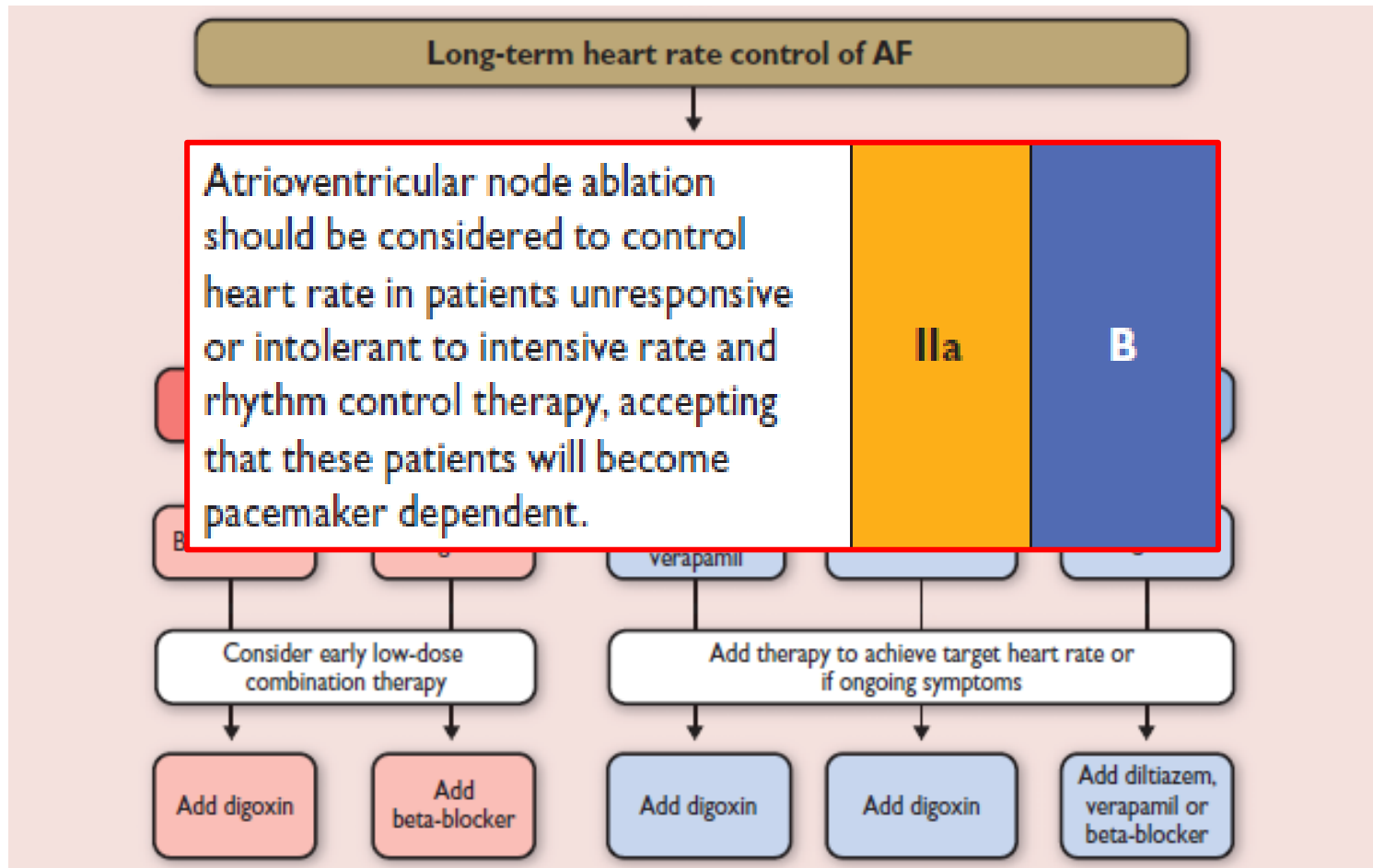
Reddy V., JAMA. 2014;312(19):1988-1998

Post angioplastie

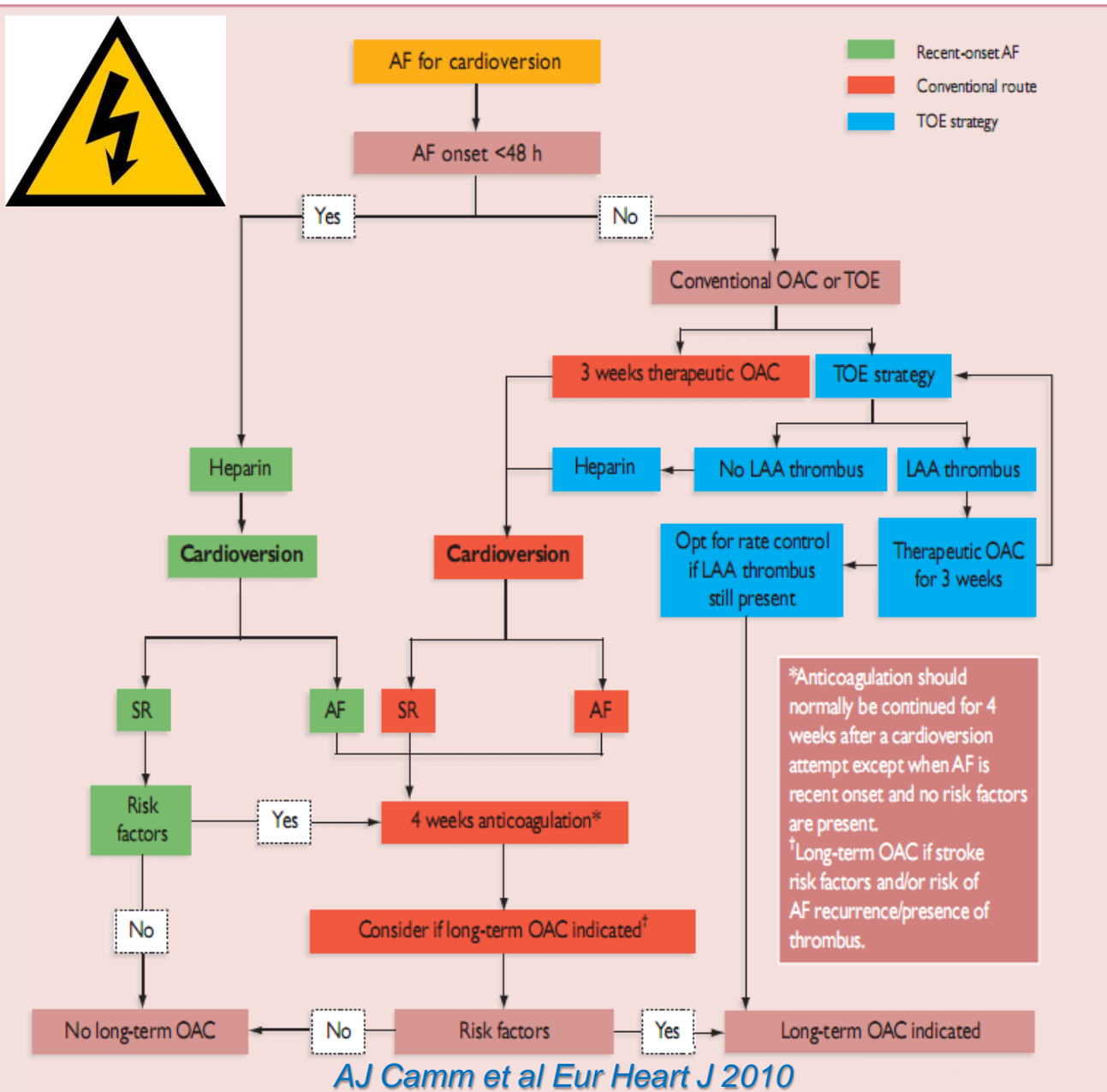
Recommendations for combination therapy with oral anticoagulants and antiplatelets

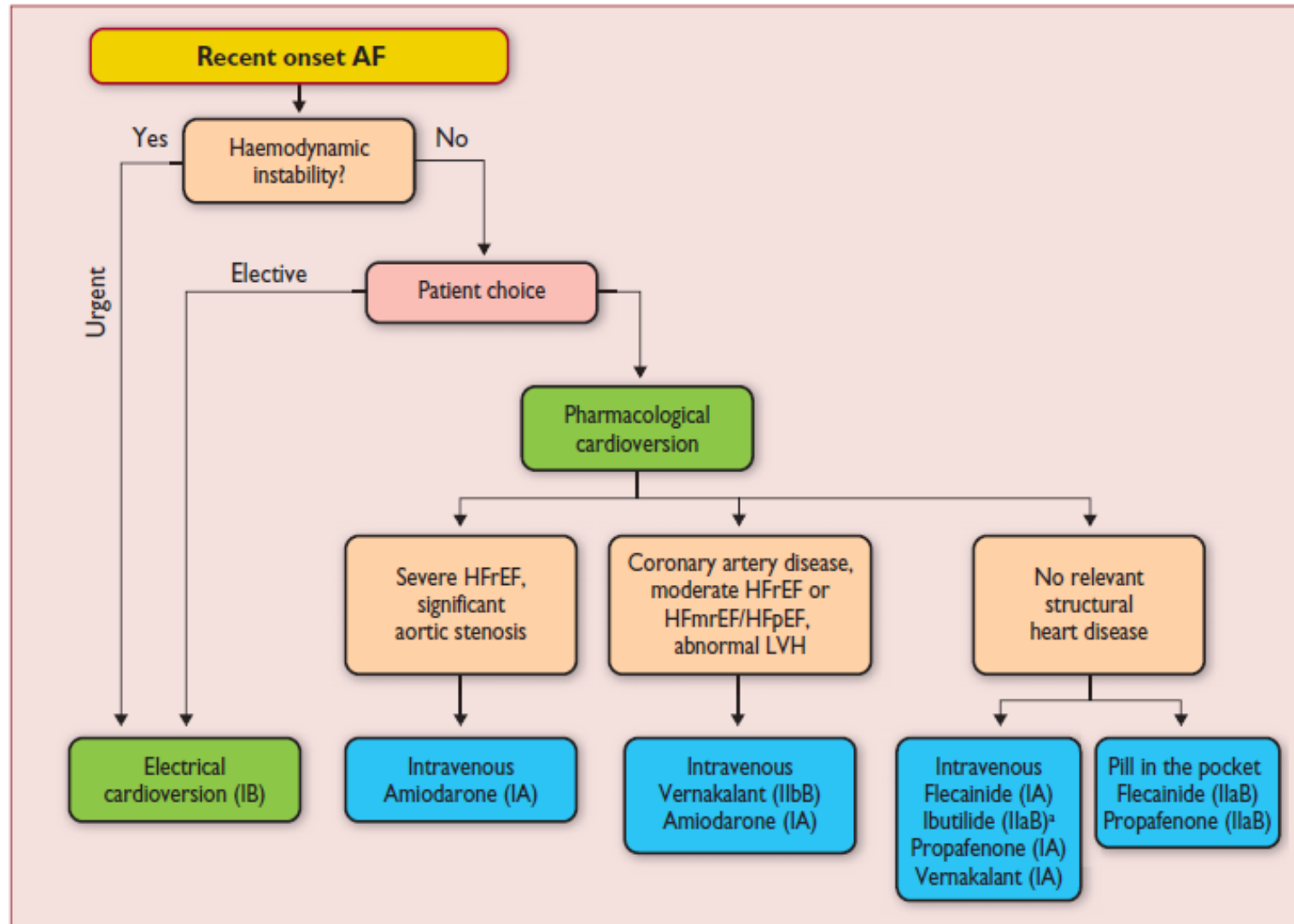
Recommendations	Class ^a	Level ^b	Ref ^c
After elective coronary stenting for stable coronary artery disease in AF patients at risk of stroke, combination triple therapy with aspirin, clopidogrel and an oral anticoagulant should be considered for 1 month to prevent recurrent coronary and cerebral ischaemic events.	IIa	B	522,524
After an ACS with stent implantation in AF patients at risk of stroke, combination triple therapy with aspirin, clopidogrel and an oral anticoagulant should be considered for 1–6 months to prevent recurrent coronary and cerebral ischaemic events.	IIa	C	520
After an ACS without stent implantation in AF patients at risk of stroke, dual treatment with an oral anticoagulant and aspirin or clopidogrel should be considered for up to 12 months to prevent recurrent coronary and cerebral ischaemic events.	IIa	C	
The duration of combination antithrombotic therapy, especially triple therapy, should be kept to a limited period, balancing the estimated risk of recurrent coronary events and bleeding.	IIa	B	520
Dual therapy with any oral anticoagulant plus clopidogrel 75 mg/day may be considered as an alternative to initial triple therapy in selected patients.	IIb	C	524,525

Contrôle de FC à long terme



Contrôle du RYTHME

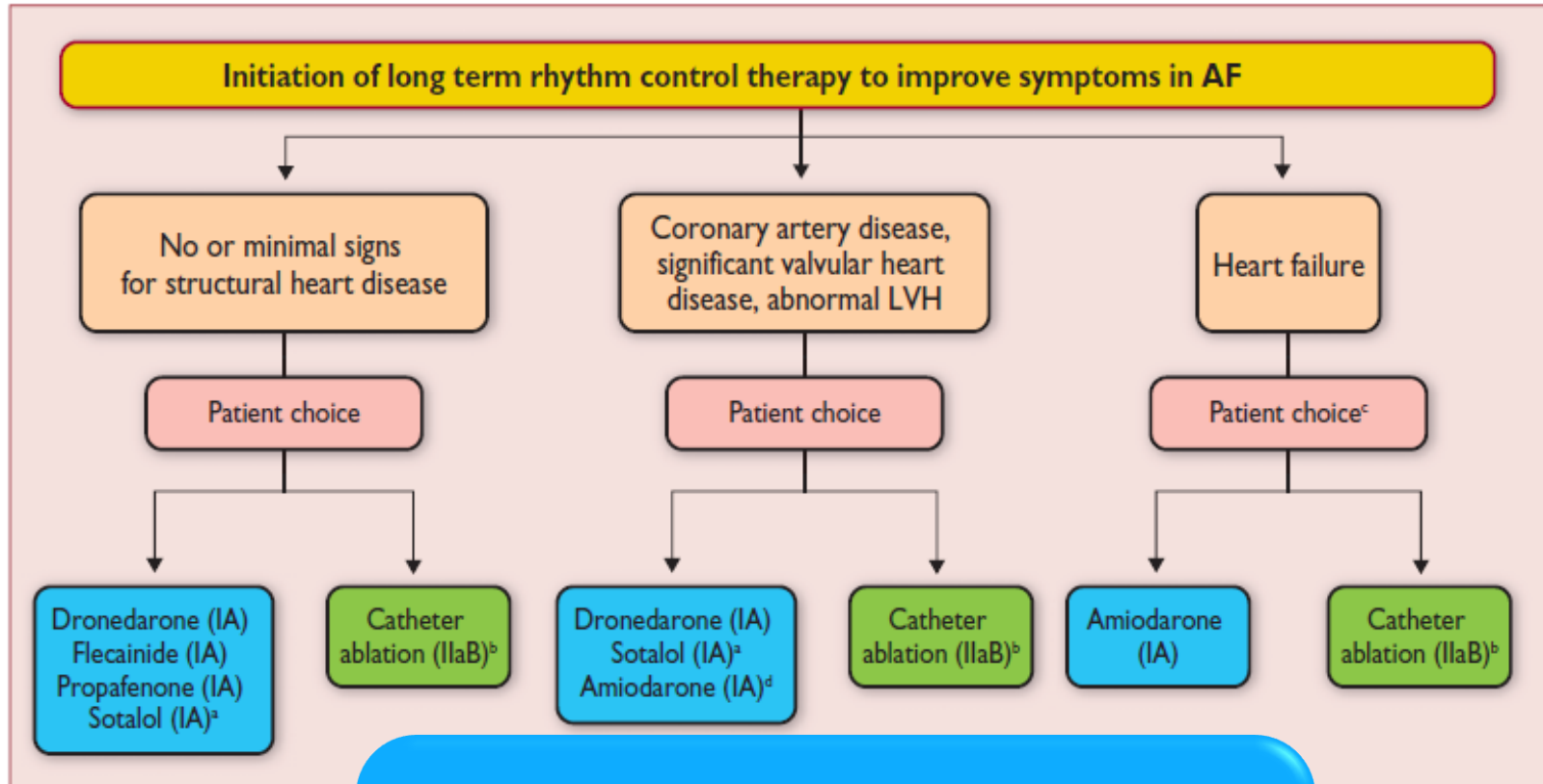




AF = atrial fibrillation; HFmrEF = heart failure with mid-range ejection fraction; HFpEF = heart failure with preserved ejection fraction; HFrEF = heart failure with reduced ejection fraction; LVH = left ventricular hypertrophy.

*Ibutilide should not be used in patients with long QT interval.

Contrôle du RYTHME



AF = atrial fibrillation; HF = heart failure;
^aSotalol requires careful evaluation of pro
^bCatheter ablation should isolate pulmon
^cCatheter ablation as a first-line therapy i
^dAmiodarone is a second-choice therapy

**Bénéfice symptomatique
Pas de bénéfice pronostique
démonstré à ce jour**

Ablation de FA

Table 18 Complications related to catheter ablation of atrial fibrillation

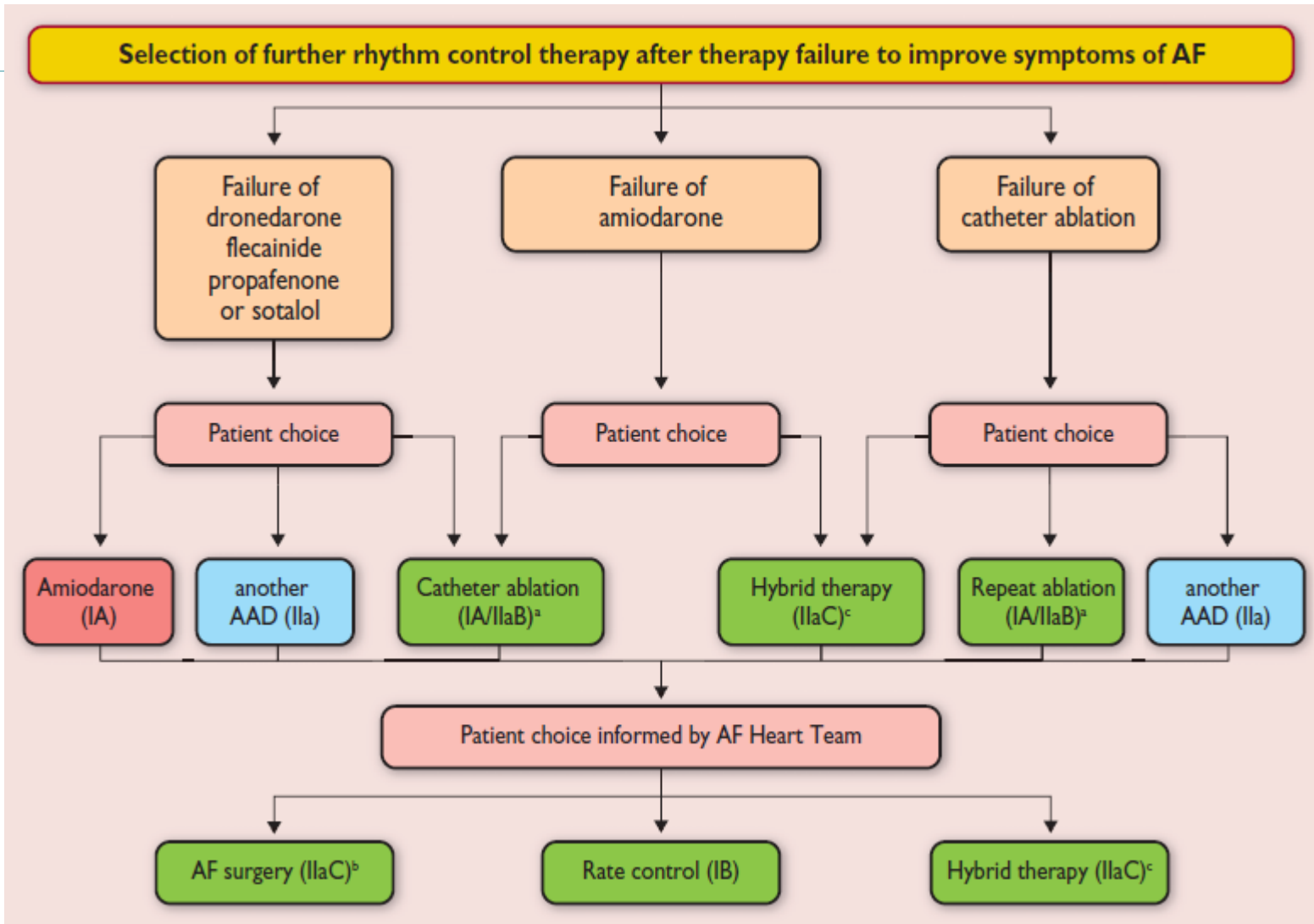
Complication severity	Complication type	Rate ^{727, 748, 750, 754-759}
Life-threatening complications	Periprocedural death	<0.2%
	Oesophageal injury (perforation/fistula) ^a	<0.5%
	Periprocedural stroke (including TIA/air embolism)	<1%
	Cardiac tamponade	1–2%
Other moderate or minor complications		1–2%
Unknown significance	Asymptomatic cerebral embolism (silent stroke) ^b	5–20%
	Radiation exposure	

^aOesophageal fistula should be suspected in patients presenting with the triad of unspecific signs of infection, chest pain, and stroke or TIA in the first weeks after an ablation procedure. It requires immediate therapy.

TIA = transient ischaemic attack.

^aOesophageal fistula should be suspected in patients presenting with the triad of unspecific signs of infection, chest pain, and stroke or TIA in the first weeks after an ablation procedure. It requires immediate therapy.

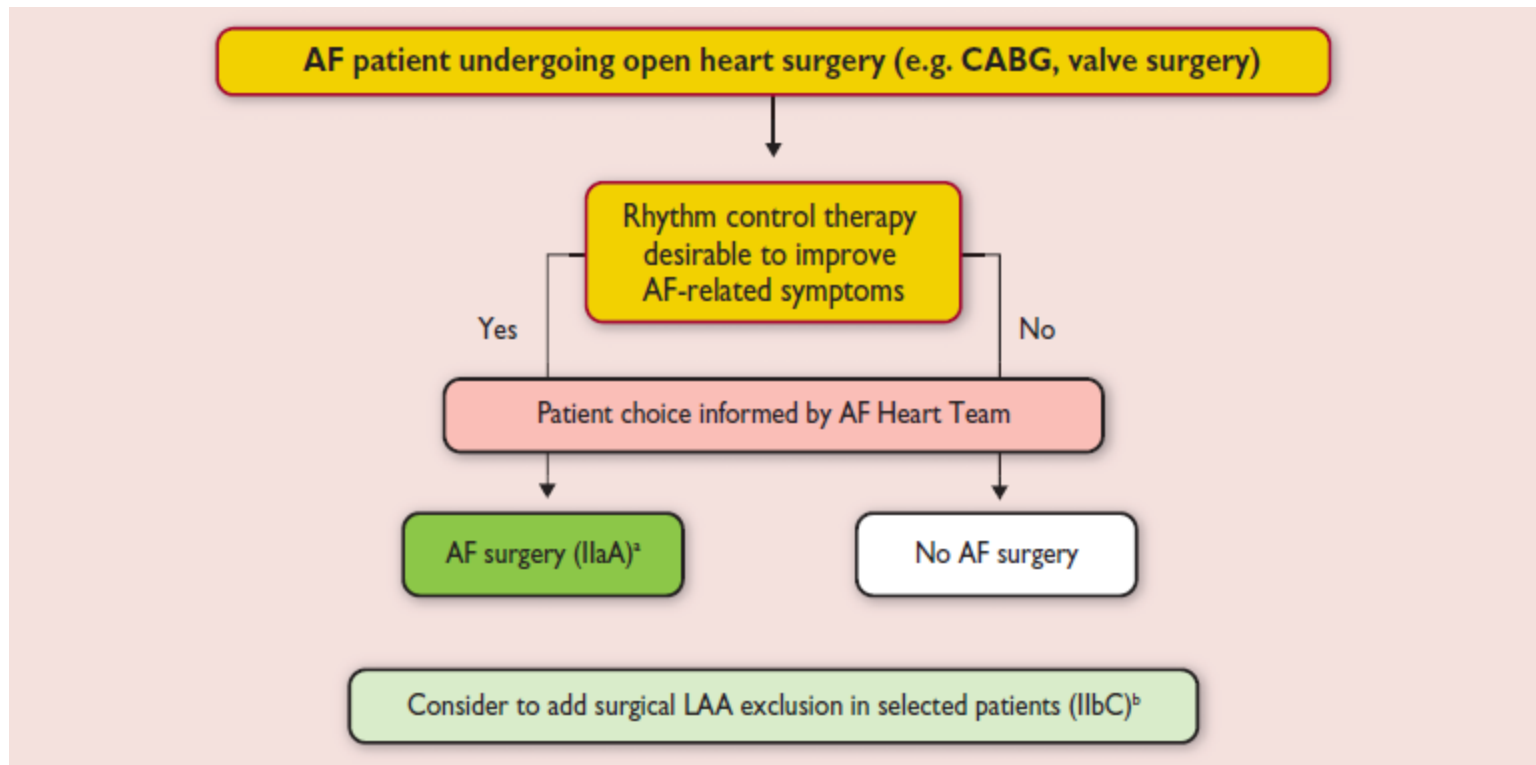
^b< 10% for cryoablation or radiofrequency ablation, > 20% for phased radiofrequency ablation.



Ablation de FA

Recommendations	Class ^a	Level ^b
Catheter ablation of symptomatic paroxysmal AF is recommended to improve AF symptoms 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
Ablation of common atrial flutter should be considered to prevent recurrent flutter as part of an AF ablation procedure if documented or occurring during the AF ablation.	IIa	B
Catheter ablation of AF should be considered as first-line therapy to prevent recurrent AF and to improve symptoms in selected patients with symptomatic paroxysmal AF as an alternative to antiarrhythmic drug therapy, considering patient choice, benefit, and risk.	IIa	B
All patients should receive oral anticoagulation for at least 8 weeks after catheter (IIaB) or surgical (IIaC) ablation.	IIa	B C
Anticoagulation for stroke prevention should be continued indefinitely after apparently successful catheter or surgical ablation of AF in patients at high-risk of stroke.	IIa	C
When catheter ablation of AF is planned, continuation of oral anticoagulation with a VKA (IIaB) or NOAC (IIaC) should be considered during the procedure, maintaining effective anticoagulation.	IIb	B C
Catheter ablation should target isolation of the pulmonary veins using radiofrequency ablation or cryotherapy balloon catheters.	IIa	B

Chirurgie programmée



Situations particulières

Recommendations for inherited cardiomyopathies

Recommendations	Class ^a	Level ^b
WPW Syndrome		
Catheter ablation of the accessory pathway in WPW patients with AF and rapid conduction over the accessory pathway is recommended to prevent sudden cardiac death.	I	B
Catheter ablation of the accessory pathway is recommended without delay in WPW patients who survive sudden cardiac death.	I	C
Asymptomatic patients with overt pre-excitation and AF should be considered for accessory pathway ablation after careful counselling.	IIa	B
Hypertrophic cardiomyopathy		
Lifelong oral anticoagulation to prevent stroke is recommended in HCM patients who develop AF.	I	B
Restoration of sinus rhythm by electrical or pharmacological cardioversion to improve symptoms is recommended in HCM patients with symptomatic new-onset AF.	I	B
In haemodynamically stable HCM patients with AF, ventricular rate control using beta-blockers and diltiazem/verapamil is recommended.	I	C
Treatment of LV outflow tract obstruction should be considered in AF patients with HCM to improve symptoms.	I	C
Amiodarone should be considered to achieve rhythm control and maintain sinus rhythm in HCM patients with recurrent symptomatic AF.	I	C
Inherited cardiomyopathies and channelopathies		
Targeted genetic testing should be considered in patients with AF and a suspicion of inherited cardiomyopathies or channelopathies based on clinical history, family history or electrocardiographic phenotype.	IIa	A

Disopyramide
CMHO

Athlètes

Recommendations	Class ^a	Level ^b
Moderate regular physical activity is recommended to prevent AF, while athletes should be counselled that long-lasting intense sports participation can promote AF.	I	A
AF ablation should be considered to prevent recurrent AF in athletes.	IIa	B

Grossesse

Recommendations during pregnancy

Recommendations	Class ^a	Level ^b	Ref ^c
Electrical cardioversion can be performed safely at all stages of pregnancy, and is recommended in patients who are haemodynamically unstable due to AF, and whenever the risk of ongoing AF is considered high for the mother or the foetus.	I	C	
Anticoagulation is recommended in pregnant patients with AF at risk of stroke. To minimize teratogenic risk and intrauterine bleeding, dose-adjusted heparin is recommended during the first trimester of pregnancy and in the 2–4 weeks before delivery. Vitamin K antagonists or heparin can be used in the remaining parts of the pregnancy.	I	B	923
NOACs should be avoided in pregnancy and in women planning a pregnancy.	III (harm)	C	

Recommendations in patients with grown-up congenital heart disease

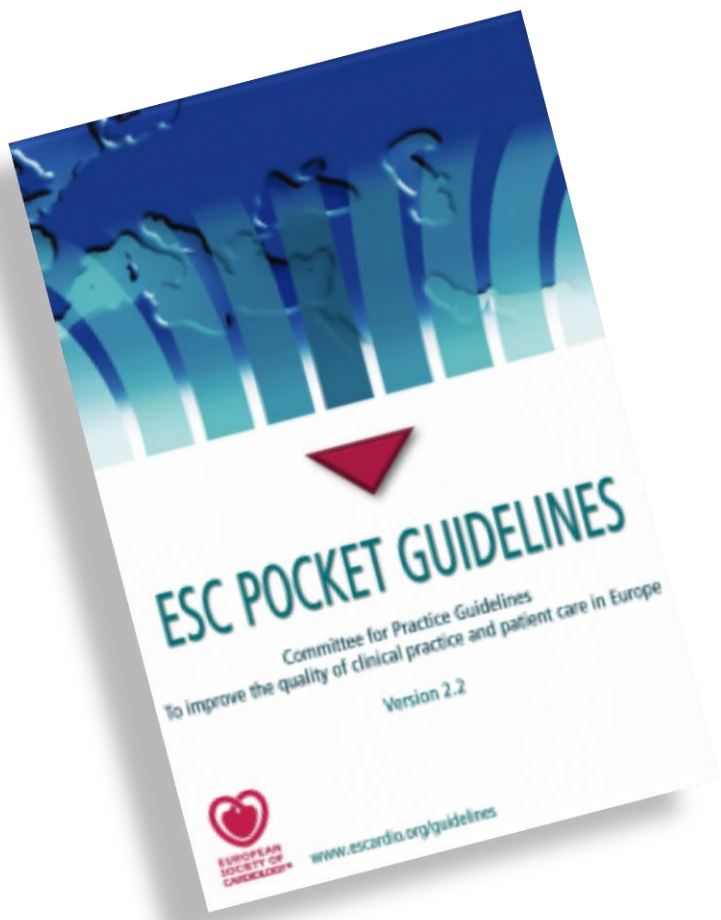
Recommendations	Class ^a	Level ^b
Atrial septal defect closure should be considered before the fourth decade of life to diminish the chance of atrial flutter and fibrillation.	IIa	C
In patients who need surgical closure of an atrial septal defect and who have a history of symptomatic atrial arrhythmia, AF ablation should be considered at the time of surgical closure.	IIa	C
Cox maze surgery should be considered in patients with symptomatic AF and an indication for corrective repair of congenital heart defects. All such surgery should be done in experienced centres.	IIa	C
Oral anticoagulation should be considered in all adult patients with intracardiac repair, cyanosis, Fontan palliation or systemic right ventricle and a history of AF, atrial flutter or intra-atrial reentrant tachycardia. In all other congenital heart disease patients with AF, anticoagulation should be considered if CHA ₂ DS ₂ -VASC score is ≥ 1 .	IIa	C
Catheter ablation of atrial arrhythmias associated with congenital heart defects may be considered when performed in experienced centres.	IIb	C
In patients with congenital heart disease, transoesophageal echocardiography may be considered together with 3-week anticoagulation therapy before cardioversion.	IIb	C

Les 17 commandements de l'ESC 2016

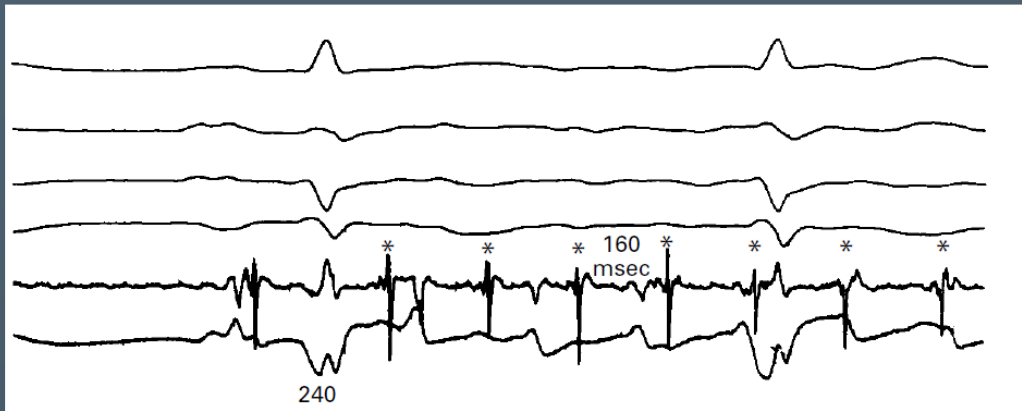
- Dépistage de la FA par ECG (pts >65 ans et ATCD AVC)
- Documenter la FA avant de débuter un ttt (ECG+++)
- Ex physique, ECG, ETT (recherche CP structurale, HTA,...)
- Information adaptée et éducation thérapeutique au patient
- Règles hygiéno-diététiques et mode de vie adaptés
- Traiter la CP sous-jacente (valve, IC), l'HTA. Thérapies d'amont
- Anticoaguler presque tous les pts sauf CHA2DS2-VASc =0 ou CI définitive aux ACO
- Flutter: ACO identique; ablation de l'ICT quand symptomatique
- Agir sur les causes réversibles de saignement sous ACO: réduire durée de ttt AAP, éviter AINS, OH, l'anémie...

Les 17 commandements de l'ESC 2016

- Vérifier la FC et adopter un contrôle « lâche » de la FC (<110/min repos)
- Adapter la stratégie aux symptômes (échelle EHRA), du contrôle de FC à l'ablation de FA
- Choisir les AAR selon leur profil de sécurité et Ablation si échec
- Pas de génotypage en routine, sauf si suspicion de CP héréditaire associée
- Les AAP n'ont plus leur place en prévention d'AVC
- Ne pas arrêter définitivement un ACO chez les pts à risques sauf si décision multidisciplinaire
- Pas de contrôle de rythme si asymptomatique
- Jamais de Cardioversion ou d'ablation sans anticoagulation



Hammamet, 25.11.2016



Fibrillation Atriale

Recommandations ESC 2016

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MERCI !



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CARDIOLOGY®