









Diagnostic et thérapie médicamenteuse de la fibrillation auriculaire

PD Dr. Patrick Badertscher

Formation professionnelle en cardiologie, Delémont, 1^o février

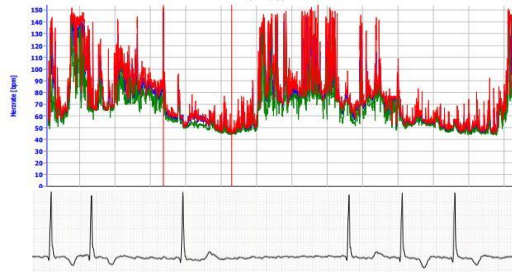
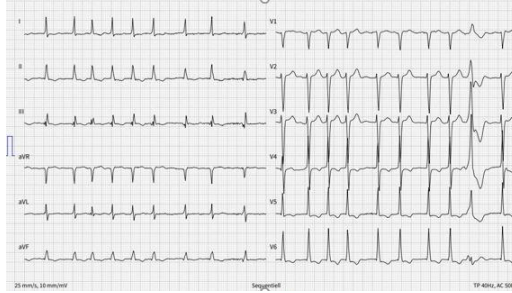


Consequences de la FA

| AF-Related Outcome | Frequency in AF | Mechanism(s) |
|--|--|--|
| Death  | 1.5 - 3.5 fold increase | Excess mortality related to: <ul style="list-style-type: none"> • HF, comorbidities • Stroke |
| Stroke  | 20-30% of all ischaemic strokes, 10% of cryptogenic strokes | <ul style="list-style-type: none"> • Cardioembolic, or • Related to comorbid vascular atheroma |
| LV dysfunction / Heart failure  | In 20-30% of AF patients  | <ul style="list-style-type: none"> • Excessive ventricular rate • Irregular ventricular contractions • A primary underlying cause of AF |
| Cognitive decline / Vascular dementia  | HR 1.4 / 1.6 (irrespective of stroke history)  | <ul style="list-style-type: none"> • Brain white matter lesions, inflammation, • Hypoperfusion, • Micro-embolism |

Diagnostic

- 12-lead ECG
- Holter (>30s)
- **Nouveau:** single-lead ECG (>30s)



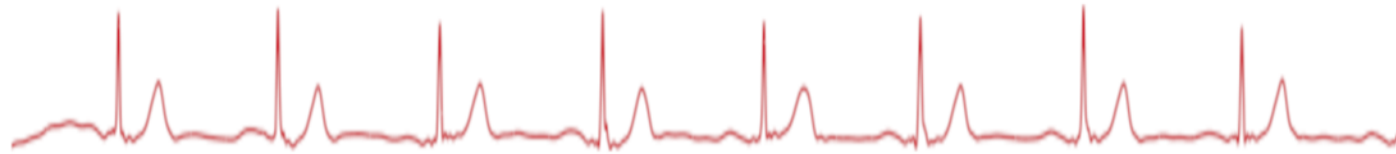
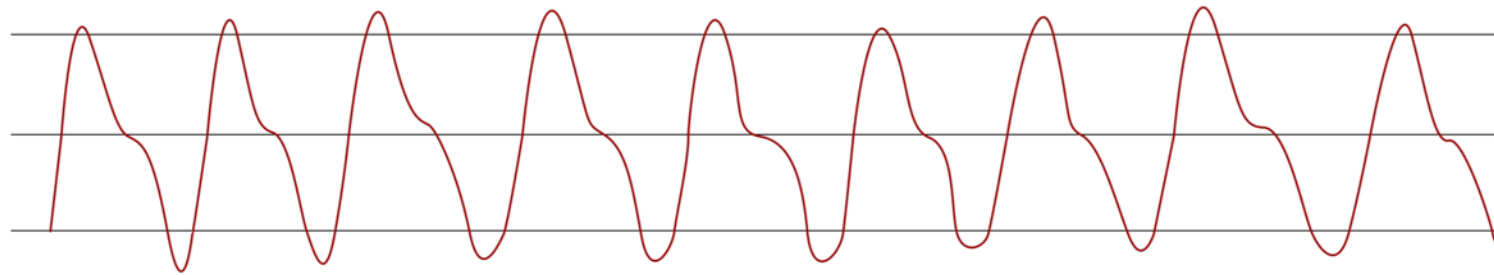
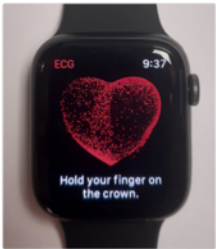
Recommendations for diagnosis of AF

ECG documentation is required to establish the diagnosis of AF.

A standard 12-lead ECG recording or a **single-lead ECG tracing of ≥ 30 s** showing heart rhythm with no discernible repeating P waves and irregular RR intervals (when atrioventricular conduction is not impaired) is diagnostic of clinical AF.

I

Diagnostic de la fibrillation auriculaire à l'aide d'appareils portables «wearables»



Diagnostic de la fibrillation auriculaire



Comparaison des études PPG

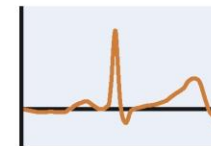
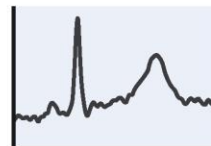
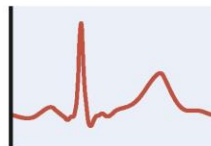


Apple Heart Study



| | Apple | Fitbit | Huawei |
|-------------------------|-------|--------|--------|
| Age | 41 | 47 | 54 |
| Enrollment | 419k | 456k | 188k |
| Women | 42% | 71% | 13% |
| % with Notification | 0.57% | 1.0% | 0.23% |
| PPV for simultaneous AF | 84% | 98% | 92% |
| % study visit | 44% | 35% | |
| % survey | 70% | 51% | |

CENTRAL ILLUSTRATION: 5 Compared Devices



| Manufacturer | Apple | Samsung | Withings | Fitbit | AliveCor |
|--|--------------------|--------------------|---------------------|---------------------|--------------------------|
| Version | Watch 6 | Galaxy Watch3 | ScanWatch | Sense | Kardia Mobile |
| Sensitivity (95% CI) | 85% (72%-94%) | 85% (72%-94%) | 58% (42%-72%) | 66% (51%-79%) | 79% (64%-89%) |
| Specificity (95% CI) | 75% (67%-83%) | 75% (66%-82%) | 75% (67%-83%) | 79% (70%-86%) | 69% (60%-77%) |
| Inconclusive tracings | 18% | 17% | 24% | 21% | 26% |
| Preferred Choice ^{*a} | 39% | 12% | 24% | 15% | 5% |
| Limit of HR interpretation ^{*b} | 50-150 beats/min | 50-120 beats/min | No information | 50-120 beats/min | 50-100 beats/min |
| Battery capacity ^{*c} | 18 h ^{*d} | 45 h ^{*d} | 720 h ^{*d} | 144 h ^{*d} | 90 h / 2 y ^{*e} |
| Price ^{*d} | 449 | 265 | 303 | 244 | 147 |

^{*a}: Out of 165 analyzed patients, 10 patients were not able to decide between the available devices

^{*b}: Information obtained from manufacturers website, 11/21

^{*c}: Time with GPS disabled

^{*d}: Information obtained on digitec.ch on 12.11.21, no discounts / special offers were included in the price, price includes tax / all prices in CHF

^{*e}: 90 h net operating time, under regular use up to 2 years



Klinik für Kardiologie
Universitätsspital Basel



Ihre Experten für
Herzrhythmusstörungen

Senden Sie uns Ihr EKG

[EKG Upload](#) [Häufige Fragen](#) [Glossar](#) [Meine Daten](#) [Abmelden](#)

www.wearableclinic.ch

BASEL WEARABLE CLINIC

Ihr digitales Zentrum für Herzrhythmusstörungen

So funktioniert die Basel Wearable Clinic:



1. EKG Upload

Sie leiden unter Herzstolpern, Palpitationen oder einem unregelmässigen Puls und besitzen eine Smartwatch, welche Ihnen erlaubt ein 1-Kanal-EKG zu schreiben? Wir sind für Sie da. Lassen Sie uns Ihr EKG zukommen.



2. Wer sind wir?

Das Team der Elektrophysiologie des Universitätsspital Basel besteht aus führende Experten im Bereich von Herzrhythmusstörungen. Unser Ziel ist es Patienten innerhalb weniger Stunde zu einer Diagnose und Therapie zu verhelfen.



3. Wie behandeln wir sie?

Nach Zusendung des EKGs erhalten sie einen schriftlichen Befund mit einer fachärztlichen Interpretation des EKGs und einer Empfehlung für das weitere Prozedere

Senden Sie uns Ihr EKG

[Anmelden](#) →

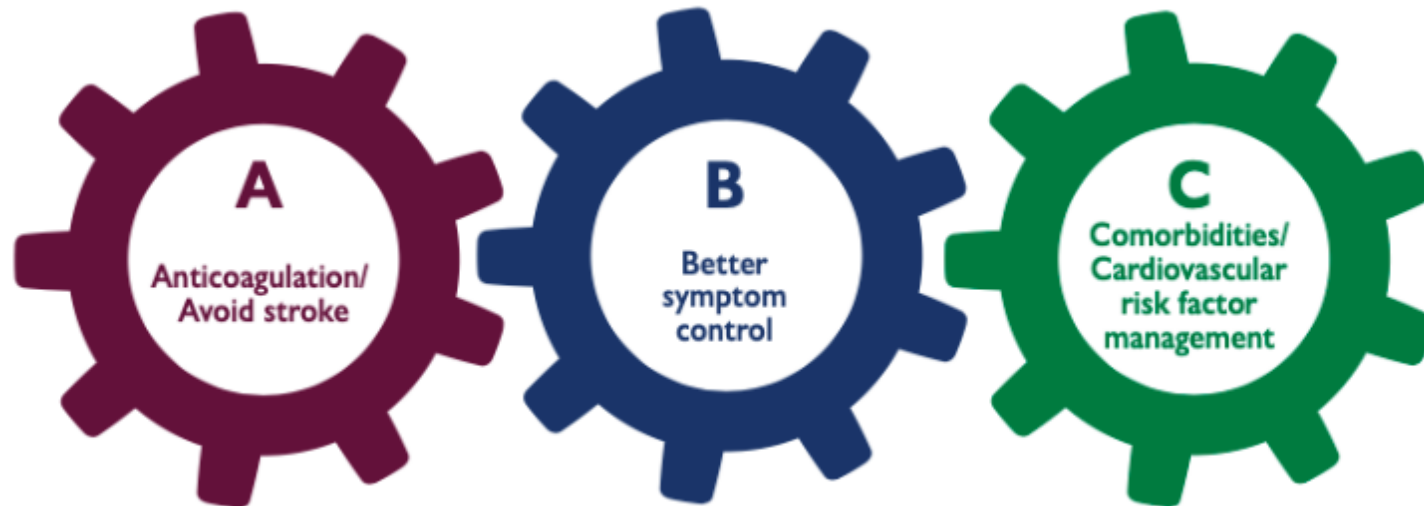
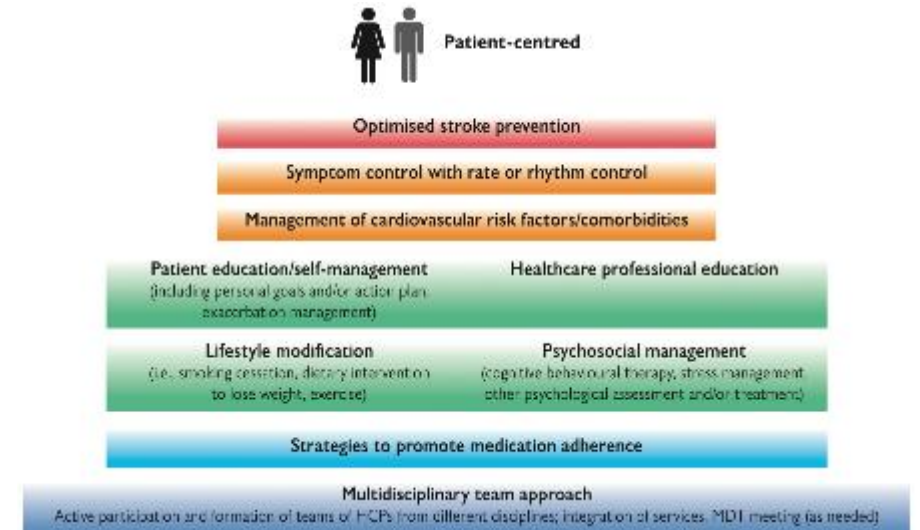
Approche holistique de la prise en charge de la FA

The ABC pathway:

A – Avoid stroke

B – Better symptom control

C – Comorbidity management



A - Prévention des accidents vasculaires cérébraux

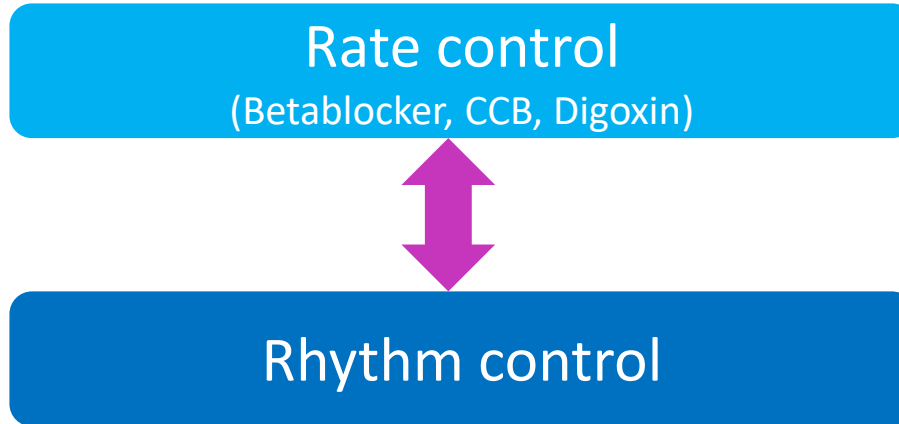


Risk stratification using the CHA₂DS₂VASc score

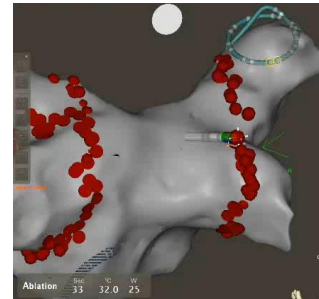
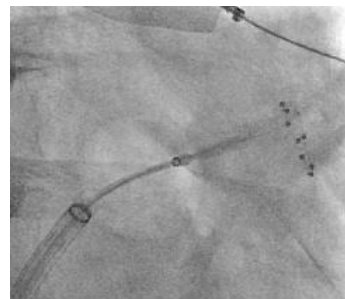
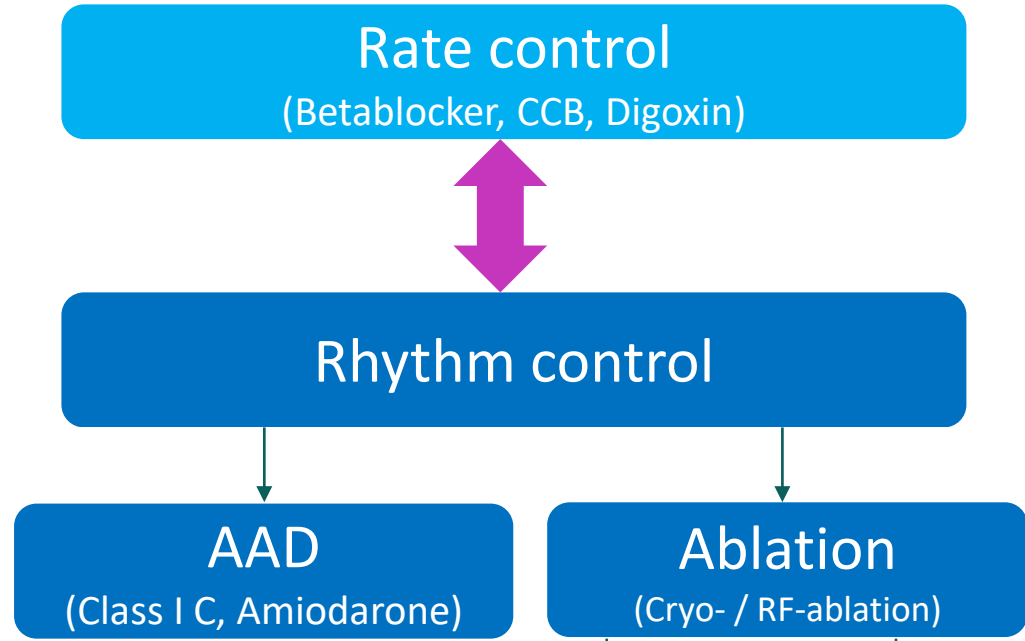
CHA₂DS₂VASc
=1 (female) oder =0 (male)

No OAC

B– Meilleur contrôle des symptômes



B– Meilleur contrôle des symptômes



Taux de succès:
Durée:

60-90 %
60-90 minutes

| Recommendations | Class ^a | Level ^b |
|---|--------------------|--------------------|
| Rhythm control therapy is recommended for symptom and QoL improvement in symptomatic patients with AF. ^{551–553} | I | A |



NEW: EAST trial

Early rhythm control

20% Reduction of prim. endpoint

- ✓ Stroke
- ✓ CV death
- ✓ Hospitalization (CHF/MI)

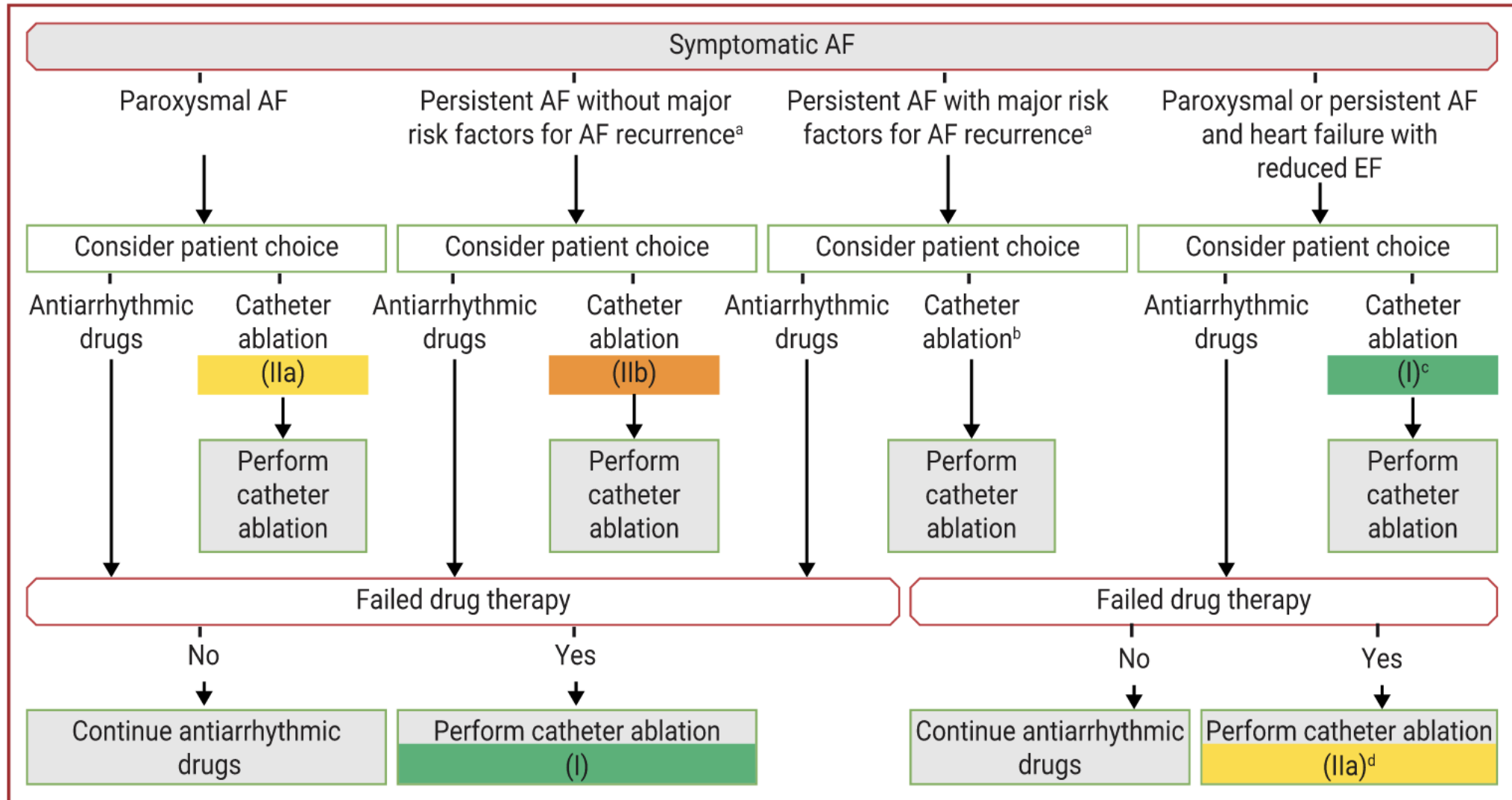
Kirchhof P et al. N Engl J Med 2020

Les recommandations de la Société Européenne de Cardiologie (ESC) disent

| Recommendations | Class ^a | Level ^b |
|--|--------------------|--------------------|
| Rhythm control therapy is recommended for symptom and QoL improvement in symptomatic patients with AF. 551 – 553 | I | A |

Mais comment?

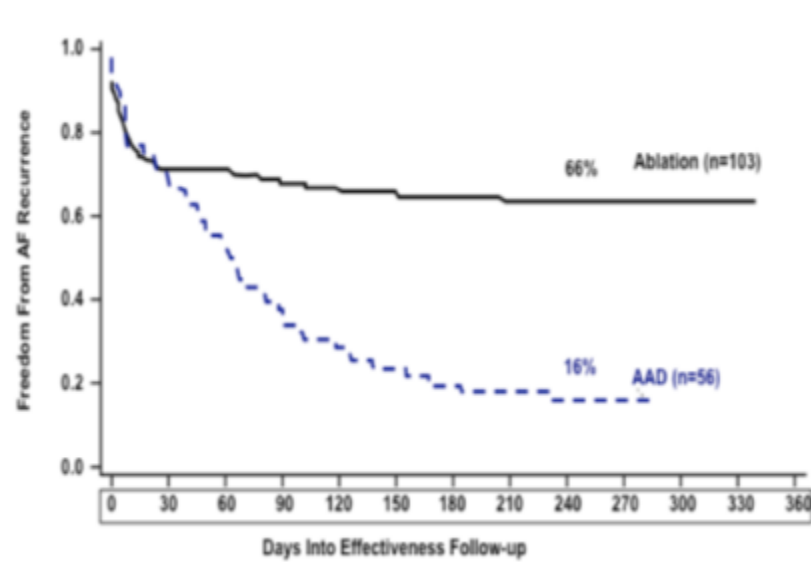
Guidez-moi, s'il vous plaît!



Ablation ou médicaments antiarythmiques

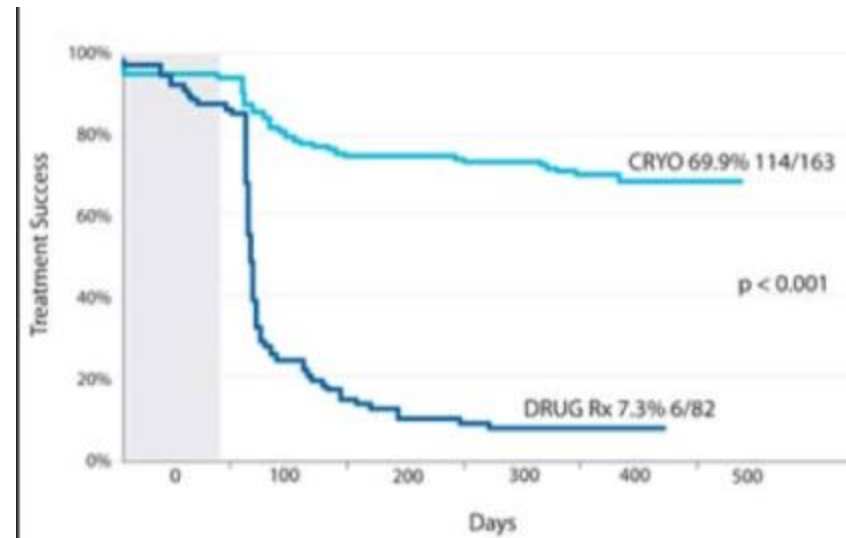
Thermocool AF

- Radiofrequency

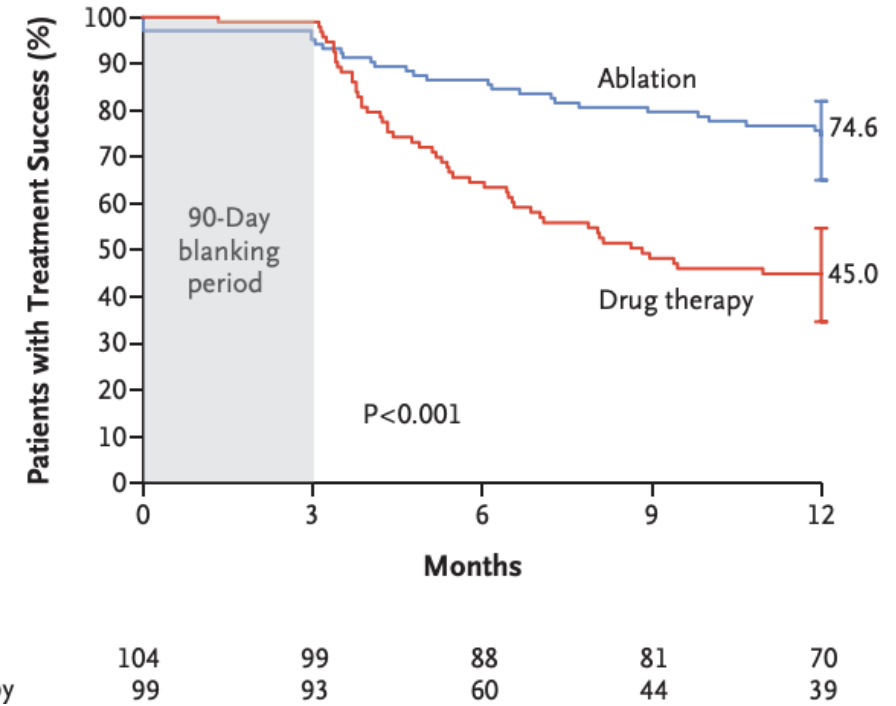
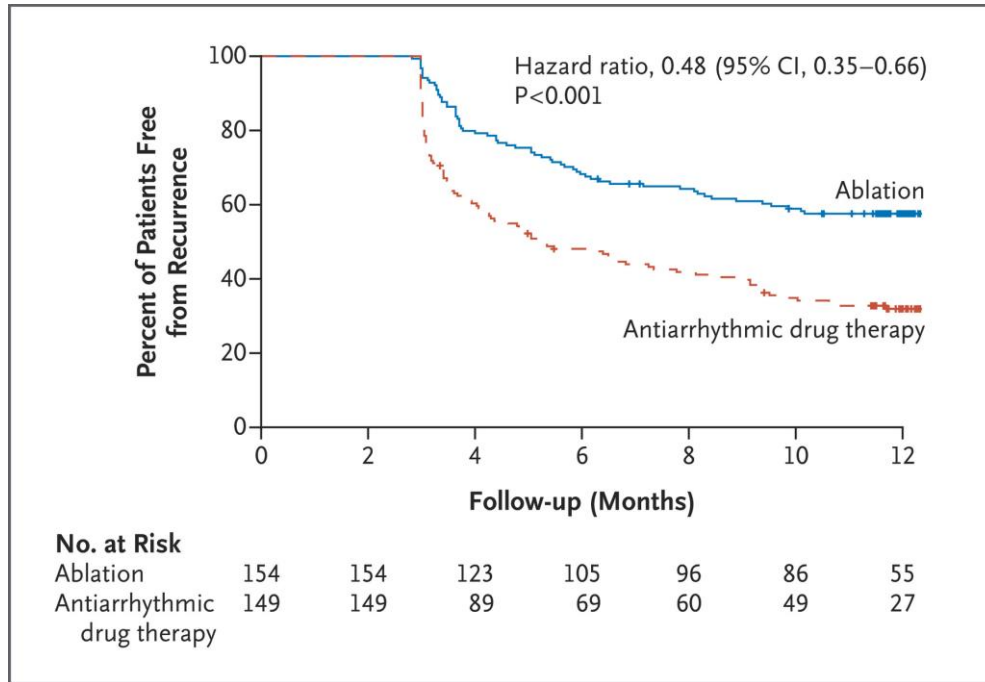


STOP AF

- Cryoballoon



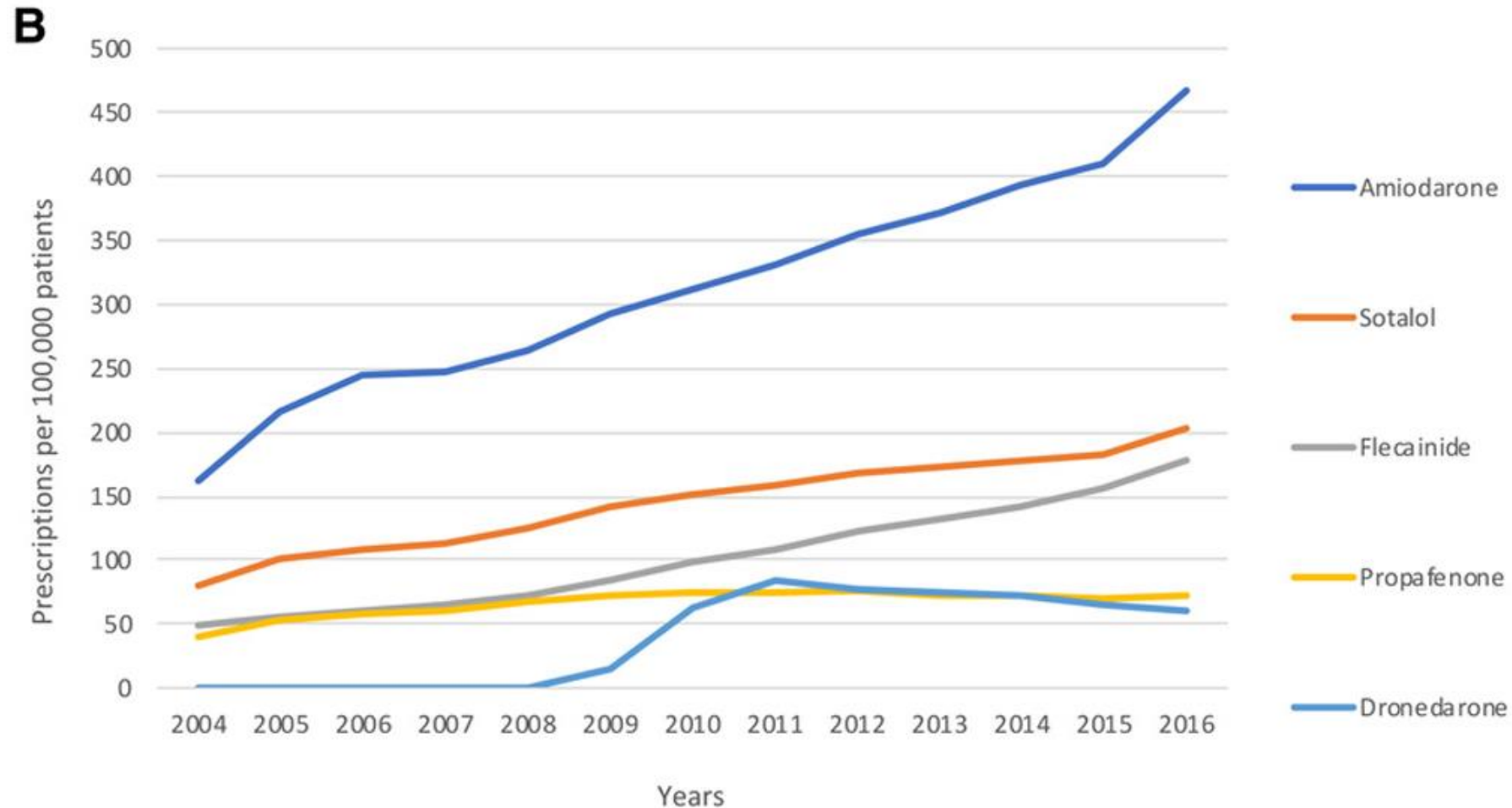
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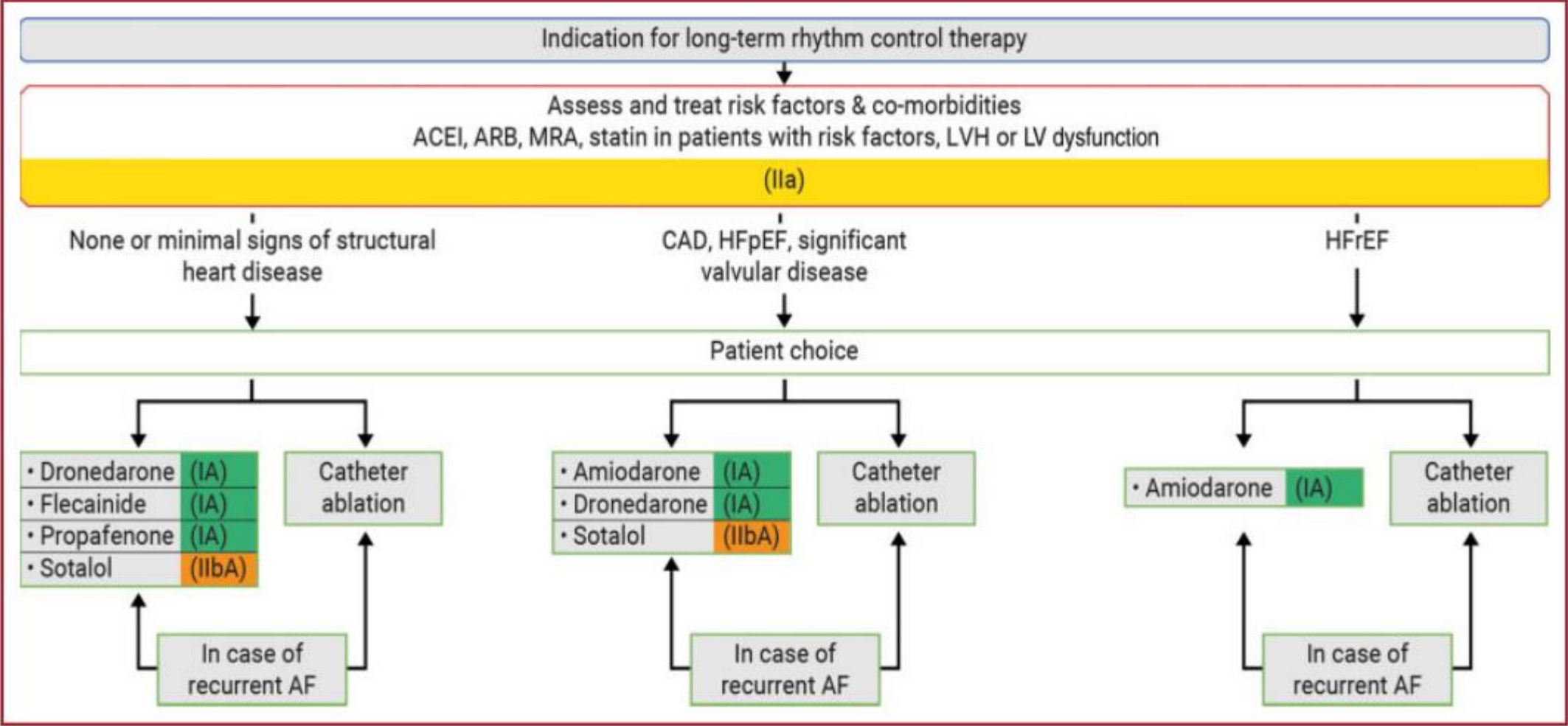
Tendances de l'utilisation des médicaments antiarythmiques



■ Assurance maladie demandes: Multiplication par 4 entre 2004 et 2016



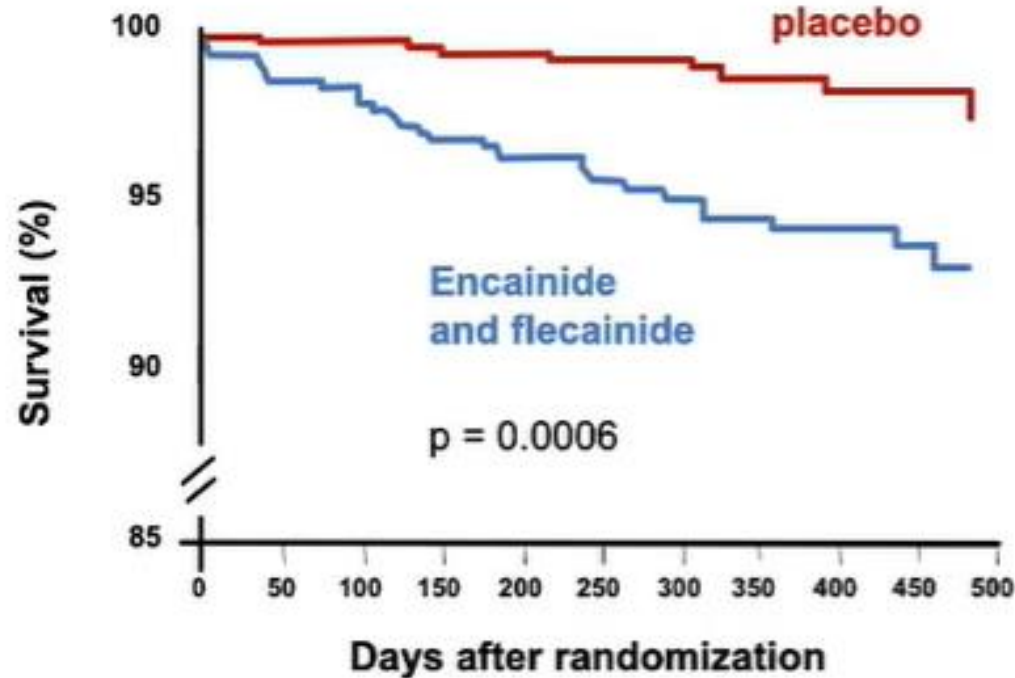
Pharmacothérapie pour le contrôle du rythme



Pro-arrythmie avec les AAD de classe IC

- IC augmentent la mortalité due à l'arythmie chez les patients souffrant de cardiopathie ischémique

CAST=Cardiac Arrhythmia Suppression Trial

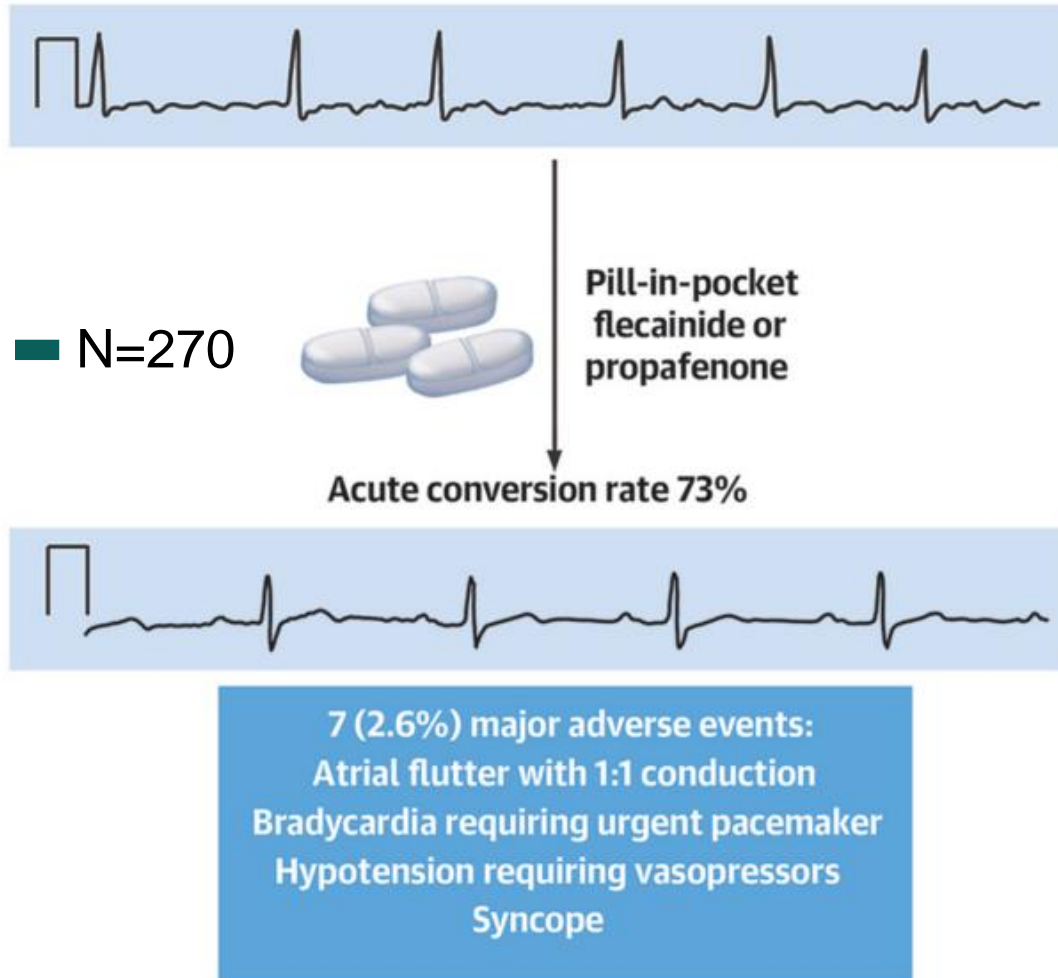


CAST Investigators. *N Engl J Med* 1989; 321: 406-12



- Peut augmenter la longueur du cycle AFL, conduction AV 1:1, combinaison avec BB

Première pilule de poche?



Basel Approach

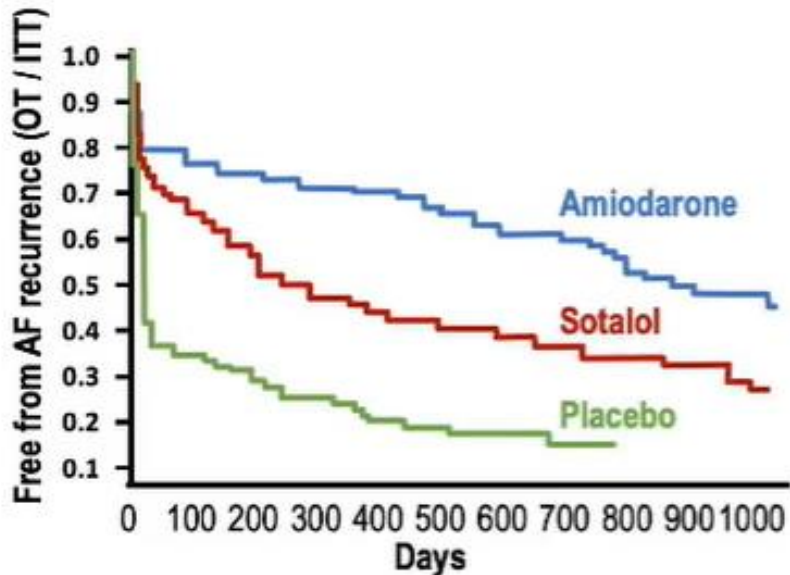
- Tambocor 50mg 1-0-1 for 7 days
- Stress ECG
- Pill in the pocket 100mg. 2x.

Efficacité des AAD de classe III

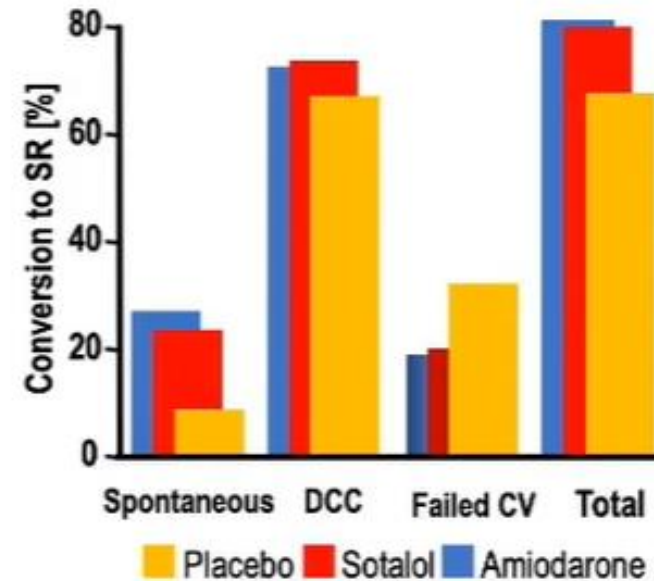
SAFE-T *Sotalol Amiodarone AF Efficacy Trial*



- VA Cooperative Study,
- N=665, 20% AF >1 year:
- Amio 267, Sot 261, Placebo 137



- Follow-up 1 year with TTM,
- 1° EP: time to 1st AF recurrence after C'



Singh BN et al. NEJM. 2005;352:1861-1872.



Réactions indésirables aux AAD

| Reaction | Incidence, % | Diagnosis |
|------------------------|--------------|---|
| Pulmonary | 2 | Cough or dyspnea (or both), especially with focal or diffuse opacities on high-resolution CT scan and decrease in D_LCO from baseline |
| Gastrointestinal tract | 30 | Nausea, anorexia and constipation |
| | 15-30 | AST or ALT level $>2\times$ normal |
| | <3 | Hepatitis and cirrhosis |
| Thyroid | 4-22 | Hypothyroidism |
| | 2-12 | Hyperthyroidism |
| Skin | <10 | Blue discoloration |
| | 25-75 | Photosensitivity |
| Central nervous system | 3-30 | Ataxia, paresthesias, peripheral polyneuropathy, sleep disturbance, impaired memory and tremor |
| Ocular | <5 | Halo vision, especially at night |
| | ≤ 1 | Optic neuropathy |
| | >90 | Photophobia, visual blurring, and microdeposits |
| Heart | 5 | Bradycardia and AV block |
| | <1 | Ventricular proarrhythmia |
| Genitourinary | <1 | Epididymitis and erectile dysfunction |

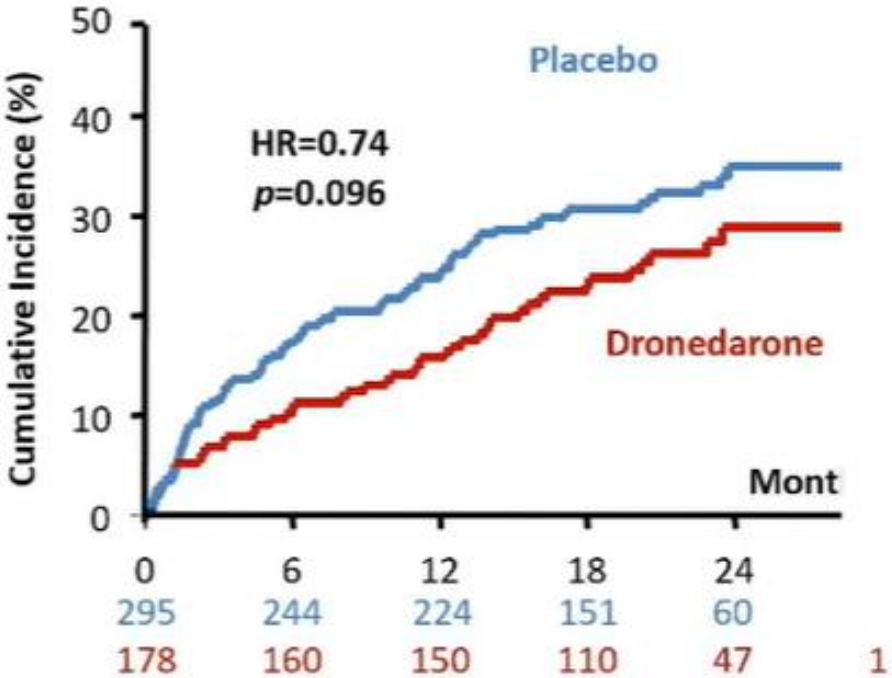
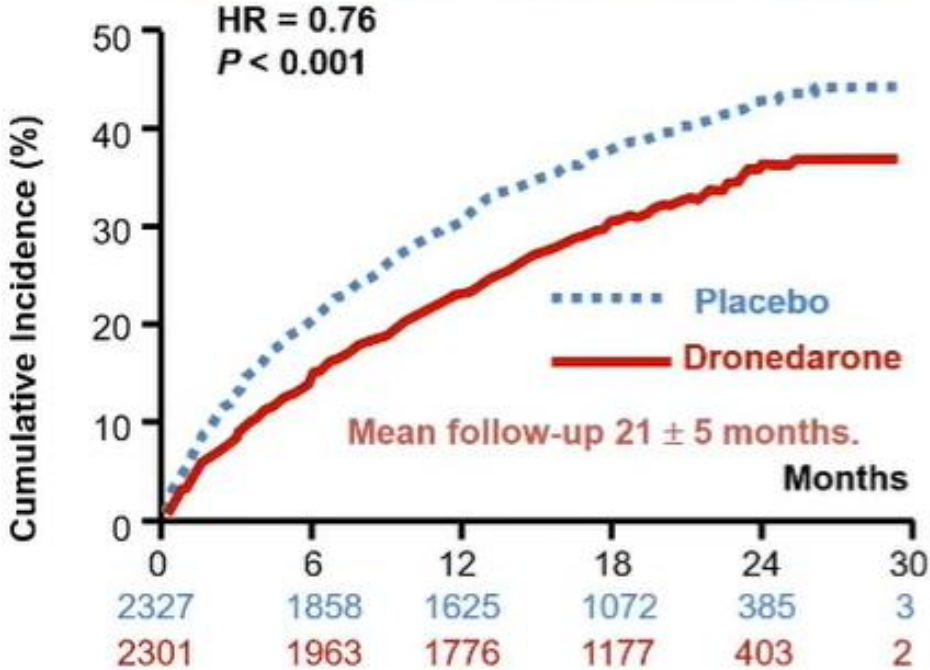


Dronédarone: pas d'iode, un médicament parfait pour la FA?

ATHENA: 1^o Outcome

"Permanent" AF
 PALLAS Study

Cardiovascular Hospitalization or Death



Hohnloser SH et al. ATHENA Investigators N Engl J Med. 2009 ;360:668-78.

Dronédarone: pas d'iode, un médicament parfait pour la FA?



PALLAS

Permanent Atrial fibrillation outcome Study

Permanent AF ≥ 6m
 + CV risk
 No NYHA unstable III
 or IV NYHA CHF

Screen



2 years, recruitment; 12 m min FU common end-date

10,800 patients; 844 events

90% power for 20% RRR and 2 sided alpha of 5%

DRONEDARONE

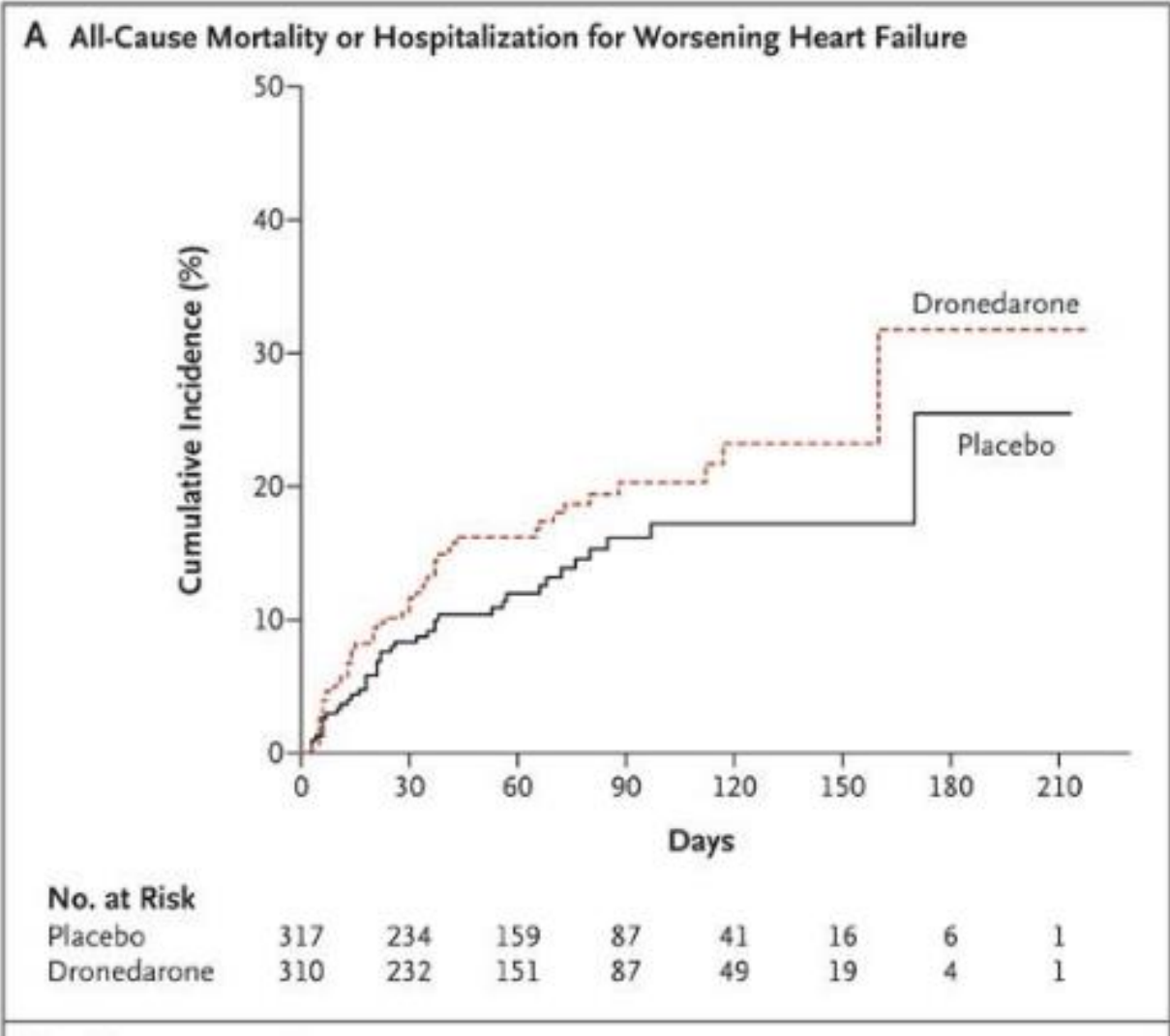
PLACEBO

| 1 ^o Outcomes | Dronedarone (n = 1619) | | Placebo (n = 1617) | | Dronedarone vs Placebo | | |
|---|---------------------------|------|-----------------------|------|------------------------|-----------|---------|
| | Events | %/yr | Events | %/yr | HR | 95% CI | P value |
| 1st Co-primary (Stroke/MI/SEE/CV Death) | 43 | 8.2 | 19 | 3.6 | 2.29 | 1.34-3.94 | 0.002 |
| 2nd Co-primary (All Death/Unplanned CVHospitalization) | 127 | 25.3 | 67 | 12.9 | 1.95 | 1.45-2.62 | <0.001 |

Connolly S. et al. N Engl J Med. 2011 Nov 14.



Dronédarone: pas d'iode, un médicament parfait pour la FA?



Kober L et al., NEJM 2008

Vue d'ensemble

| Amiodarone | Flecainide | Dronedarone | Sotalol |
|---|---|--|--|
| Le DAA le plus efficace | Efficace dans la prévention de la FA | Moins efficace que l'Amio, moins d'effets secondaires | Uniquement des effets de classe III à une dose >160 mg |
| Surveillance de la toxicité hépatique, pulmonaire et thyroïdienne | Contre-indiqué en cas de maladie coronarienne et de réduction de la FEVG | Augmentation de la mortalité en cas d'insuffisance cardiaque et de fibrillation auriculaire permanente | Pas en cas d'HFrEF, LVH, QT prolongé, Asthme, ClCr < 30 mL/min |
| L'allongement de l'intervalle QT est fréquent, rarement associé à des torsades de pointes | Abandonné chez les patients présentant un élargissement du QRS de 25 % ou un QRS > 120 ms | Utilisation concomitante avec le dabigatran contre-indiquée | Allongement de l'intervalle QTc |
| QT > 500 ms | AFL 1:1 | Peut augmenter la concentration sérique de digoxine | |

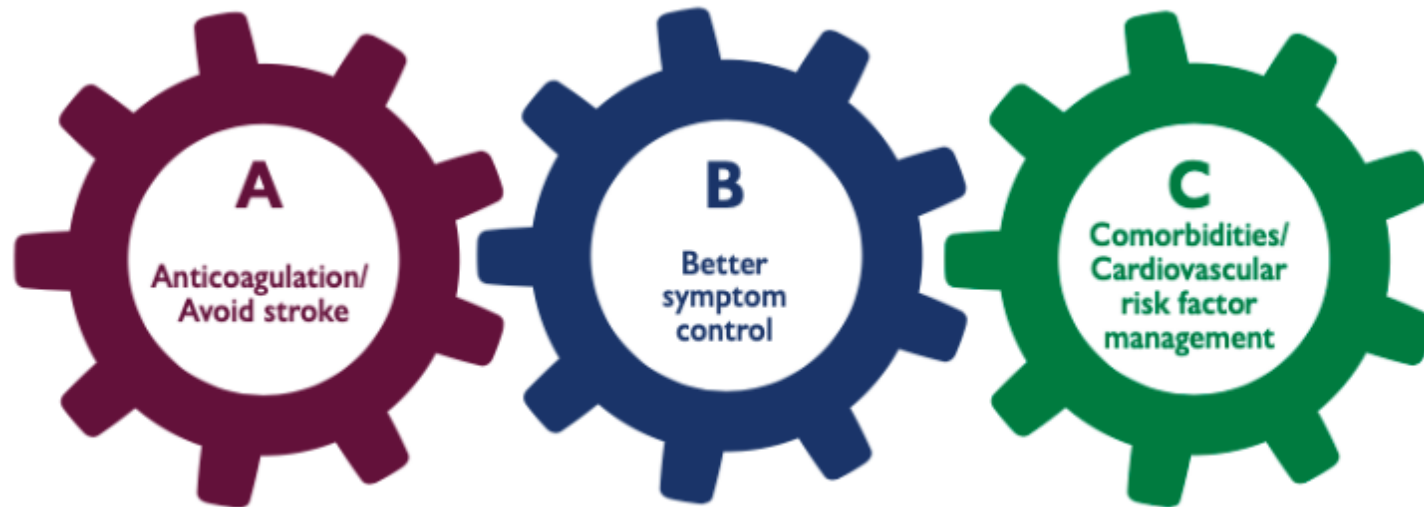
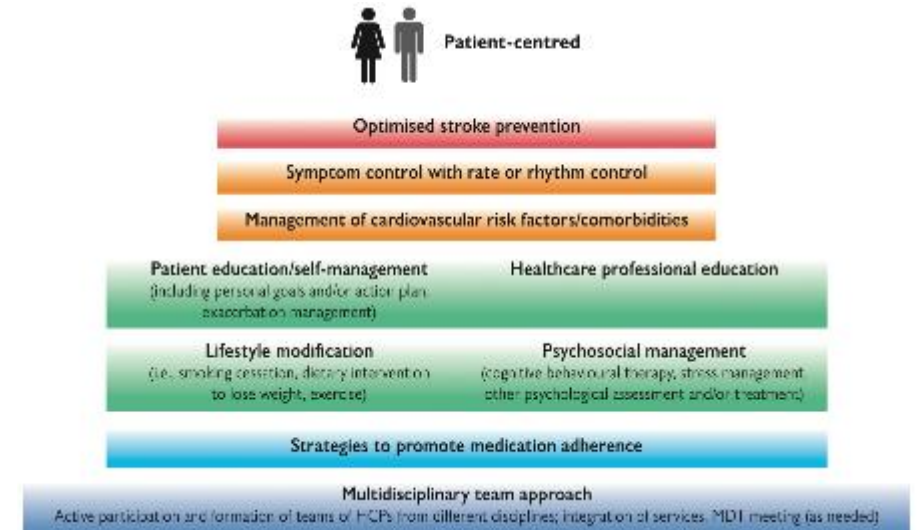
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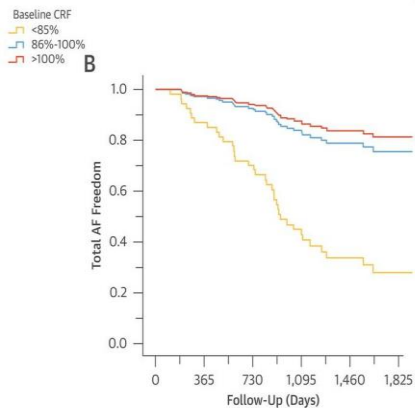




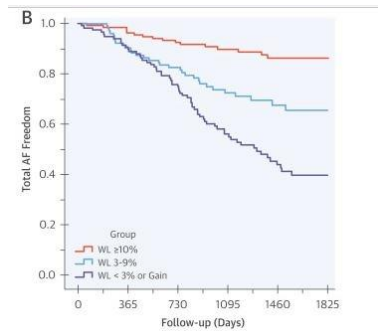
C - Comorbidités "La fibrillation auriculaire n'arrive presque jamais seule".

| | | |
|---|----------|----------|
| <p>Identification and management of risk factors and concomitant diseases is recommended as an integral part of treatment in AF patients.⁸⁸⁸</p> | I | B |
| <p>Modification of unhealthy lifestyle and targeted therapy of intercurrent conditions is recommended to reduce AF burden and symptom severity.^{245,636,887,889,1016,1052}</p> | I | B |
| <p><i>Lifestyle modification and other strategies to improve outcomes of ablation</i></p> | | |
| <p>Weight loss is recommended in obese patients with AF, particularly those who are being evaluated to undergo AF ablation.</p> | I | |

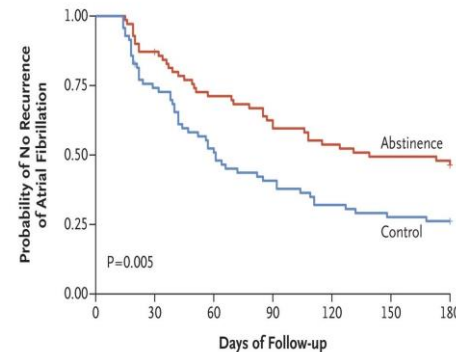
| | | |
|---|------------|----------|
| <p>Advice and management to avoid alcohol excess should be considered for AF prevention and in AF patients considered for OAC therapy.^{324,1012,1014,1016}</p> | IIa | B |
|---|------------|----------|



CARDIO-FIT
Pathak, JACC 2015

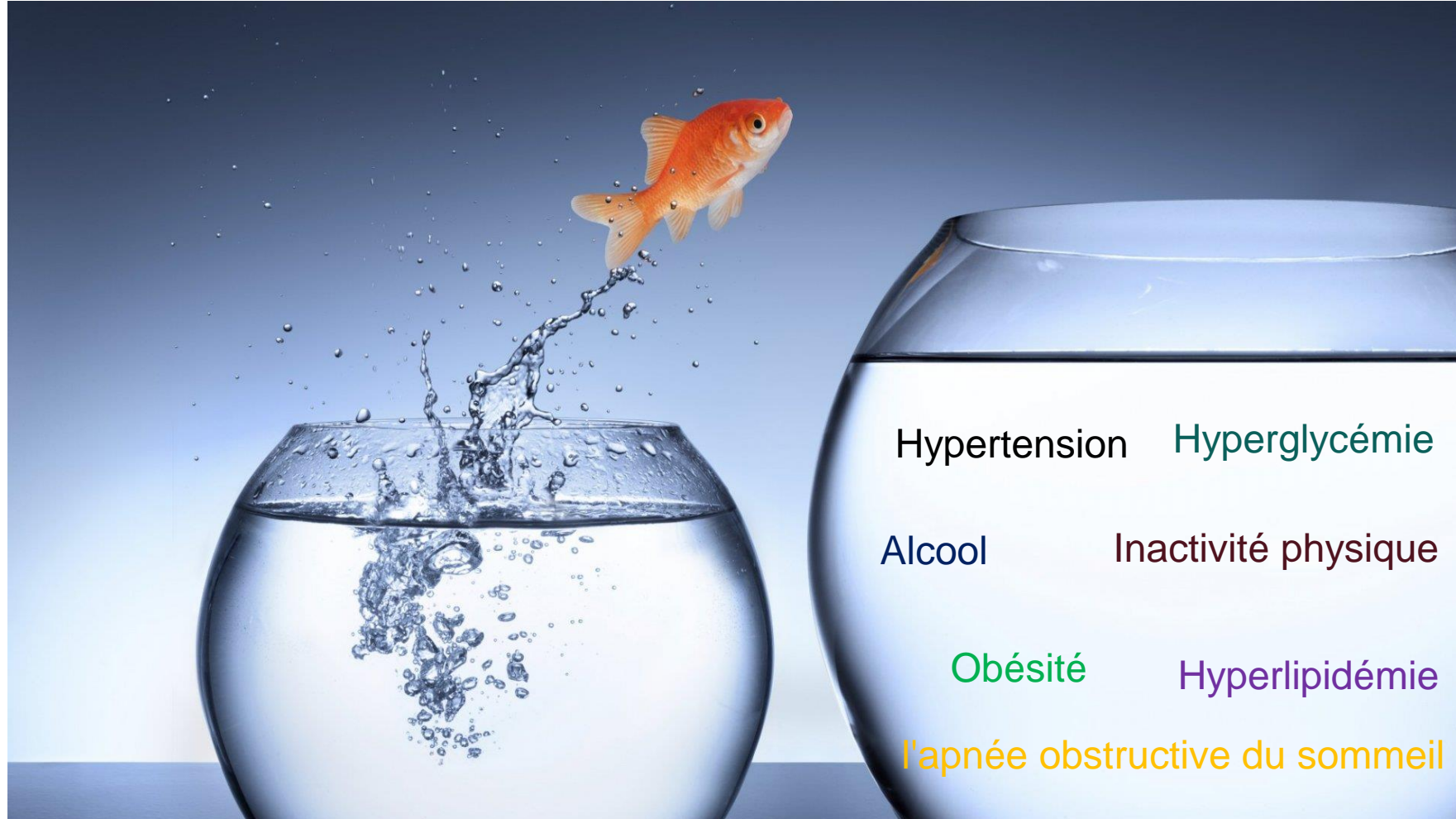


LEGACY
Pathak, JACC 2015



Voskoboinik
N Engl J Med 2020

Écran d'opportunité détecté FA: Adresse RF !!!!



Résumé



OAC

Contrôle du
rythme

Facteurs de
risque



Merci beaucoup pour votre attention.

Patrick.badertscher@usb.ch

