



# Arythmies: focus recommandations consensus:

## Ablation de FA, nouveautés ESC 2024

**Stéphane Combes**

*scombes@clinique-pasteur.com*



**ESC**

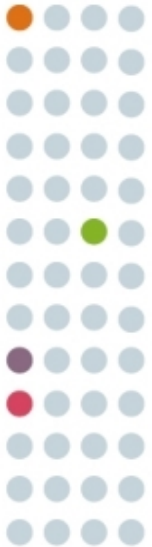
European Society of Cardiology  
Europace (2024) 26, 1–107  
<https://doi.org/10.1093/europace/euae043>

**EHRA DOCUMENT**



**EHRA**  
European Heart  
Rhythm Association

## **2024 European Heart Rhythm Association/ Heart Rhythm Society/Asia Pacific Heart Rhythm Society/Latin American Heart Rhythm Society expert consensus statement on catheter and surgical ablation of atrial fibrillation**



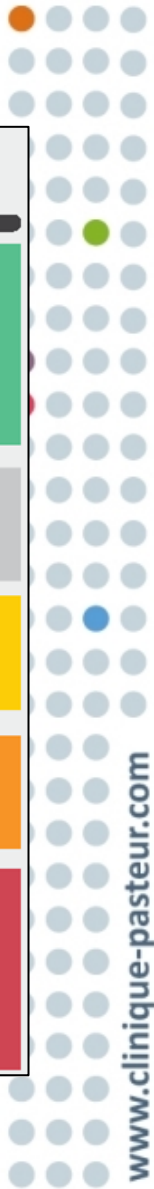
**ESC**

European Society of Cardiology  
European Heart Journal (2024) 45, 3314–3414  
<https://doi.org/10.1093/eurheartj/ehae176>

**ESC GUIDELINES**

## **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)*



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

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

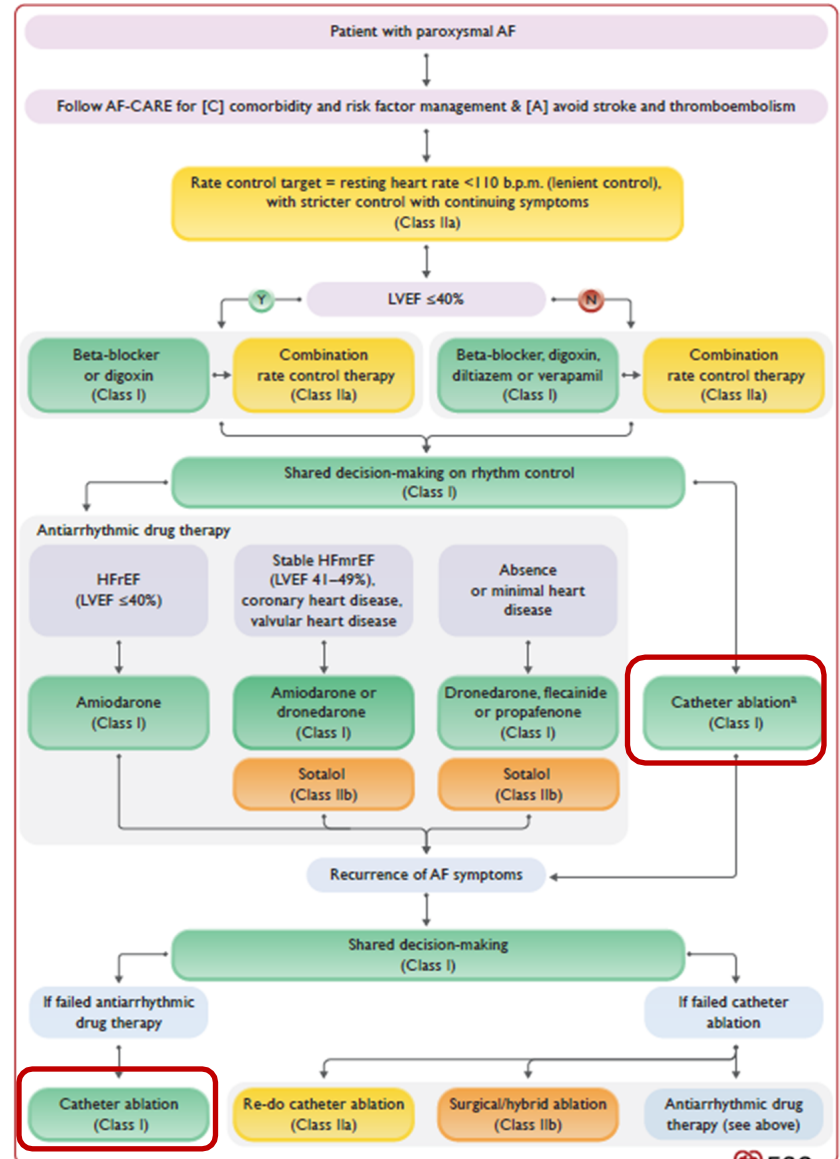
Developed by the task force for the management of atrial fibrillation of the European Society of Cardiology (ESC), with the special contribution of the European Heart Rhythm Association (EHRA) of the ESC. Endorsed by the European Stroke Organisation (ESO)

# Les indications: la FA paroxystique

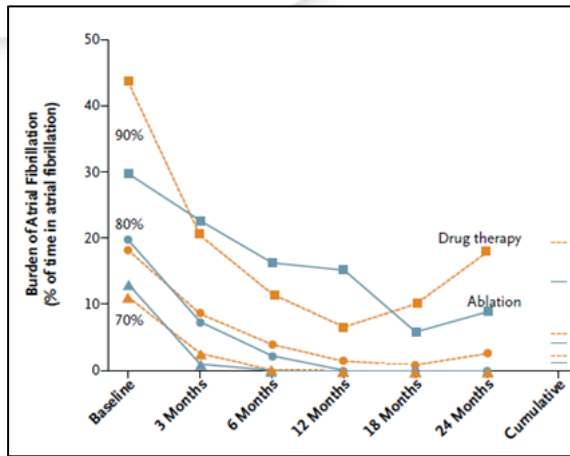
**NOUVEAUTÉ**

## Guidelines 2020

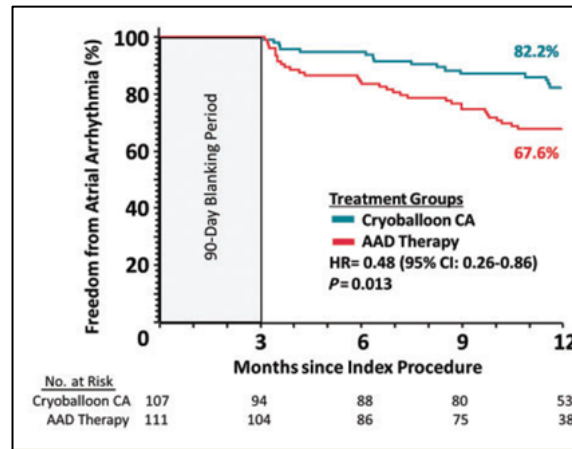
AF catheter ablation for PVI should/may be considered as first-line rhythm control therapy to improve symptoms in selected patients with symptomatic:	IIa	B
• Paroxysmal AF episodes.		



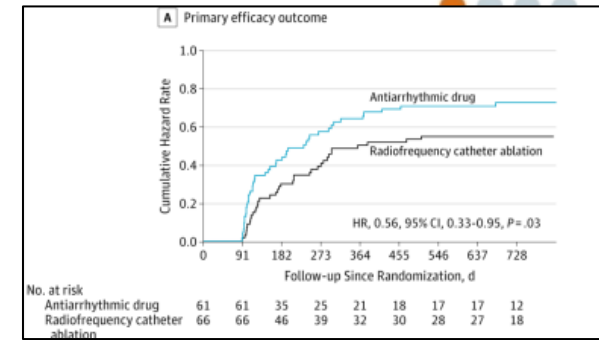
# Le match: ablation vs traitement médicamenteux



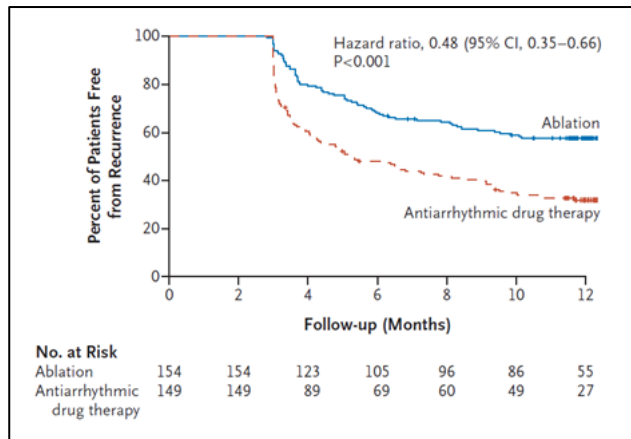
MANTRA PAF, Nielsen JC et al, NEJM 2012



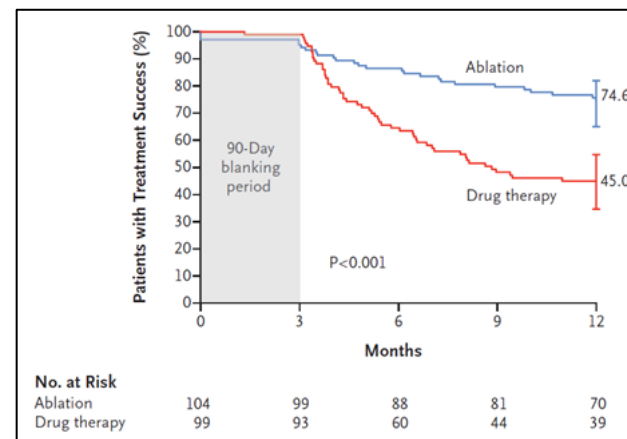
Cryo First Kuniss M et al *Europace* 2021



RAAFT 2 Morillo CA et al *JAMA* 2014



EARLY AF Andrade JG et al *NEJM* 2021

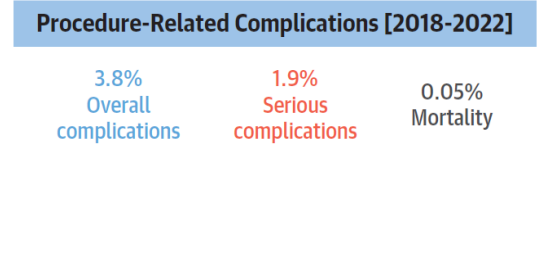
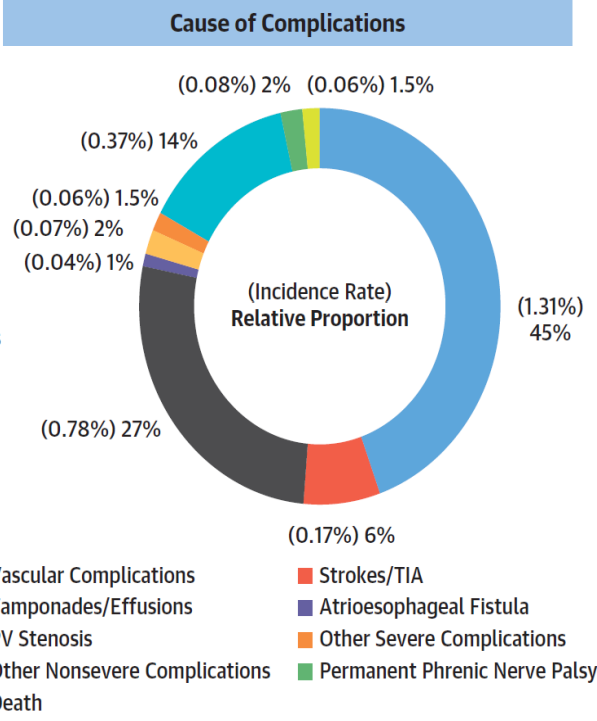
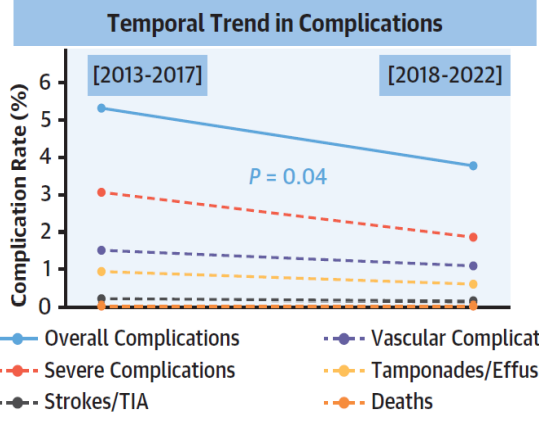
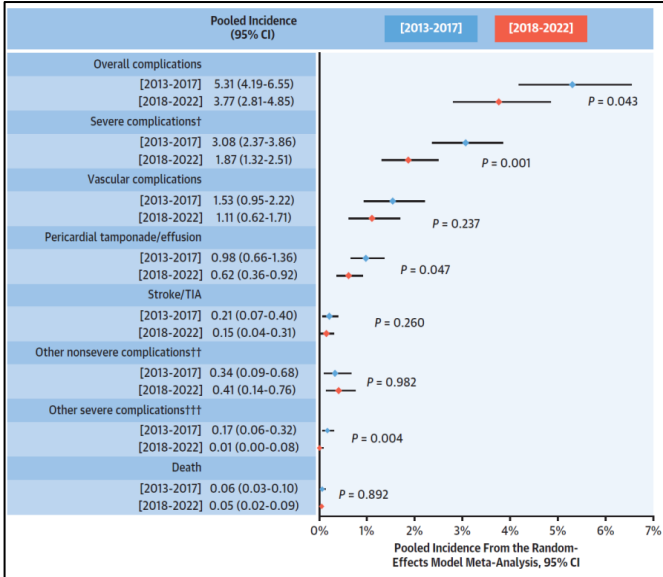


STOP AF, Wazni OM et al *NEJM* 2021

# L'ablation par RF: une technique de plus en plus sûre



## 89 RCTs Published Between 2013 and 2022, 15,701 Patients Undergoing a First CA Procedure for AF Procedure-Related Complications



- **Complications les plus fréquentes = Complications vasculaires (peu sévères)**
- **Taux peu élevé de complications sérieuses ≈1% / Taux décès <0,1%**
- **Amélioration du profil de sécurité de la depuis 10 ans**

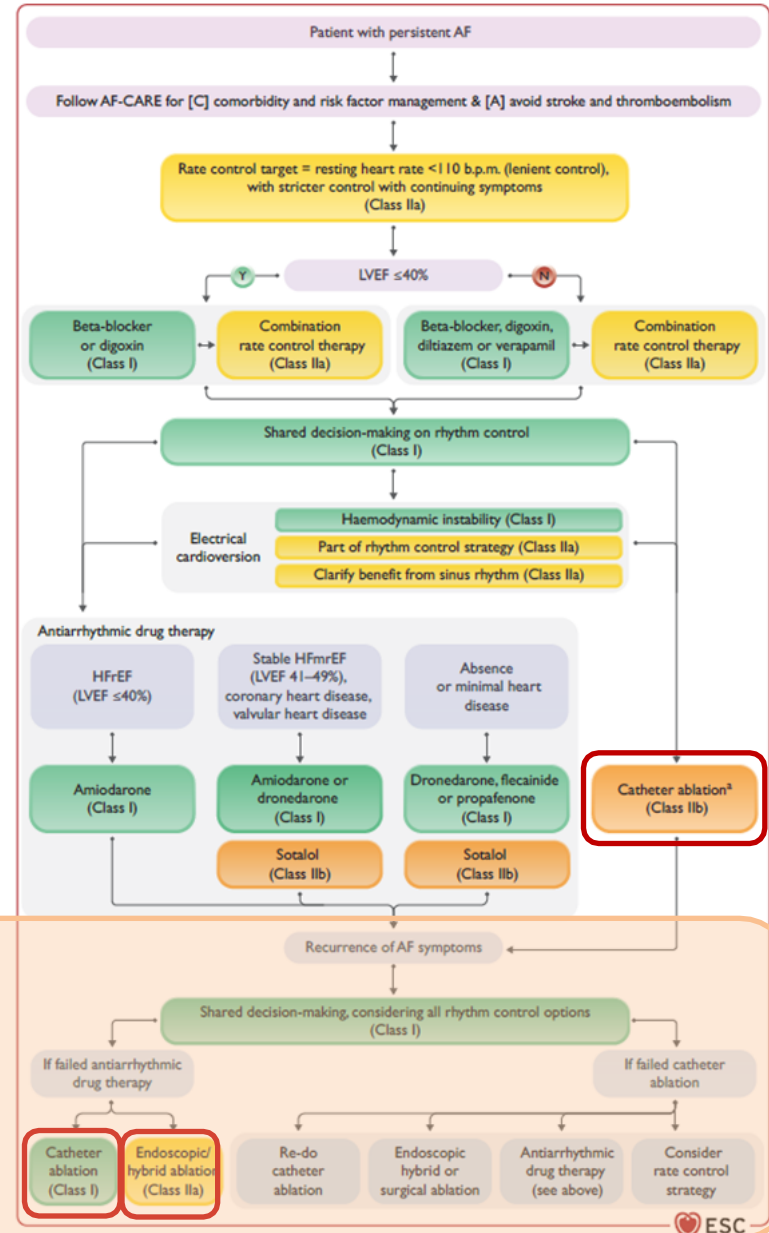
# Les indications: la FA persistante

## Guidelines 2020

Catheter ablation may be considered as a first-line option within a shared decision-making rhythm control strategy in selected patients with persistent AF to reduce symptoms, recurrence, and progression of AF.

**IIb**

**C**



## L'ablation hybride médico chirurgicale

### Endoscopic and hybrid AF ablation—Section 7.2.7

Continuation of oral anticoagulation is recommended in patients with AF at elevated thromboembolic risk after concomitant, endoscopic, or hybrid AF ablation, independent of rhythm outcome or LAA exclusion, to prevent ischaemic stroke and thromboembolism.

Endoscopic and hybrid ablation procedures should be considered in patients with symptomatic persistent AF refractory to AAD therapy to prevent symptoms, recurrence, and progression of AF, within a shared decision-making rhythm control team of electrophysiologists and surgeons.

<b>I</b>	<b>C</b>
<b>IIa</b>	<b>A</b>

**NOUVEAUTÉ**

# Les indications: la FA asymptomatique

## Patients without AF-related symptoms

Catheter ablation of AF may be reasonable in selected asymptomatic patients with recurrent paroxysmal or persistent AF following thorough discussion of potential risks and associated benefits

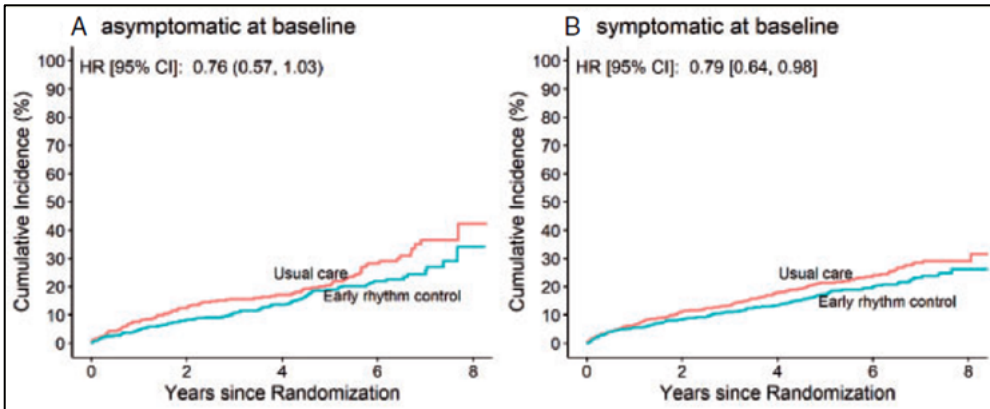
Area of uncertainty

OPN

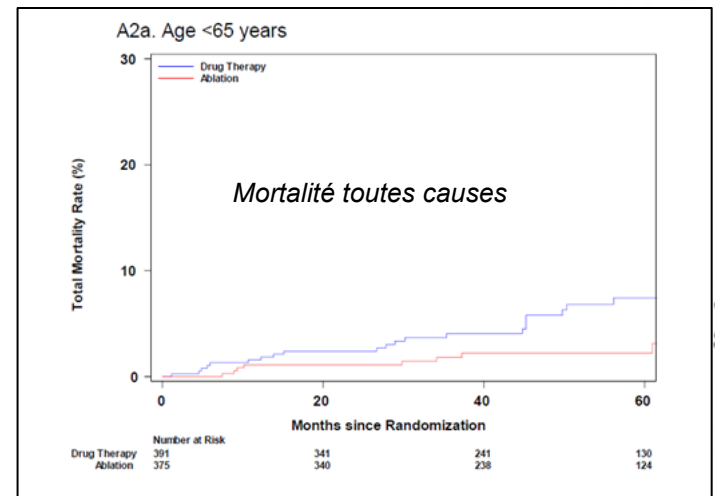
## Intérêt de la cardioversion

overion.<sup>324</sup> Therefore, in asymptomatic patients, especially at younger age, a cardioversion is worth attempting to assess potential symptomatic improvement that would enhance patient eligibility for catheter ablation due to reclassification in the symptomatic category.

## EAST-AFNET 4 (2022)



## CABANA (2021)

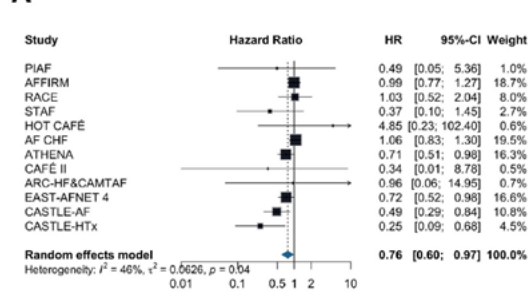




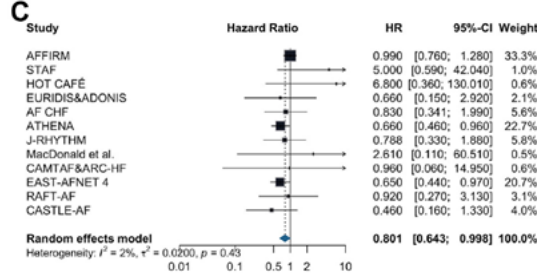
18 études, 17536 patients



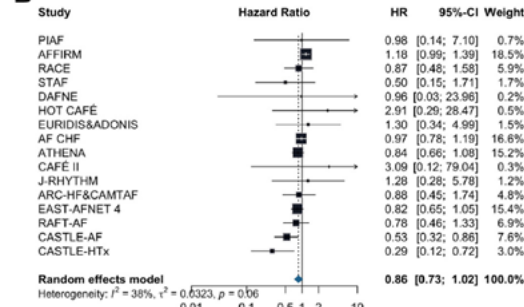
**A** Décès cardiovasculaires



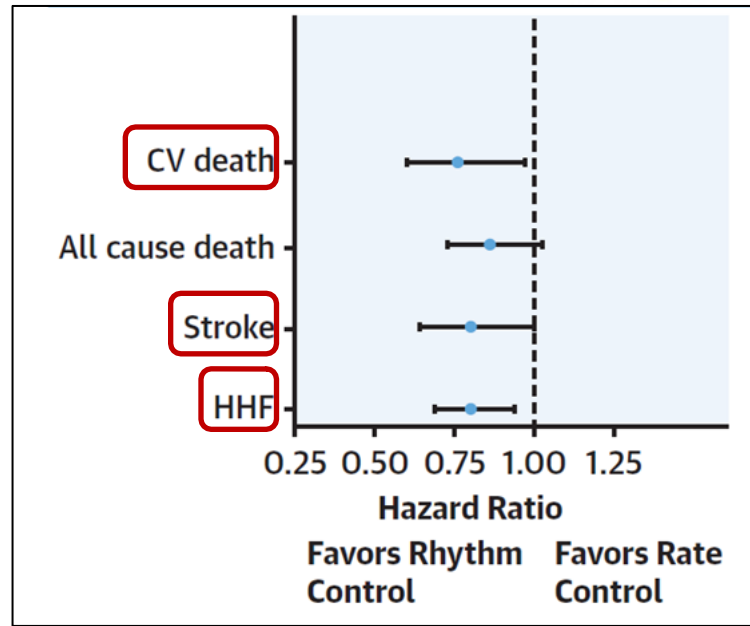
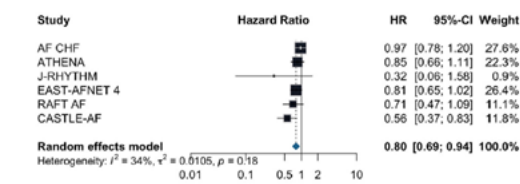
**AVC**



**B** Décès toutes causes

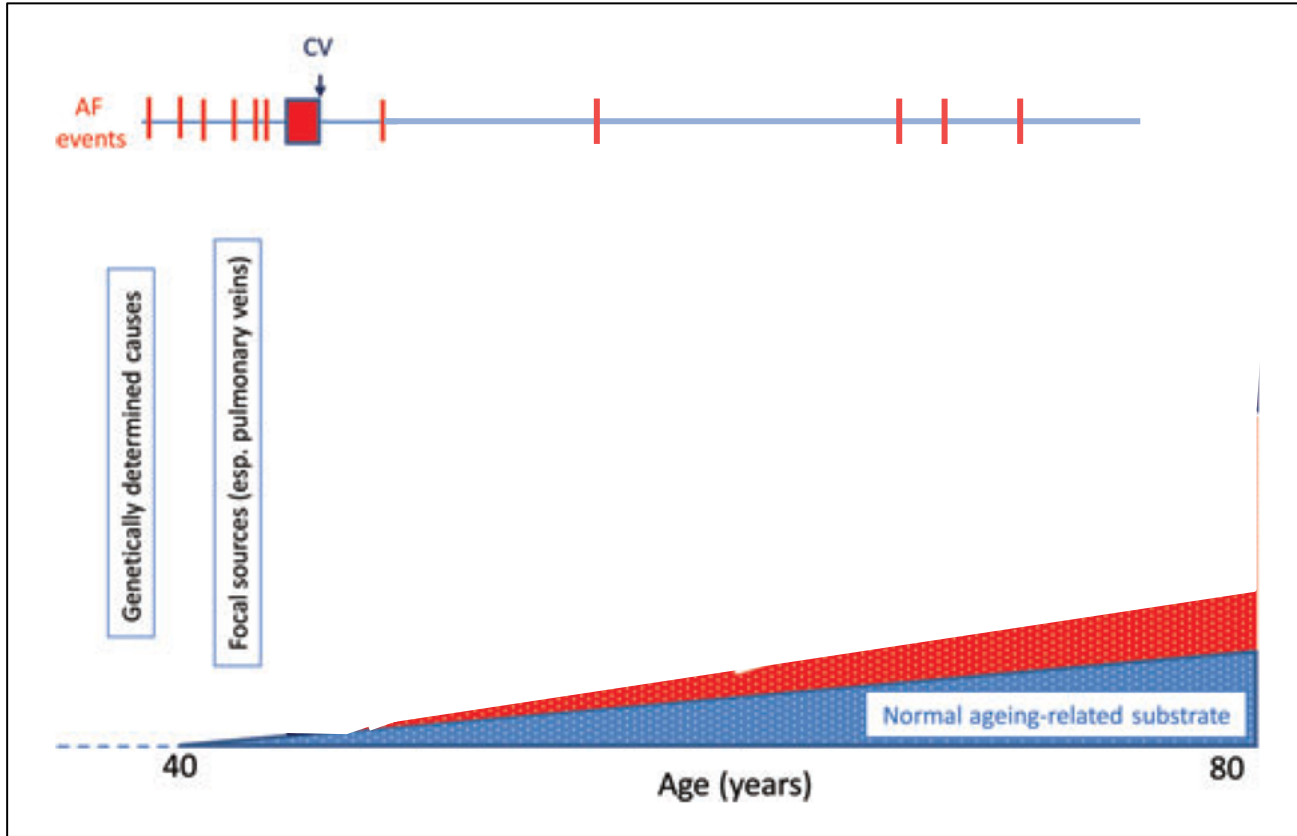


**D** Hospitalisations IC



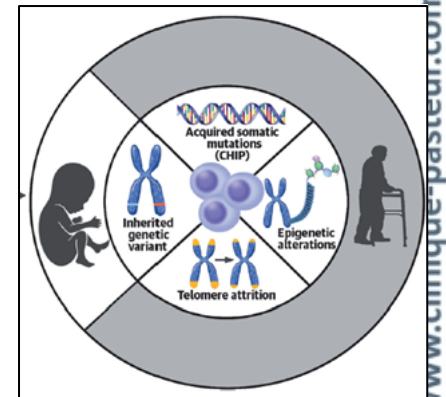
# une évolution inéluctable...

Nattel S et al, European Heart Journal 2014



**Ablation de FA  
Diminution de la  
morbi-mortalité**

**Prise en charge  
globale du patient  
avec ses  
comorbidités**



**2024 European Heart Rhythm Association/  
 Heart Rhythm Society/Asia Pacific Heart  
 Rhythm Society/Latin American Heart Rhythm  
 Society expert consensus statement on  
 catheter and surgical ablation of atrial  
 fibrillation**

**Patients with heart failure**

AF catheter ablation is recommended in patients with AF and HFrEF with high probability of tachycardia-induced cardiomyopathy to reverse left ventricular dysfunction.<sup>604,611</sup>

**I**

**B**

AF catheter ablation should be considered in selected AF patients with HFrEF to reduce HF hospitalization and prolong survival.<sup>4,513,514,604,610,612</sup>

**IIa**

**B**

**Sinus node disease/tachycardia–bradycardia syndrome**

AF catheter ablation should be considered in patients with AF-related bradycardia or sinus pauses on AF termination to improve symptoms and avoid pacemaker implantation.<sup>595–598</sup>

**IIa**

**C**

Type de FA  
 dilatation atriale,  
 présence de fibrose atriale ou ventriculaire



# Les indications: population particulière

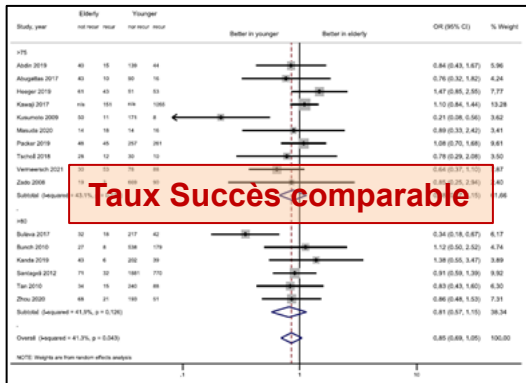
It is reasonable to use similar indications for AF ablation in older (>75 years of age) patients with AF as in younger patients after taking into account comorbidities and patient preferences

May be appropriate to  
**DO**

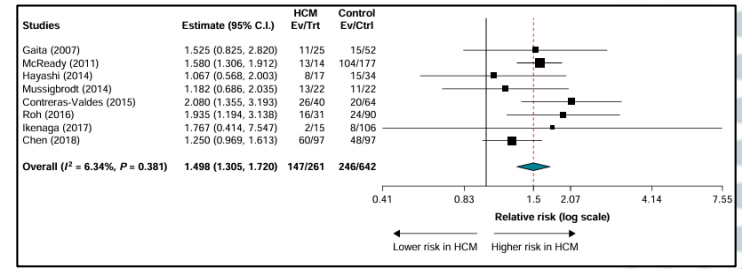
Catheter ablation of AF is reasonable in patients with hypertrophic cardiomyopathy after careful consideration of anticipated clinical benefit, associated risk of procedural complications, and potential need for more than one procedure

May be appropriate to  
**DO**

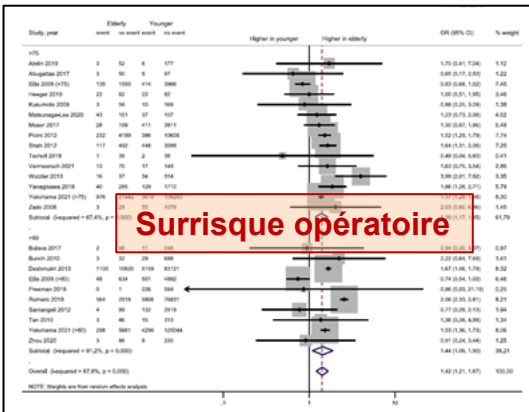
## La population sujet âgé > 75 ans



## La cardiopathie hypertrophique



Taux Succès plus faible



Pas de surrisque opératoire

**2024 European Heart Rhythm Association/  
Heart Rhythm Society/Asia Pacific Heart  
Rhythm Society/Latin American Heart Rhythm  
Society expert consensus statement on  
catheter and surgical ablation of atrial  
fibrillation**

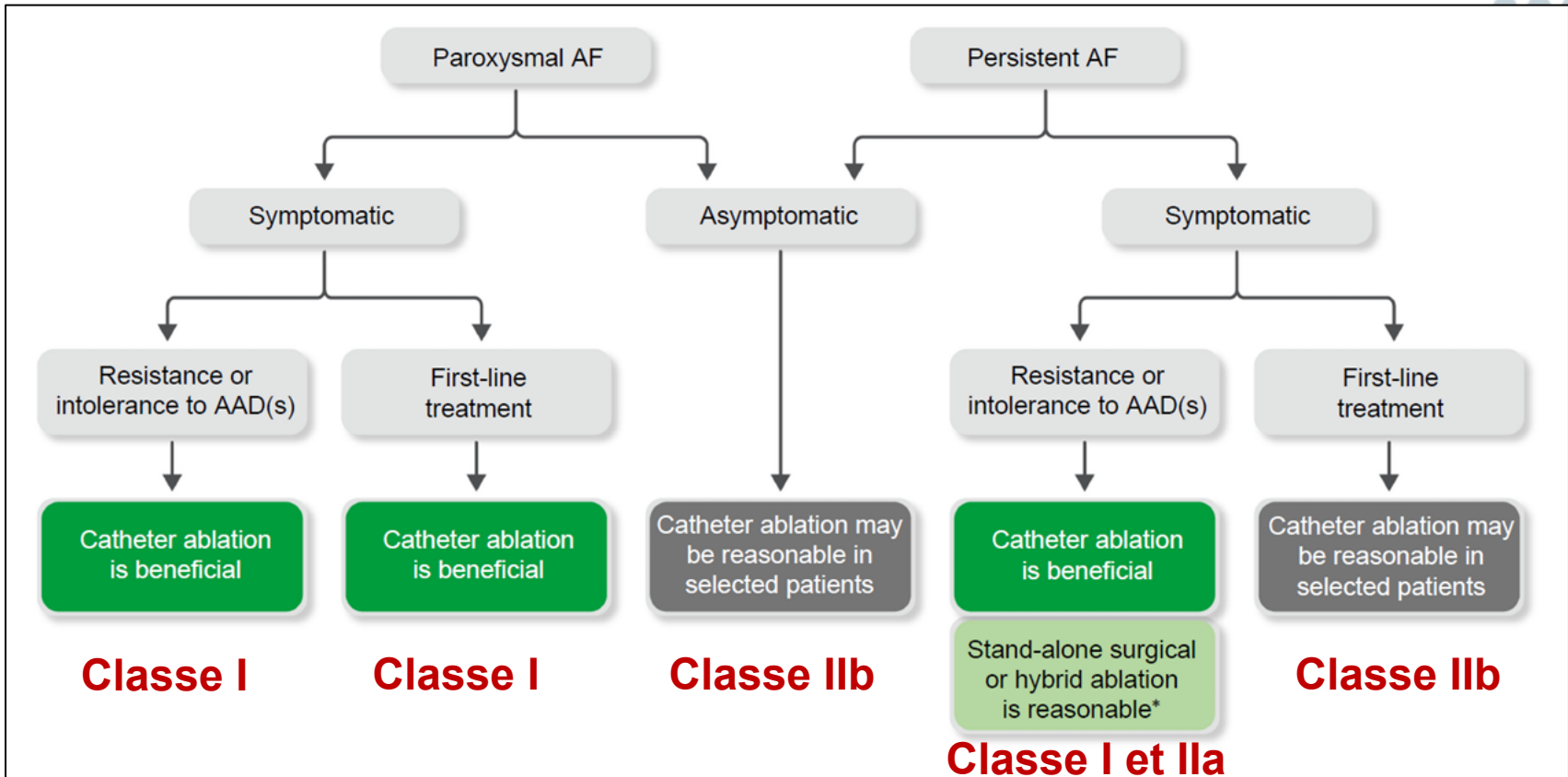
Recurrence after catheter ablation

Repeat AF catheter ablation should be considered in patients with AF recurrence after initial catheter ablation, provided the patient's symptoms were improved after the initial PVI or after failed initial PVI, to reduce symptoms, recurrence, and progression of AF.

**IIa**

**B**

**2024 European Heart Rhythm Association/  
Heart Rhythm Society/Asia Pacific Heart  
Rhythm Society/Latin American Heart Rhythm  
Society expert consensus statement on  
catheter and surgical ablation of atrial  
fibrillation**



## Preablation anticoagulation strategy

Patients with stroke risk factor(s) (CHA<sub>2</sub>DS<sub>2</sub>-VASc score  $\geq 1$  in males and  $\geq 2$  in females) or with increased risk of thrombus<sup>a</sup> should receive oral anticoagulation therapeutically for at least 3 weeks before AF catheter ablation

Advice TO DO

OBS<sup>367-380</sup>

Catheter ablation of AF without interruption of anticoagulation is beneficial in patients who have been therapeutically anticoagulated with either vitamin K antagonists or direct oral anticoagulants (DOACs)  
 For patients anticoagulated with a DOAC prior to AF catheter ablation, it is reasonable to hold one dose prior to AF catheter ablation with early reinitiation postablation

Advice TO DO

META<sup>381-393</sup>

May be appropriate TO DO

META<sup>394-398</sup>

## Imaging for exclusion of atrial thrombus

Transesophageal echocardiography or cardiac computed tomography within 48 h prior to catheter ablation or intraprocedural intracardiac echocardiography are reasonable imaging options for exclusion of atrial thrombus

May be appropriate TO DO

OBS<sup>399-408</sup>

Imaging for exclusion of atrial thrombus is reasonable in patients with stroke risk factor(s) (CHA<sub>2</sub>DS<sub>2</sub>-VASc score  $\geq 1$  in males and  $\geq 2$  in females) or with increased risk of thrombus<sup>a</sup> presenting for AF catheter ablation, who have not received anticoagulation therapeutically for 3 weeks or longer

May be appropriate TO DO

OBS<sup>367-380</sup>

Imaging for exclusion of atrial thrombus may be reasonable in patients with increased risk of thrombus<sup>b</sup> even if therapeutically anticoagulated for 3 weeks or longer

Area of uncertainty

OBS<sup>367-380</sup>

Recommendations	Class <sup>a</sup>	Level <sup>b</sup>
Initiation of oral anticoagulation is recommended at least 3 weeks prior to catheter-based ablation in AF patients at elevated thromboembolic risk, to prevent peri-procedural ischaemic stroke and thromboembolism. <sup>554,647</sup>	I	C
Uninterrupted oral anticoagulation is recommended in patients undergoing AF catheter ablation to prevent peri-procedural ischaemic stroke and thromboembolism. <sup>664,665</sup>	I	A

# La phase pré procédurale (2)

Procedural management and techniques	Category of advice	Type of evidence
Ultrasound guidance is beneficial for vascular access during AF catheter ablation to reduce the risk of vascular complications	Advice TO DO	OBS <sup>674–680</sup>
Heparin should be administered during AF catheter ablation and adjusted to achieve and maintain an ACT of at least 300 s	Advice TO DO	OBS <sup>681–685</sup>
Administration of initial heparin bolus before transseptal puncture is reasonable, especially when performed under echocardiographic guidance	May be appropriate TO DO	OBS <sup>686–688</sup>
Use of an esophageal temperature probe may be reasonable during thermal AF ablation procedures to monitor esophageal temperature and help guide energy delivery	Area of uncertainty	RAND <sup>689–694</sup>





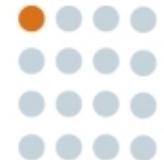
# La méthode d'ablation



Louis David: *La Mort de Socrate*  
1787

« Tout ce que  
Je sais c'est  
que je ne sais  
rien... »

Ablation strategies	Category of advice	Type of evidence
<b>Pulmonary vein isolation</b>		
Electrical isolation of the PVs is required during all AF ablation procedures	Advice TO DO	META <sup>236,238,241,243-245, 247,248,253,294,304,566,622,788</sup>
Achievement of electrical isolation requires, at a minimum, assessment and demonstration of entrance block into the PVs	Advice TO DO	META <sup>236,238,241,243-245,247,248,253,294,304,566,622,788-792</sup>
A waiting period (e.g. 20 min) following initial PVI may be reasonable to monitor for PV reconnection	Area of uncertainty	RAND <sup>793-800</sup>
Administration of adenosine 20 min following initial PVI, with reablation if PV reconnection occurs, may be reasonable to improve PVI durability	Area of uncertainty	RAND <sup>794,796-798,801-807</sup>
Pace capture-guided approach following PVI using RF energy may be reasonable to improve PVI durability	Area of uncertainty	RAND <sup>808-810</sup>
<b>Adjunctive ablation targets beyond pulmonary vein isolation</b>		
If linear ablation lesions are deployed, mapping and pacing maneuvers are required to document conduction block	Advice TO DO	OBS <sup>811-818</sup>
If a reproducible focal trigger that initiates AF is identified outside the PV ostia at the time of an AF ablation procedure, ablation of the focal trigger is beneficial	Advice TO DO	OBS <sup>819-823</sup>
Vein of Marshal ethanol infusion is reasonable to facilitate achieving block in the lateral mitral isthmus in patients with mitral annular flutter	May be appropriate TO DO	OBS <sup>196,824-826</sup>
Ablation of areas of abnormal myocardial tissue identified with voltage mapping during sinus rhythm may be reasonable during persistent AF ablation	Area of uncertainty	META <sup>827-829</sup>
Vein of Marshal ethanol infusion may be reasonable during persistent AF ablation	Area of uncertainty	RAND <sup>830-834</sup>
Mapping and ablation of non-PV triggers may be reasonable during persistent AF ablation	Area of uncertainty	OBS <sup>819-823,835</sup>
Isolation of the left atrial posterior wall may be reasonable during repeat ablation of persistent AF	Area of uncertainty	META <sup>836-847</sup>
Ablation of MRI-detected atrial delayed enhancement areas is not beneficial during persistent AF ablation <sup>a</sup>	Advice NOT TO DO	META <sup>848,849</sup>



# Période post procédure

Postprocedural management	Category of advice	Type of evidence
Systemic anticoagulation is beneficial for <u>at least 2 months following catheter ablation of AF</u>	Advice TO DO	OPN
Postprocedural initiation of DOACs rather than VKAs is beneficial in patients not previously on anticoagulation undergoing AF ablation	Advice TO DO	META <sup>1009-101</sup>
Adherence to AF anticoagulation guidelines is beneficial for patients who have undergone an AF ablation procedure, regardless of the apparent success or failure of the procedure	Advice TO DO	OPN
<u>Administration of antiarrhythmic drugs following AF catheter ablation</u> is reasonable in selected patients to prevent early postablation AF recurrence.	May be appropriate TO DO	META <sup>1014-102</sup>
In patients who have not been anticoagulated prior to AF catheter ablation or with interrupted anticoagulation prior to ablation, administration of a DOAC 3–5 h after achievement of hemostasis is reasonable	May be appropriate TO DO	OPN
<u>A same-day discharge protocol is reasonable in selected patients undergoing AF ablation</u>	May be appropriate TO DO	OBS <sup>1022-1030</sup>
Administration of proton pump inhibitors for 2–4 weeks following catheter ablation may be reasonable to reduce the risk of esophageal lesions	Area of uncertainty	OBS <sup>1031-1033</sup>
Discontinuation of anticoagulation may be reasonable 12 months following catheter ablation after shared decision-making in patients with CHA <sub>2</sub> DS <sub>2</sub> -VASc score 1 in males and 2 in females in the absence of clinical symptoms or documented AF recurrence when patients and their physician are committed to long-term rhythm monitoring <sup>a</sup>	Area of uncertainty	OPN
Patients in whom discontinuation of anticoagulation is being considered based on patient values and preferences should undergo continuous or frequent ECG monitoring to screen for AF recurrence	Area of uncertainty	OPN

- « Blanking period » de 8 semaines
- Pas de réablation dans les 3 mois privilégier AA ou Cardioversion



- **FA paroxystique: Prise en charge ablativ** pouvant être proposée en première intention
- **FA persistante:** IIB en première intention, I après le traitement médical.
- **Ablation de la FA: déconnection antrale des VP:** toujours la pierre angulaire de la technique ablativ, jusqu'à quand...
- Une place encore pour l'**ablation hybride médicochirurgicale**



**Merci de votre attention**

