

Insuffisance cardiaque en 2021 : quels sont les points essentiels à retenir des recommandations ?

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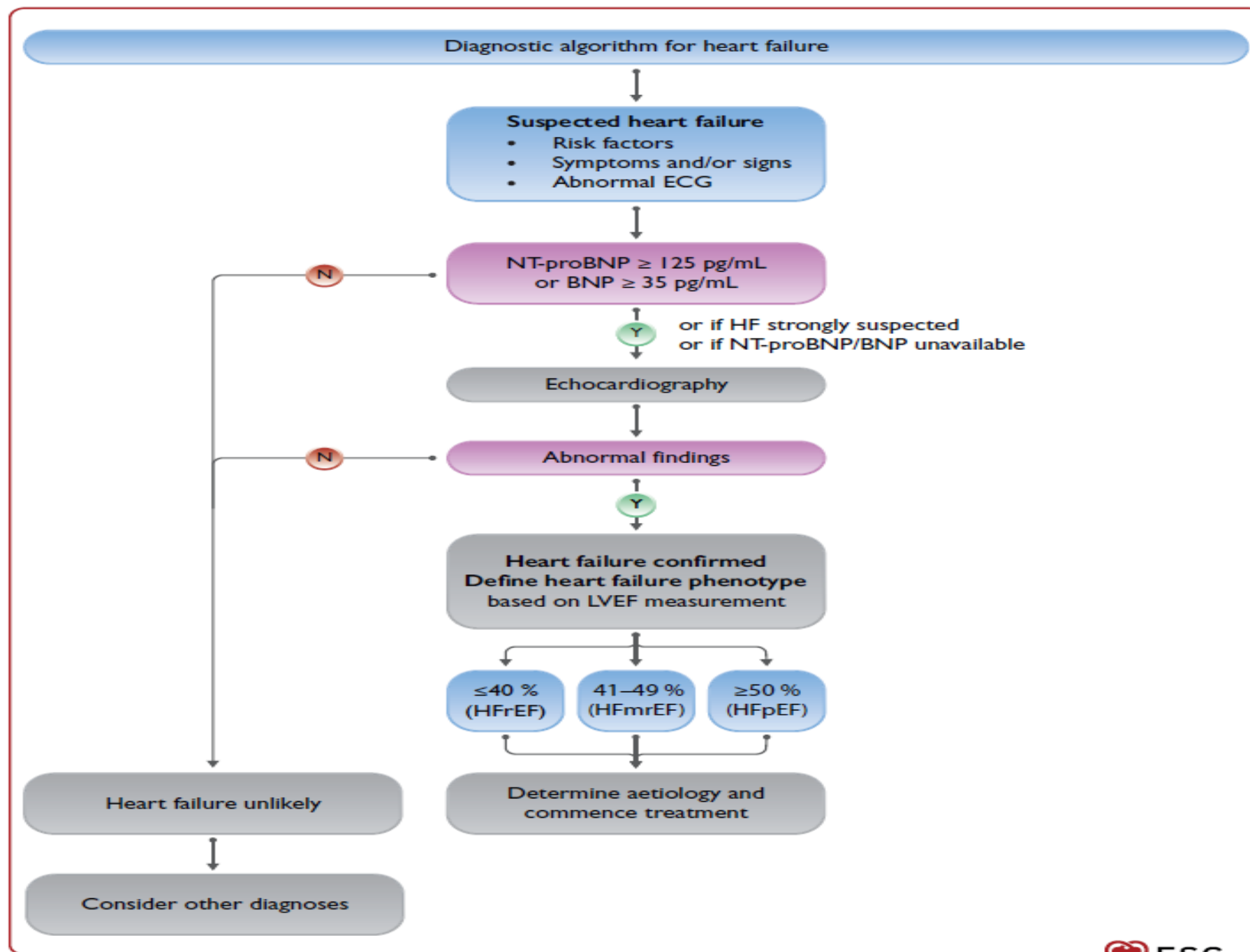
Définition de l'insuffisance cardiaque : une simplification

	IC à FE réduite	IC à FE modérément réduite	IC à FE préservée
Clinique	Présence de symptômes ± signes d'IC ^a		
FE	≤ 40 %	41 – 49 % (54 ?)	≥ 50 % (55 ?)
PN		^b	BNP en RS > 35 pg/mL en FA > 105 NT-proBNP en RS > 125 pg/mL en FA > 365
Echo		^b	Anomalies structurelles HVG, dilatation OG (> 34 mL/m ²) Anomalies fonctionnelles E/e' > 9 PAPS > 35 mmHg

^a Les signes peuvent ne pas être présents aux stades précoces de l'IC et chez les patients traités de manière optimale

^b La présence d'anomalies structurales ou fonctionnelles renforce le diagnostic

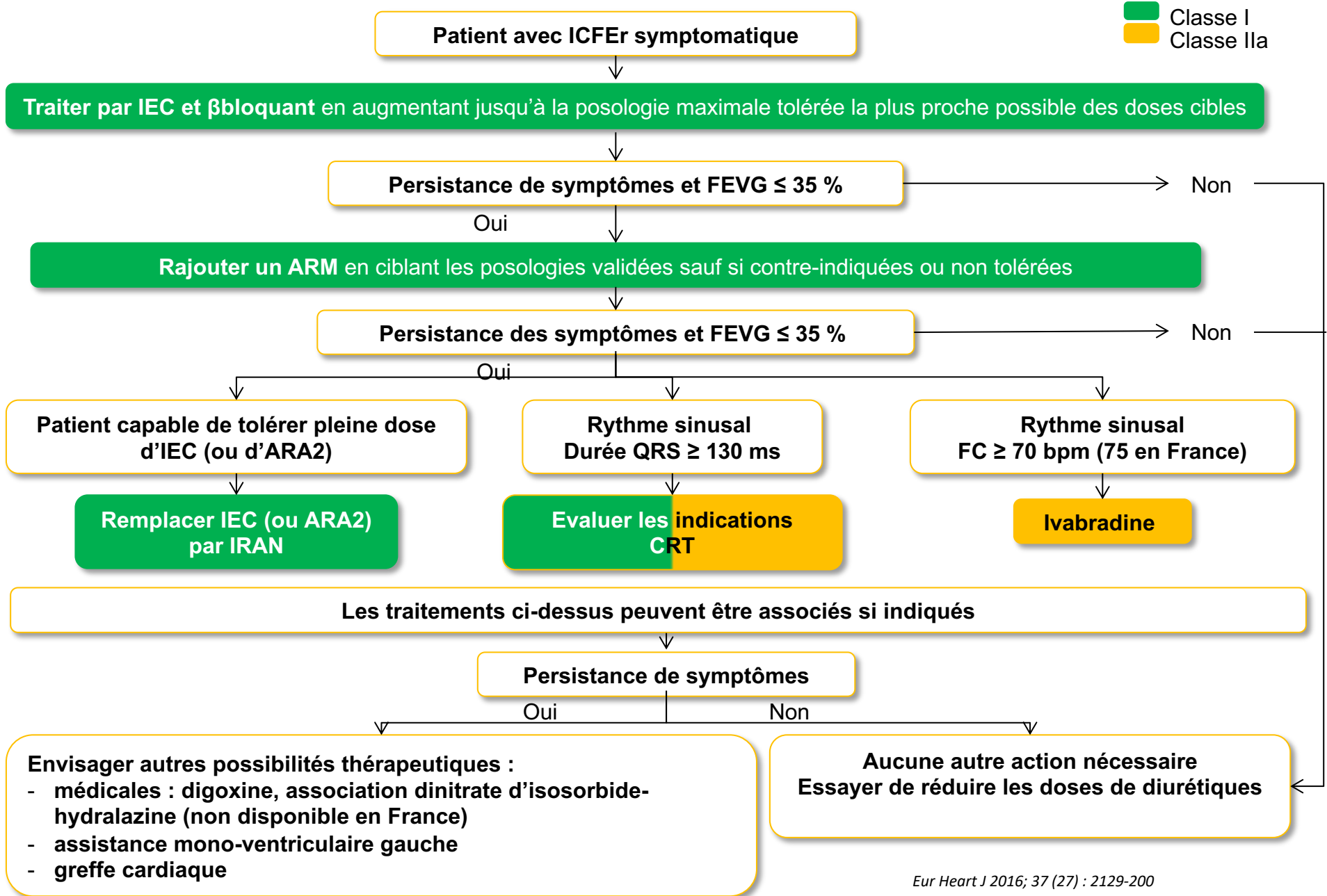
Diagnostic de l'insuffisance cardiaque chronique : une confirmation



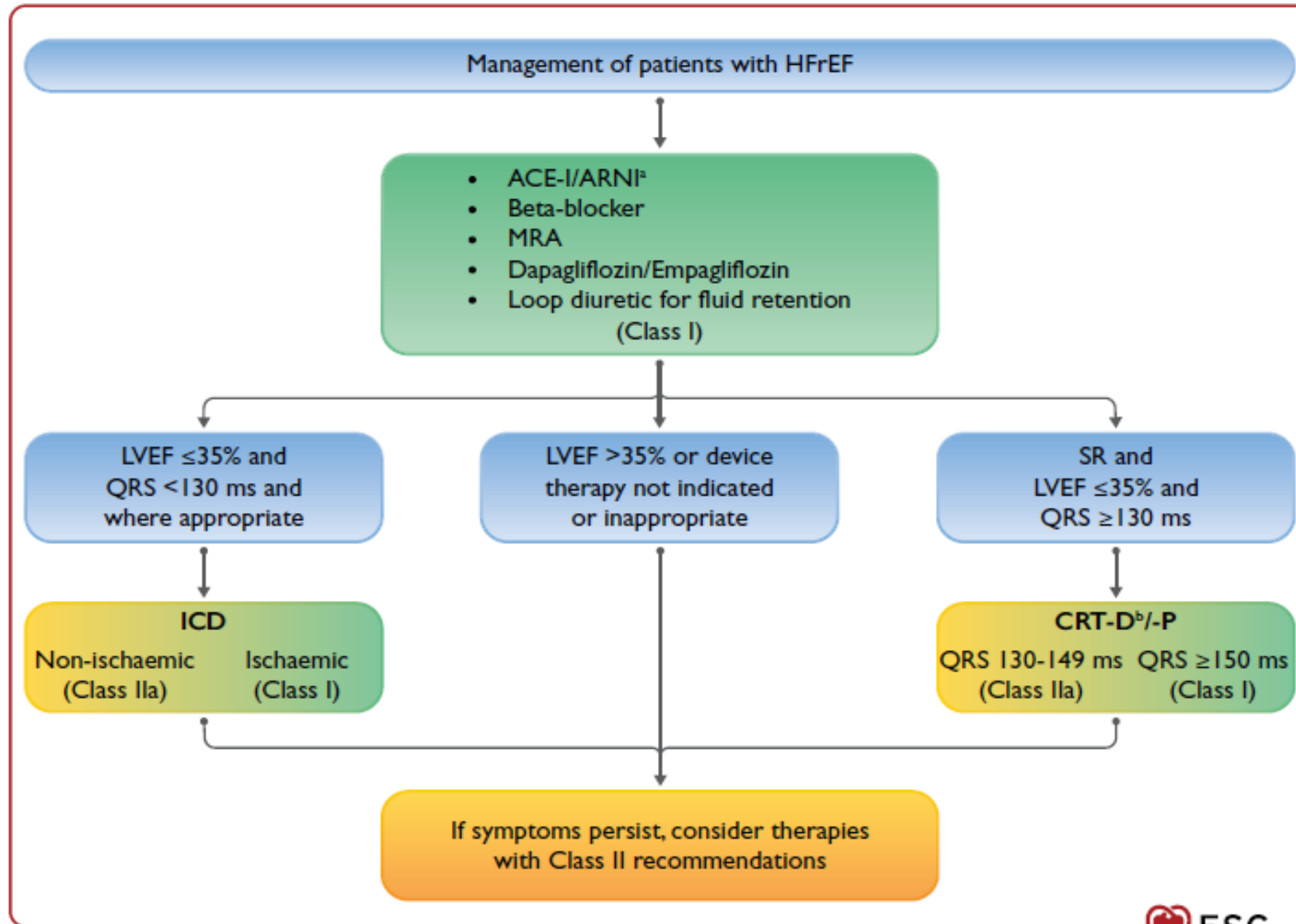
Algorithme de traitement de l'insuffisance cardiaque chronique symptomatique à fraction d'éjection réduite (FE < 40 %) 2016

Diurétiques pour traiter les symptômes et les signes congestifs

Si FEVG ≤ 35 % malgré au moins 3 mois de traitement optimal ou antécédent d'arythmie ventriculaire (TV, FV) symptomatique : implanter DAI



Traitement de l'insuffisance cardiaque à fraction d'éjection réduite : une révolution



Traitement pharmacologique de 1^{ère} intention de l'IC à FE réduite : une révolution

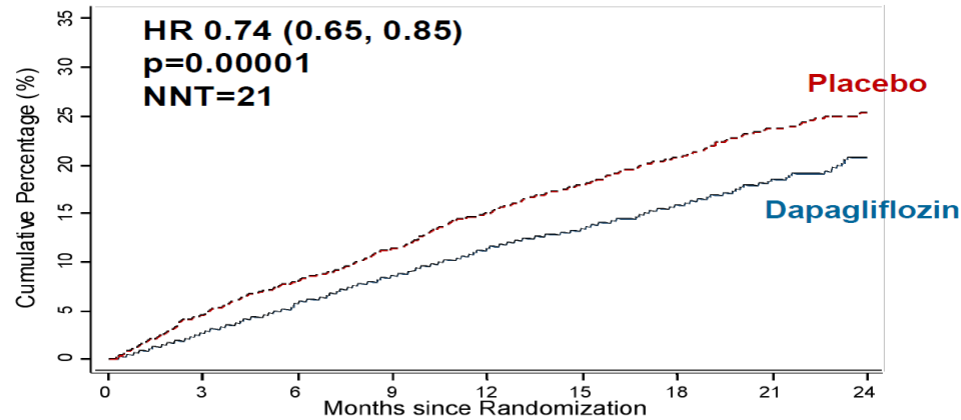
Recommendations	Class ^a	Level ^b
An ACE-I is recommended for patients with HFrEF to reduce the risk of HF hospitalization and death. ^{110–113}	I	A
A beta-blocker is recommended for patients with stable HFrEF to reduce the risk of HF hospitalization and death. ^{114–120}	I	A
An MRA is recommended for patients with HFrEF to reduce the risk of HF hospitalization and death. ^{121,122}	I	A
Dapagliflozin or empagliflozin are recommended for patients with HFrEF to reduce the risk of HF hospitalization and death. ^{108,109}	I	A
Sacubitril/valsartan is recommended as a replacement for an ACE-I in patients with HFrEF to reduce the risk of HF hospitalization and death. ¹⁰⁵	I	B
Sacubitril/valsartan may be considered in ACE-naïve with HFrEF to reduce the risk of HF hospitalization and death	IIb	B

Inhibiteurs SGLT2 dans l'insuffisance cardiaque : 3 essais positifs

ICFEr chronique

DAPA-HF¹

CV Death/HF hospitalization/Urgent HF visit

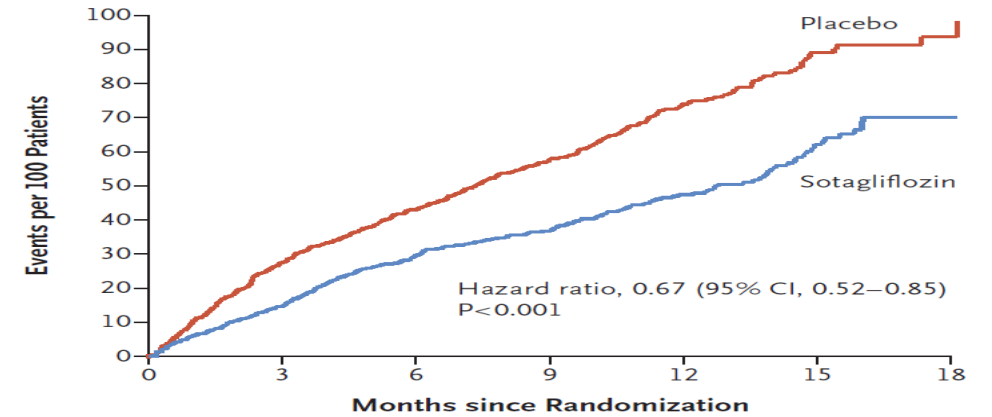


Number at Risk	0	3	6	9	12	15	18	21	24
Dapagliflozin	2373	2305	2221	2147	2002	1560	1146	612	210
Placebo	2371	2258	2163	2075	1917	1478	1096	593	210

Post-ICA

SOLOIST-WHT²

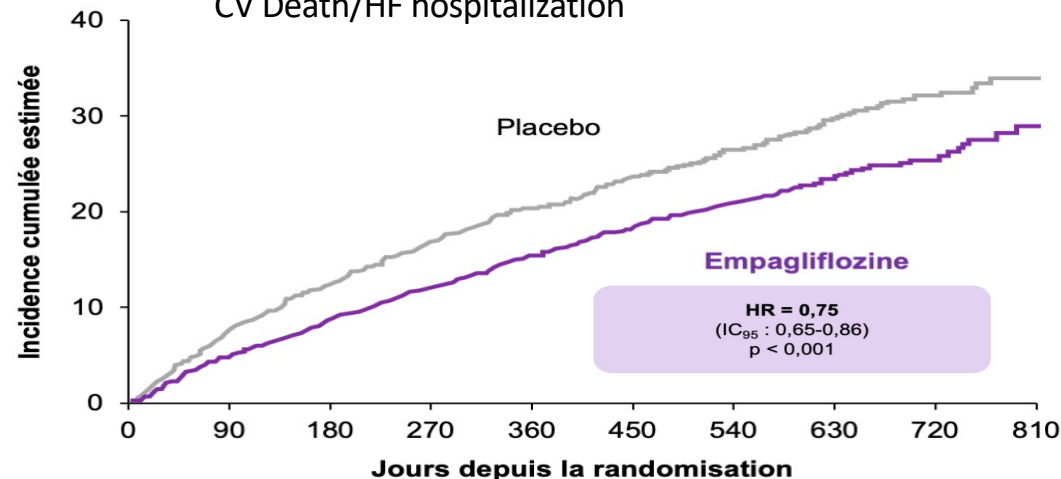
CV Death/HF hospitalization/Urgent HF visit



No. at Risk	0	3	6	9	12	15	18
Placebo	614	524	416	305	195	100	25
Sotagliflozin	608	540	430	310	209	97	29

EMPEROR-Reduced³

CV Death/HF hospitalization



Pourcentage de patients diabétiques :

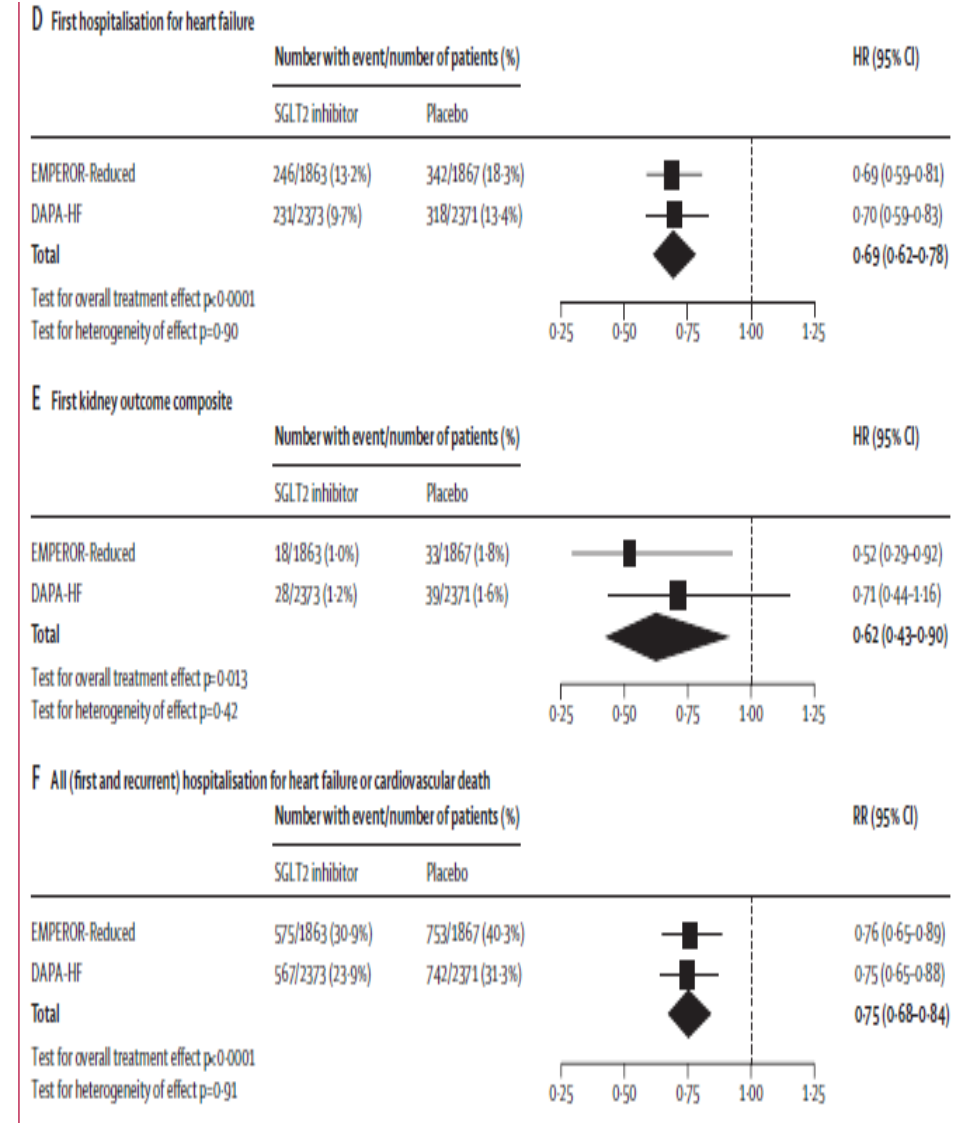
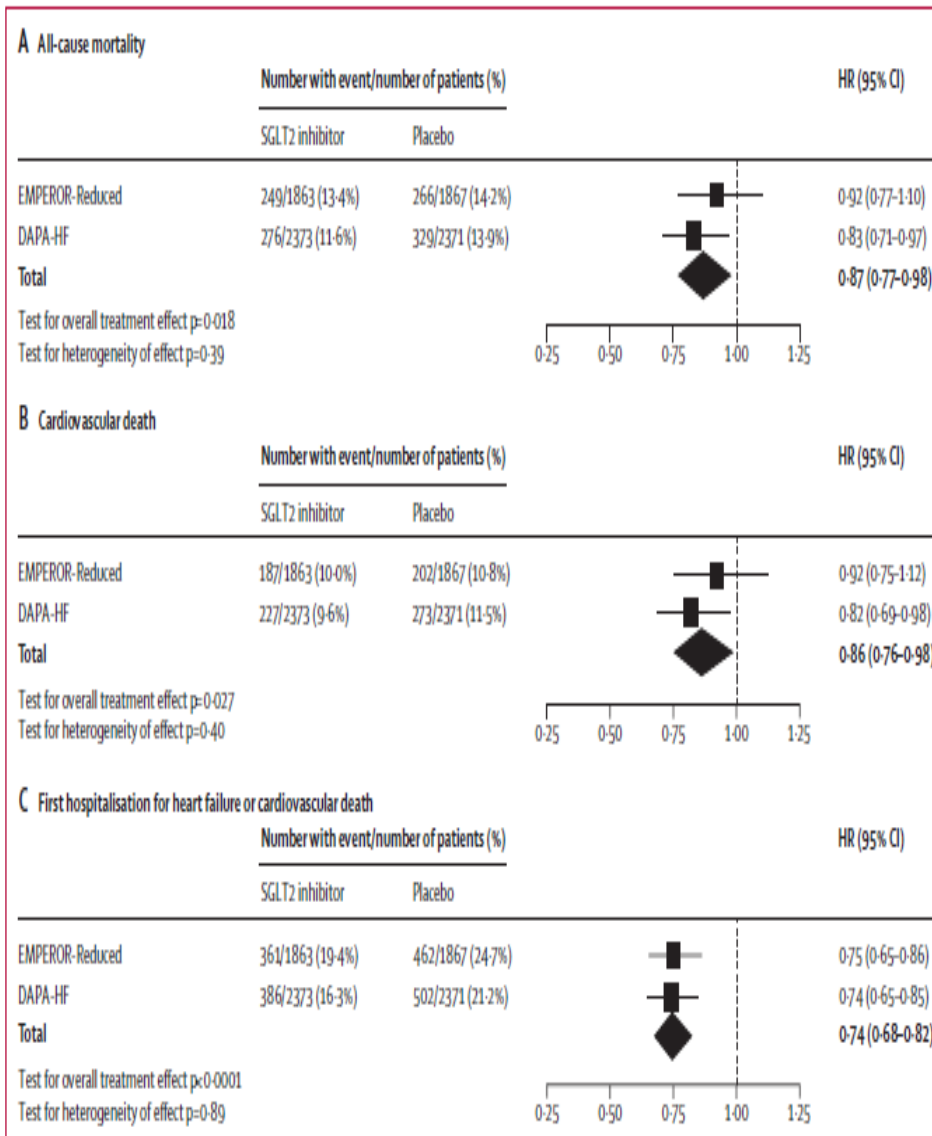
- DAPA-HF : 41,8 %
- EMPEROR-Reduced : 49,8 %
- SOLOIST-WHT : 100 %

1. N Engl J Med 2019;381(21):1995-2008

2. N Engl J Med 2021;384:117-128

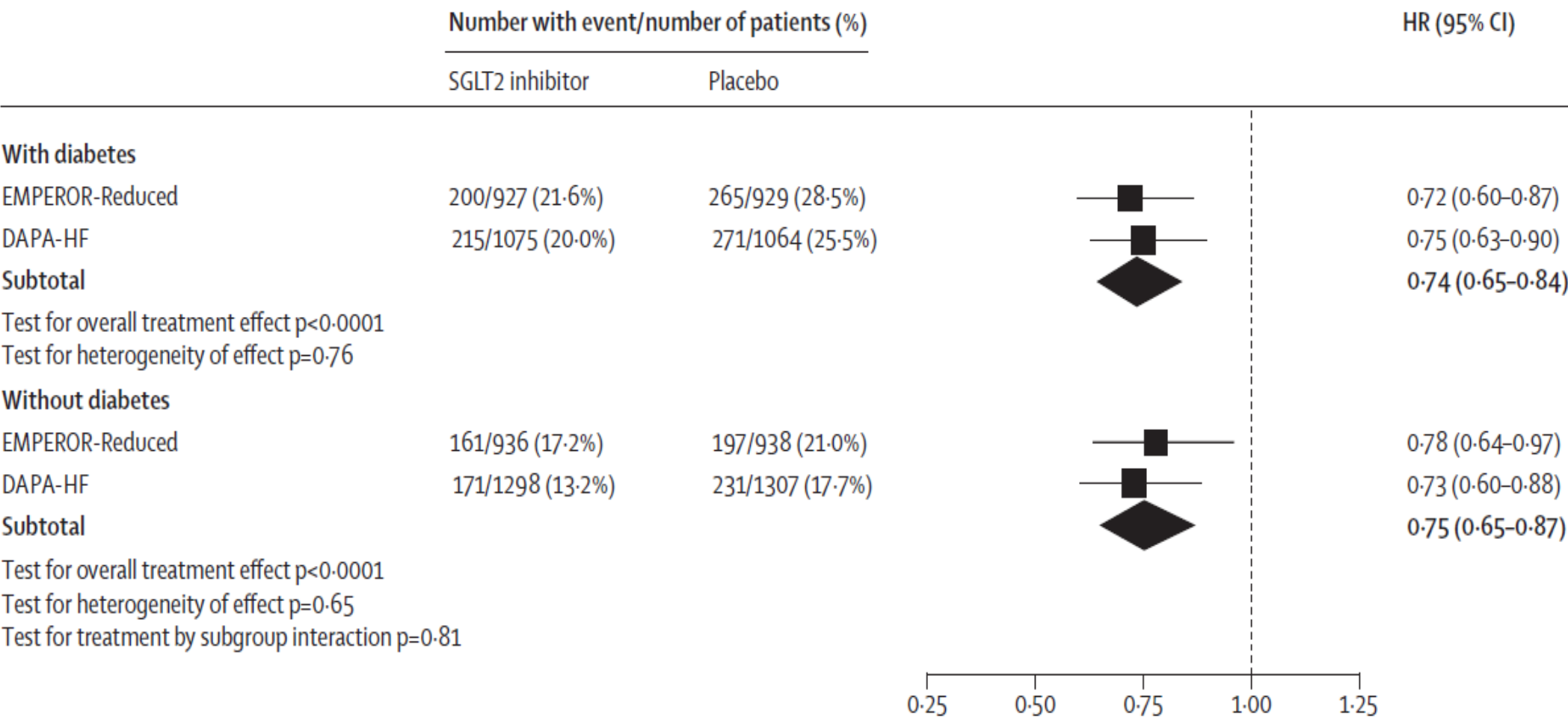
3. N Engl J Med 2020;383(15):1413-1424

Méta-analyse des essais DAPA-HF et EMPEROR-Reduced : effets des gliflozines sur les décès, les hospitalisations pour décompensation cardiaque et les événements rénaux au cours de l'ICFcr chronique



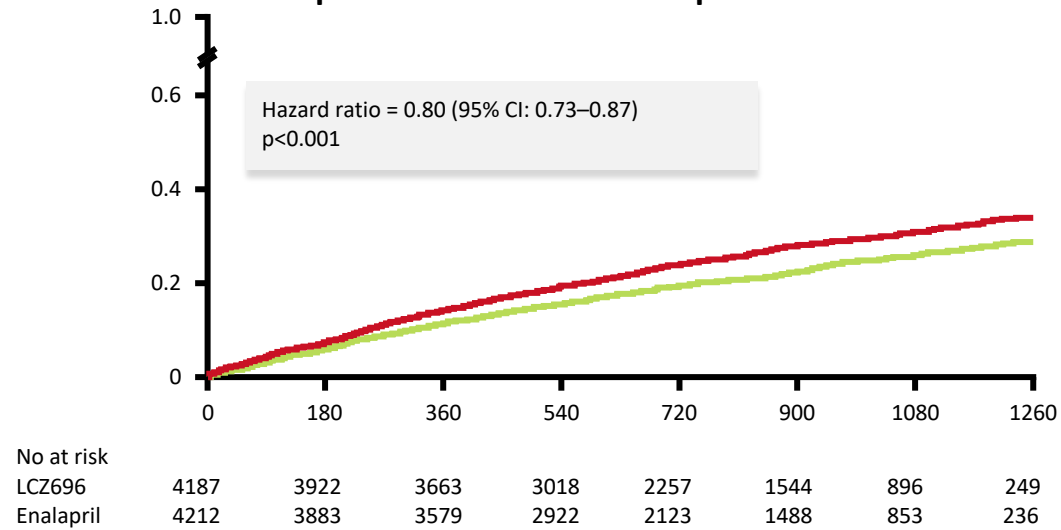
Méta-analyse des essais DAPA-HF et EMPEROR-Reduced : effets des gliflozines sur les décès cardiovasculaires ou la première hospitalisation pour insuffisance cardiaque en fonction du statut glycémique des patients

A Diabetes status

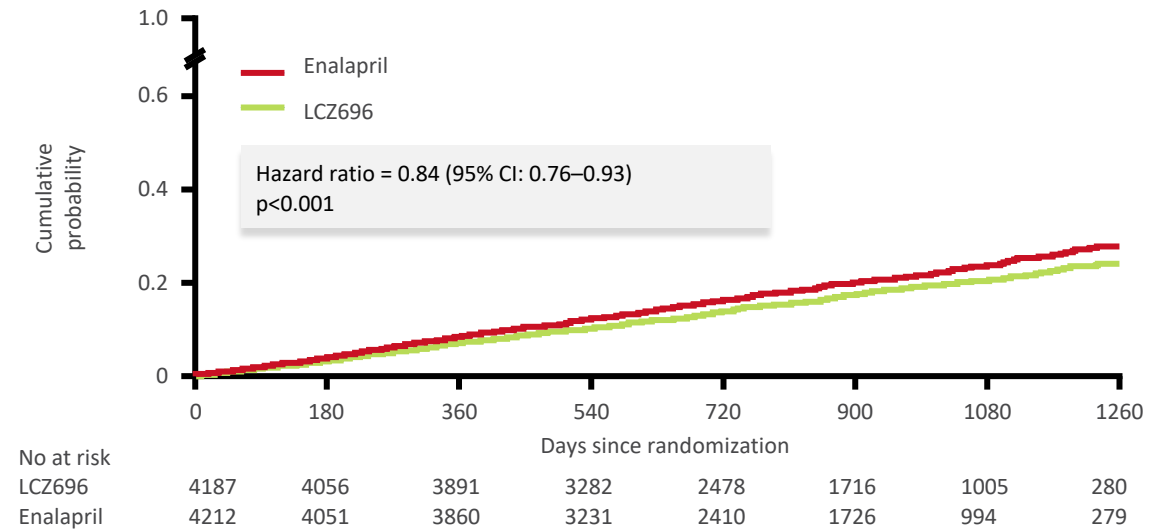


Etude PARADIGM : sacubitril/valsartan vs énalapril dans l'ICFe chronique

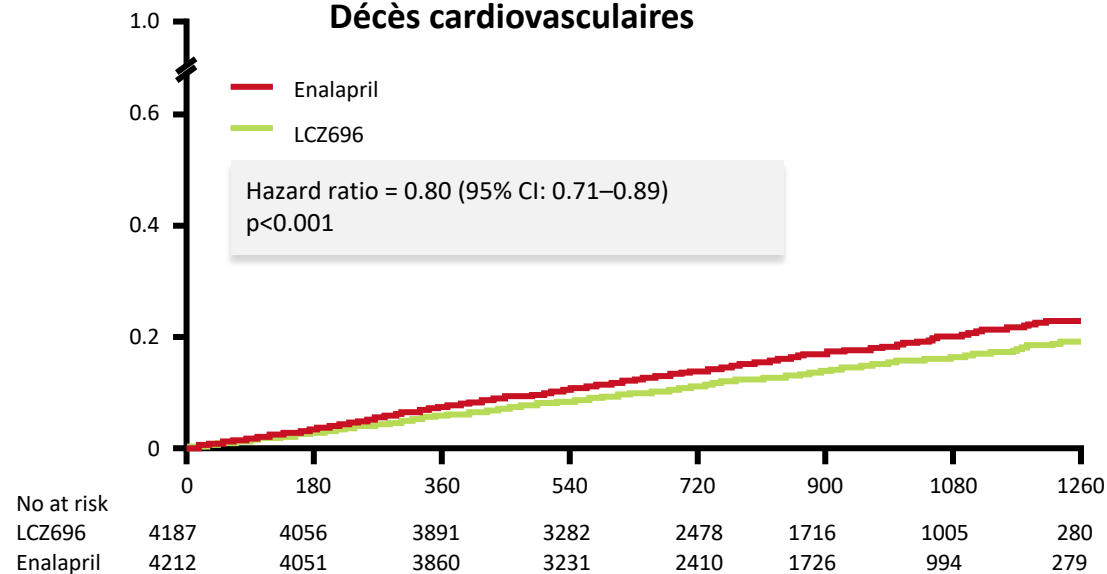
Critère primaire : décès cardiovasculaire et première hospitalisation pour insuffisance cardiaque



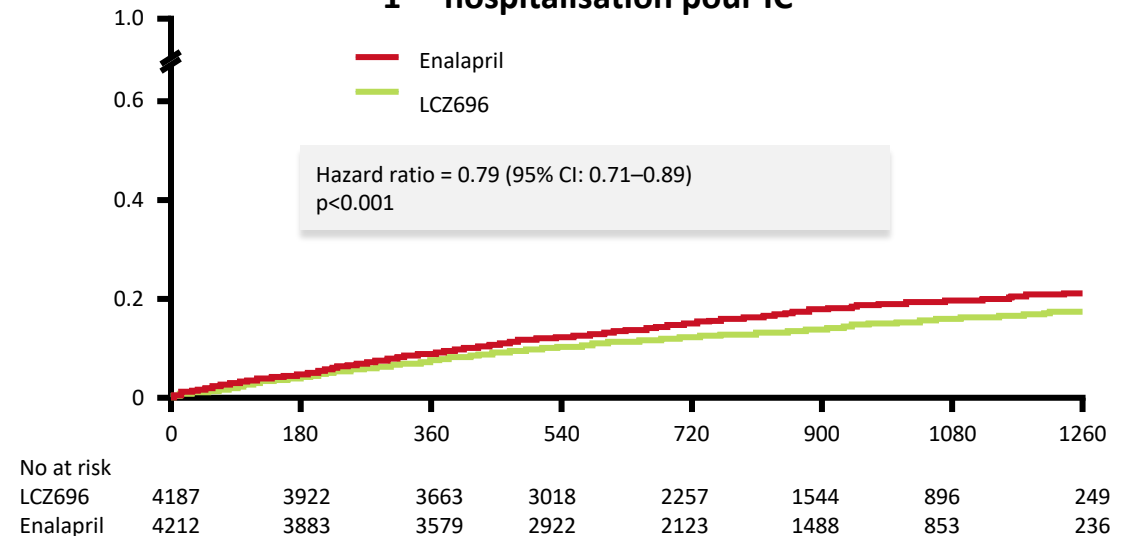
Mortalité toutes causes



Décès cardiovasculaires



1^{ère} hospitalisation pour IC



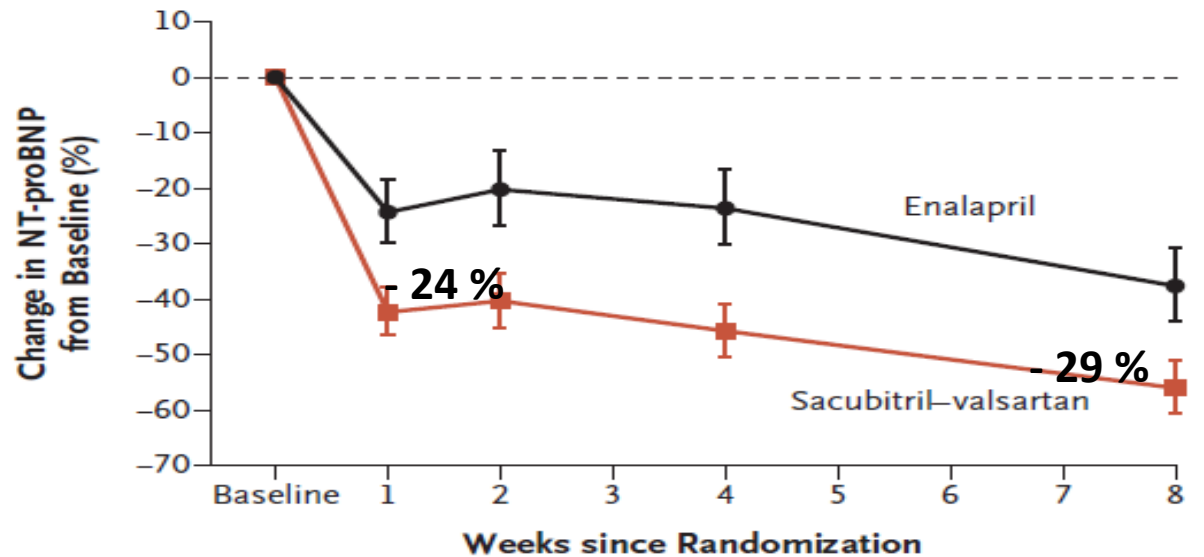
Etude PIONEER-HF : effet de l'initiation précoce au décours d'une IC aiguë du sacubitril/valsartan vs énalapril

881 patients hospitalisés pour ICA (34 % de novo), FE $\leq$ 40 %

Initiation sacubitril/valsartan ou énalapril après stabilisation

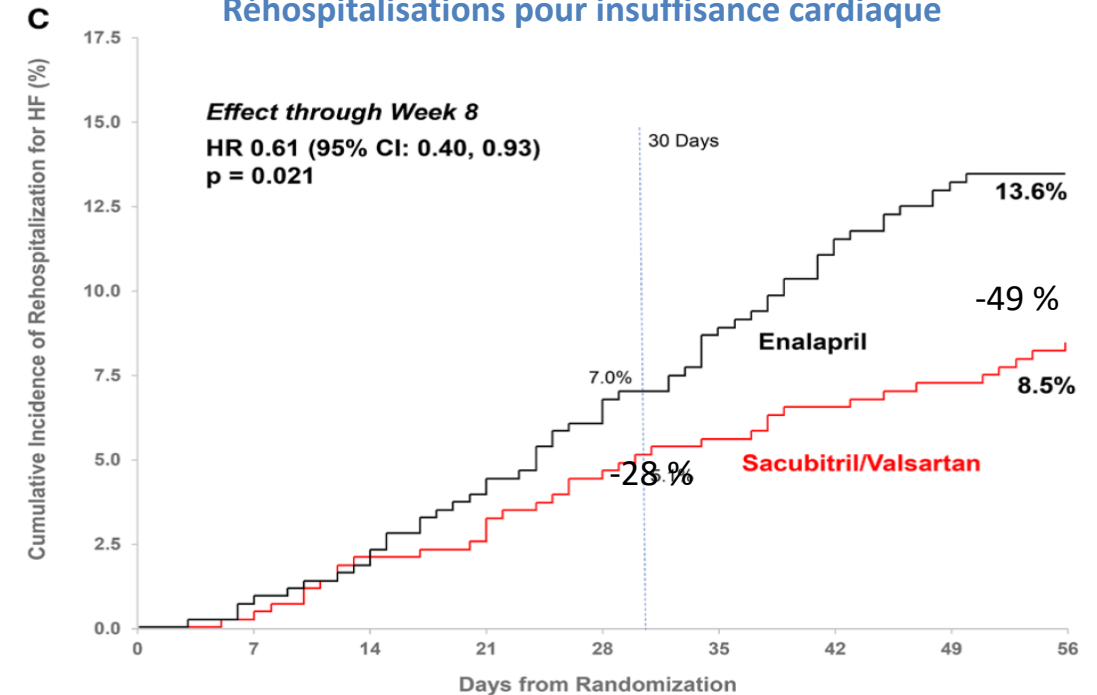
- pas de traitement intraveineux vasodilatateur depuis 6h et inotrope depuis 24h
- absence de majoration posologie diurétiques IV les 6 dernières h
- PAS $\geq$ 100 mmHg

Critère primaire : modification des concentrations de NT-proBNP



No. at Risk					
Enalapril	394	359	351	350	348
Sacubitril-valsartan	397	355	363	365	349

Adjudication post-hoc des causes de décès et réhospitalisation en aveugle
Réhospitalisations pour insuffisance cardiaque



Dose initiale sacubitril/valsartan : 24/26 ou 49/51mg; énalapril : 2,5 ou 5 mg

Comment mettre en place le traitement médical de fond au décours d'une hospitalisation pour décompensation ?

Recommendations	Class
Recommendations for management of patients after HF hospitalization	
It is recommended that patients hospitalized for HF be carefully evaluated to exclude persistent signs of congestion before discharge and to optimize oral treatment.	I
It is recommended that evidence-based oral medical treatment be administered before discharge.	I
An early follow-up visit is recommended at 1–2 weeks after discharge to assess signs of congestion, drug tolerance, and start and/or uptitrate evidence-based therapy.	I

Ordre d'introduction fonction de présentation clinique
Augmentation des posologies tous les 15 jours

Traitement électrique de l'IC à FE réduite : DAI en prévention primaire

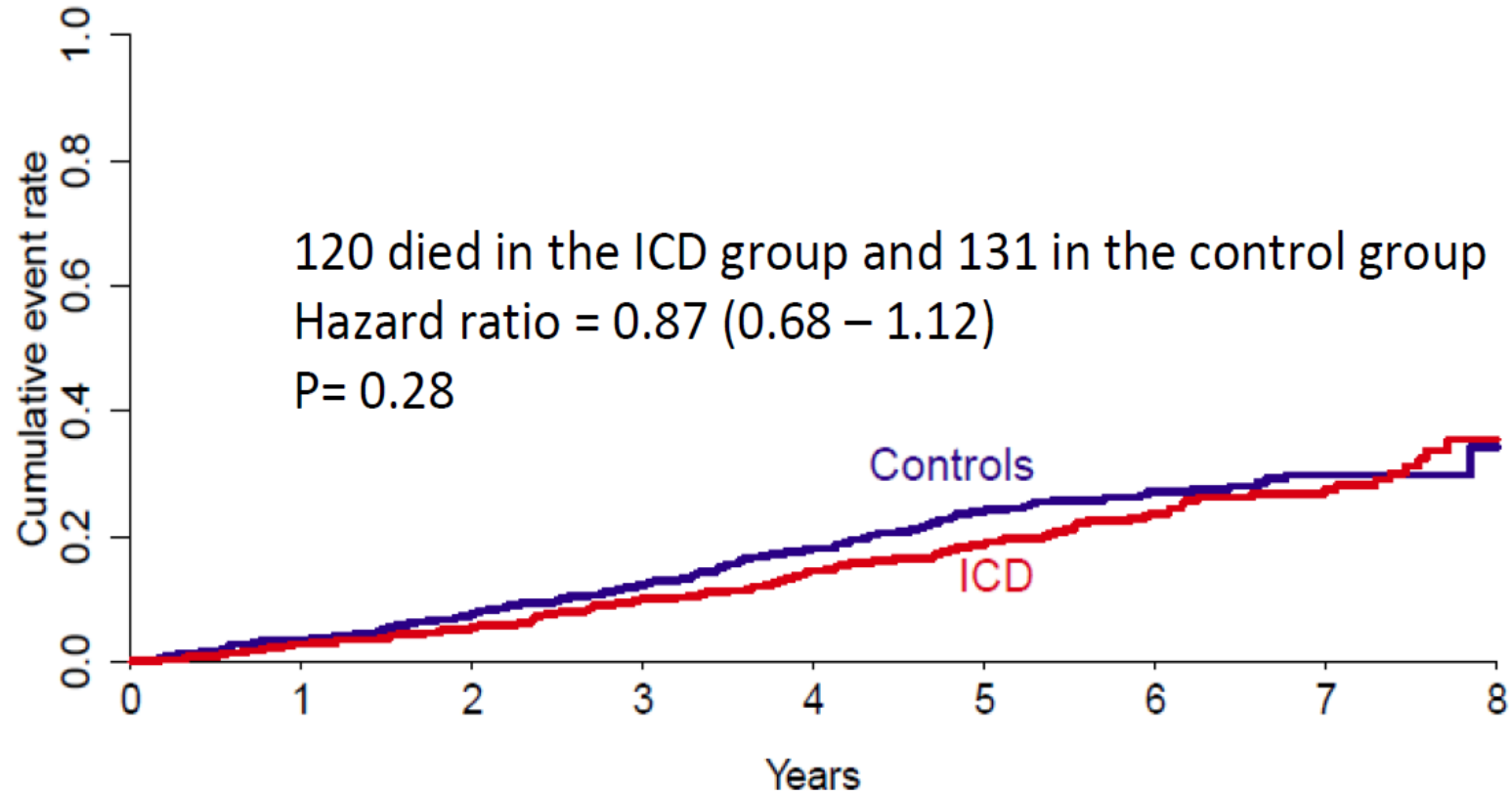
Des précisions

Recommendations	Class ^a	Level ^b
Primary prevention		
An ICD is recommended to reduce the risk of sudden death and all-cause mortality in patients with symptomatic HF (NYHA class II–III) of an ischaemic aetiology (unless they have had a MI in the prior 40 days—see below), and an LVEF ≤35% despite ≥3 months of OMT, provided they are expected to survive substantially longer than 1 year with good functional status. ^{161,165}	I	A
An ICD should be considered to reduce the risk of sudden death and all-cause mortality in patients with symptomatic HF (NYHA class II–III) of a non-ischaemic aetiology, and an LVEF ≤35% despite ≥3 months of OMT, provided they are expected to survive substantially longer than 1 year with good functional status. ^{161,166,167}	IIa	A

Recommendations	Class ^a	Level ^b
Patients should be carefully evaluated by an experienced cardiologist before generator replacement, because management goals, the patient's needs and clinical status may have changed. ^{168–172}	IIa	B
A wearable ICD may be considered for patients with HF who are at risk of sudden cardiac death for a limited period or as a bridge to an implanted device. ^{173–176}	IIb	B
ICD implantation is not recommended within 40 days of a MI as implantation at this time does not improve prognosis. ^{177,178}	III	A
ICD therapy is not recommended in patients in NYHA class IV with severe symptoms refractory to pharmacological therapy unless they are candidates for CRT, a VAD, or cardiac transplantation. ^{179–183}	III	C

Etude DANISH : effet du défibrillateur implantable sur la survie au cours des cardiopathies dilatées non ischémiques

Mortalité totale



Mais diminution de 50 % du risque de mort subite

Traitement électrique de l'IC à FE réduite : stimulateur multisite – Des précisions

Recommendations	Class ^a	Level ^b
CRT is recommended for symptomatic patients with HF in SR with a QRS duration ≥ 150 ms and LBBB QRS morphology and with LVEF $\leq 35\%$ despite OMT in order to improve symptoms and reduce morbidity and mortality. ^{205–215}	I	A
CRT rather than RV pacing is recommended for patients with HFrEF regardless of NYHA class or QRS width who have an indication for ventricular pacing for high degree AV block in order to reduce morbidity. This includes patients with AF. ^{216–219}	I	A
CRT should be considered for symptomatic patients with HF in SR with a QRS duration ≥ 150 ms and non-LBBB QRS morphology and with LVEF $\leq 35\%$ despite OMT in order to improve symptoms and reduce morbidity and mortality. ^{205–215}	IIa	B
CRT should be considered for symptomatic patients with HF in SR with a QRS duration of 130–149 ms and LBBB QRS morphology and with LVEF $\leq 35\%$ despite OMT in order to improve symptoms and reduce morbidity and mortality. ^{211,220}	IIa	B

Recommendations	Class ^a	Level ^b
Patients with an LVEF $\leq 35\%$ who have received a conventional pacemaker or an ICD and subsequently develop worsening HF despite OMT and who have a significant proportion of RV pacing should be considered for 'upgrade' to CRT. ²²¹	IIa	B
CRT may be considered for symptomatic patients with HF in SR with a QRS duration of 130–149 ms and non-LBBB QRS morphology and with LVEF $\leq 35\%$ despite OMT in order to improve symptoms and reduce morbidity and mortality. ^{208,213}	IIb	B
CRT is not recommended in patients with a QRS duration < 130 ms who do not have an indication for pacing due to high degree AV block. ^{222–224}	III	A

Traitement pharmacologique de 2^e intention de l'IC à FE réduite (FE ≤ 40 %)

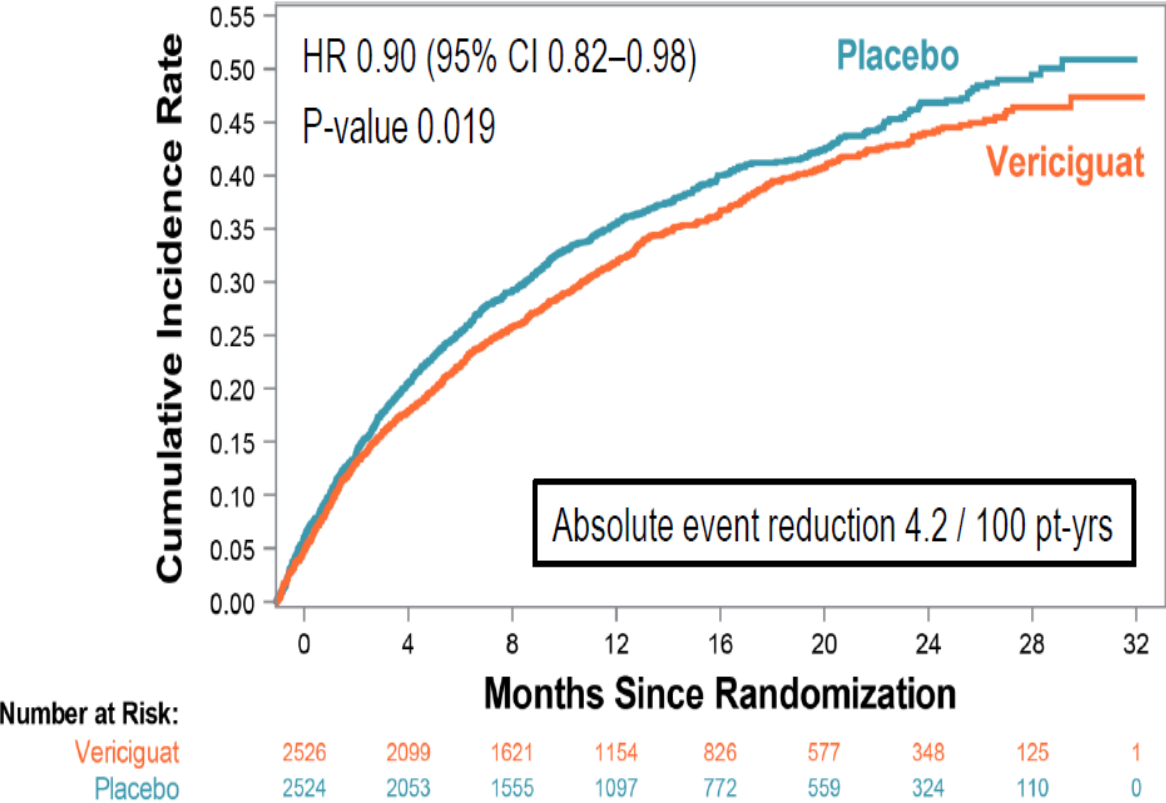
Recommendations	Class ^a	Level ^b
I_f-channel inhibitor		
Ivabradine should be considered in symptomatic patients with LVEF ≤35%, in SR and a resting heart rate ≥70 b.p.m. despite treatment with an evidence-based dose of beta-blocker (or maximum tolerated dose below that), ACE-I/(or ARNI), and an MRA, to reduce the risk of HF hospitalization and CV death. ¹³⁹	IIa	B
Ivabradine should be considered in symptomatic patients with LVEF ≤35%, in SR and a resting heart rate ≥70 b.p.m. who are unable to tolerate or have contraindications for a beta-blocker to reduce the risk of HF hospitalization and CV death. Patients should also receive an ACE-I (or ARNI) and an MRA. ¹⁴⁰	IIa	C

Traitement pharmacologique de 2^e intention de l'IC à FE réduite (FE ≤ 40 %) : des nouveautés

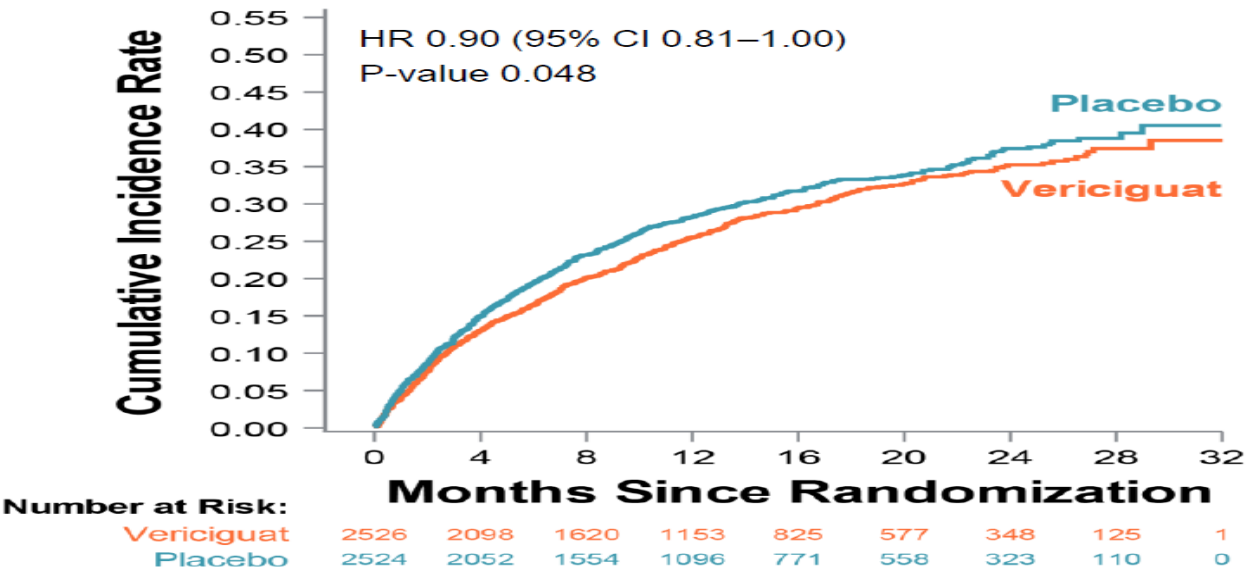
Recommendations	Class ^a	Level ^b
Soluble guanylate cyclase receptor stimulator		
Vericiguat may be considered in patients in NYHA class II–IV who have had worsening HF despite treatment with an ACE-I (or ARNI), a beta-blocker and an MRA to reduce the risk of CV mortality or HF hospitalization. ¹⁴¹	IIb	B
Hydralazine and isosorbide dinitrate		
Hydralazine and isosorbide dinitrate should be considered in self-identified black patients with LVEF ≤35% or with an LVEF <45% combined with a dilated left ventricle in NYHA class III–IV despite treatment with an ACE-I (or ARNI), a beta-blocker and an MRA to reduce the risk of HF hospitalization and death. ¹⁴²	IIa	B
Hydralazine and isosorbide dinitrate may be considered in patients with symptomatic HFrEF who cannot tolerate any of an ACE-I, an ARB, or ARNI (or they are contraindicated) to reduce the risk of death. ¹⁴³	IIb	B

Etude VICTORIA : résultats du critère primaire

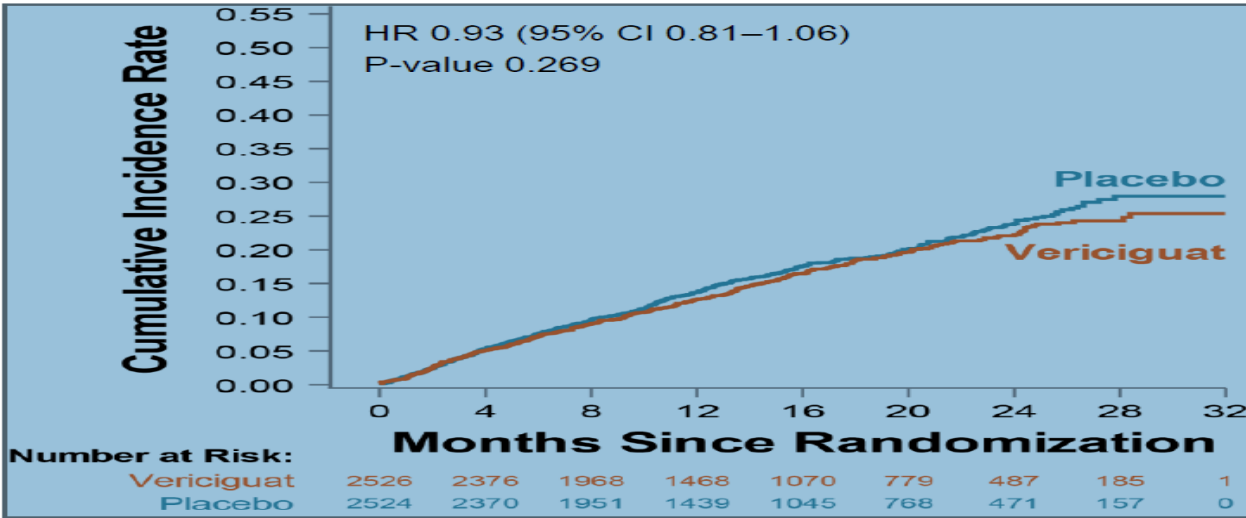
CV Death/first HF hospitalization



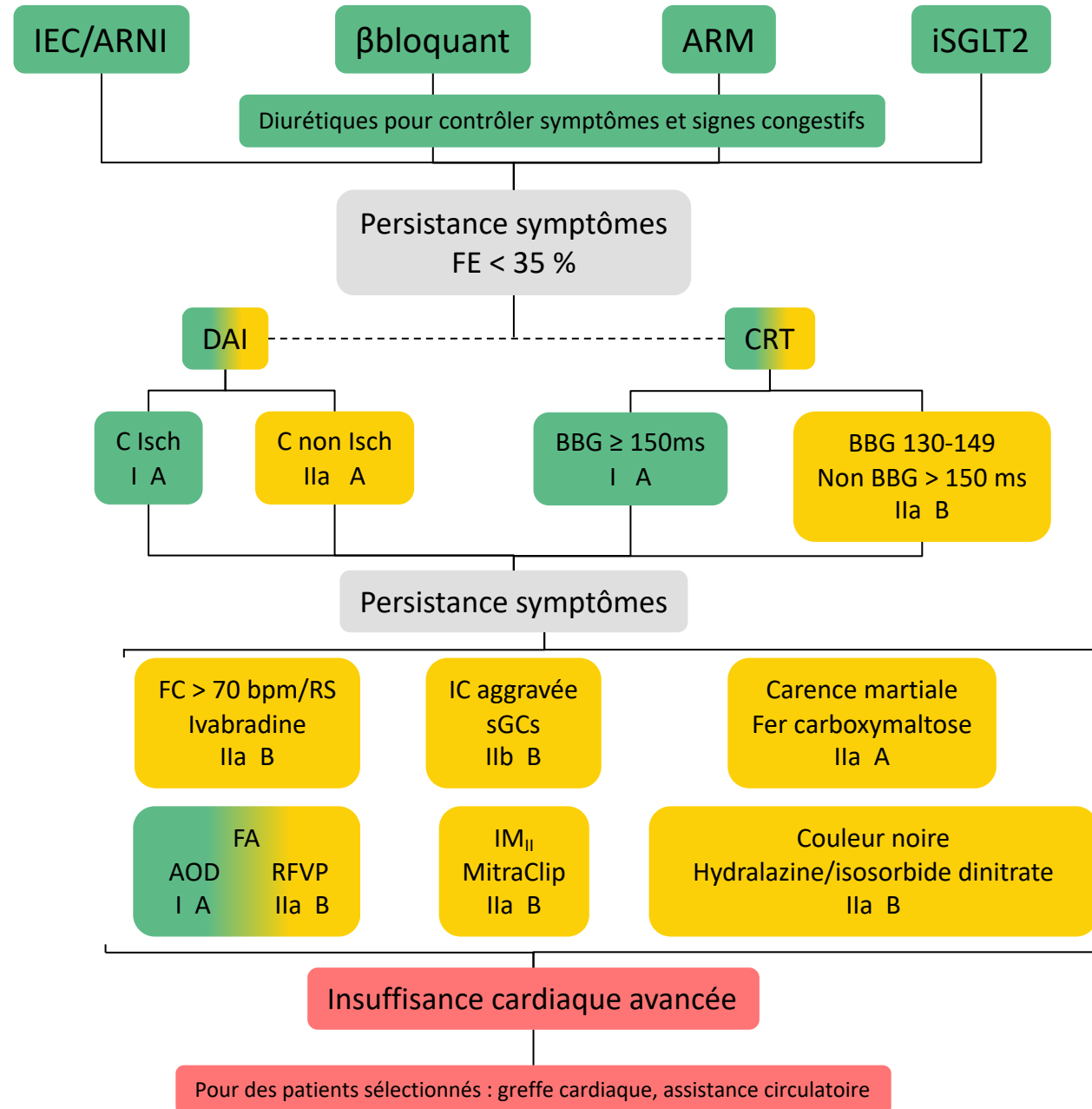
First HF Hospitalization



Cardiovascular Death



Traitement de l'insuffisance cardiaque à fraction d'éjection réduite : une approche phénotypique



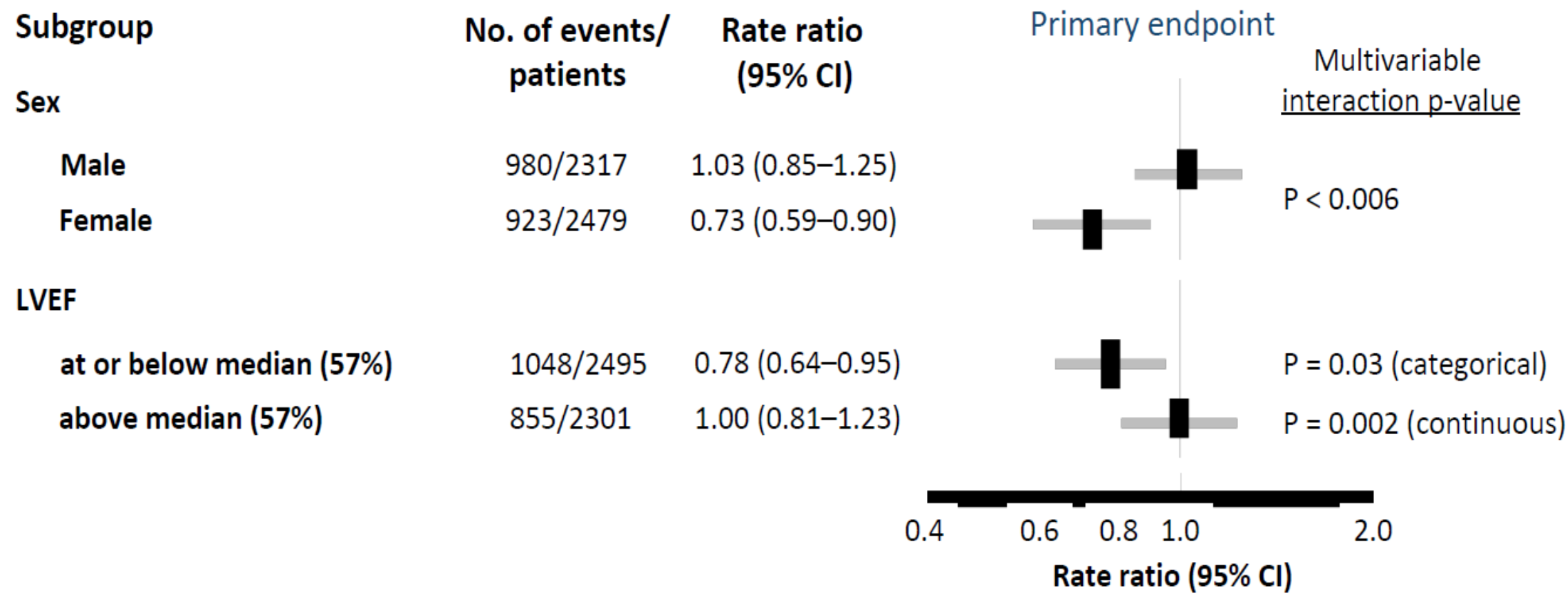
Traitement des insuffisances cardiaques à fraction d'éjection intermédiaire (FE entre 41 et 49 %)

ESC 2016

Recommandations	Classe	Niveau
Les comorbidités cardiovasculaires et non cardiovasculaires doivent être systématiquement recherchées et traitées par des interventions efficaces et sûres pour améliorer les symptômes, la qualité de vie et/ou le pronostic	I	C
Les diurétiques doivent être utilisés chez les patients congestifs pour améliorer les symptômes et les signes	I	B

Traitement de l'insuffisance cardiaque à fraction d'éjection modérément réduite (FE entre 41 et 49 %)

Analyse en sous-groupe en multivarié du critère primaire de l'essai PARAGON-HF
selon la valeur de la fraction d'éjection



Traitement de l'insuffisance cardiaque à fraction d'éjection modérément réduite (FE entre 41 et 49 %)

Une approche pragmatique

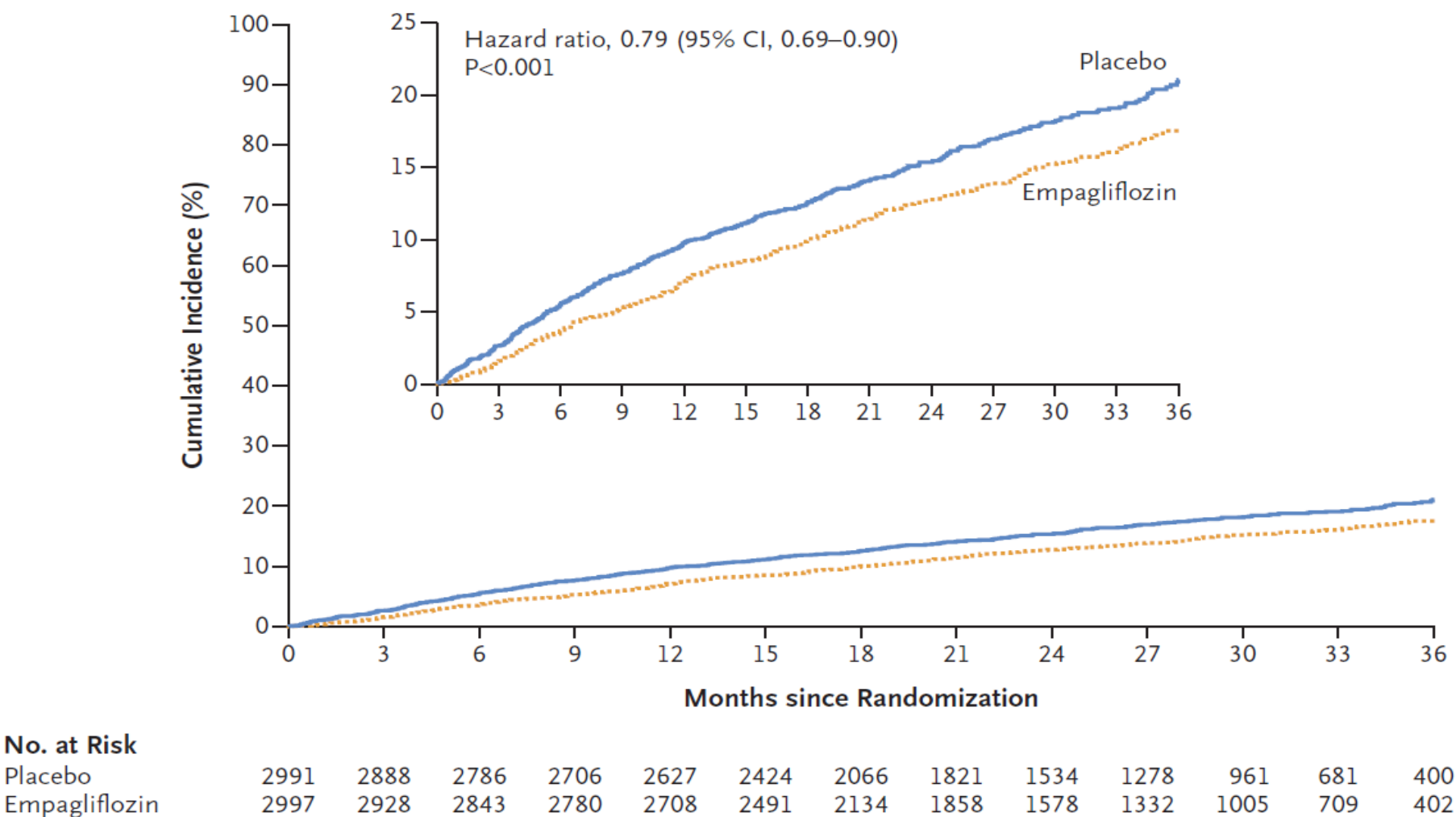
Recommendations	Class ^a	Level ^b
Diuretics are recommended in patients with congestion and HFmrEF in order to alleviate symptoms and signs. ¹³⁷	I	C
An ACE-I may be considered for patients with HFmrEF to reduce the risk of HF hospitalization and death. ¹¹	IIb	C
An ARB may be considered for patients with HFmrEF to reduce the risk of HF hospitalization and death. ²⁴⁵	IIb	C
A beta-blocker may be considered for patients with HFmrEF to reduce the risk of HF hospitalization and death. ^{12,119}	IIb	C
An MRA may be considered for patients with HFmrEF to reduce the risk of HF hospitalization and death. ²⁴⁶	IIb	C
Sacubitril/valsartan may be considered for patients with HFmrEF to reduce the risk of HF hospitalization and death. ^{13,247}	IIb	C

Traitement de l'insuffisance cardiaque à fraction d'éjection préservée.....

Recommendations	Class ^a	Level ^b
Screening for, and treatment of, aetiologies, and cardiovascular and non-cardiovascular comorbidities is recommended in patients with HFpEF (see relevant sections of this document).	I	C
Diuretics are recommended in congested patients with HFpEF in order to alleviate symptoms and signs. ¹³⁷	I	C

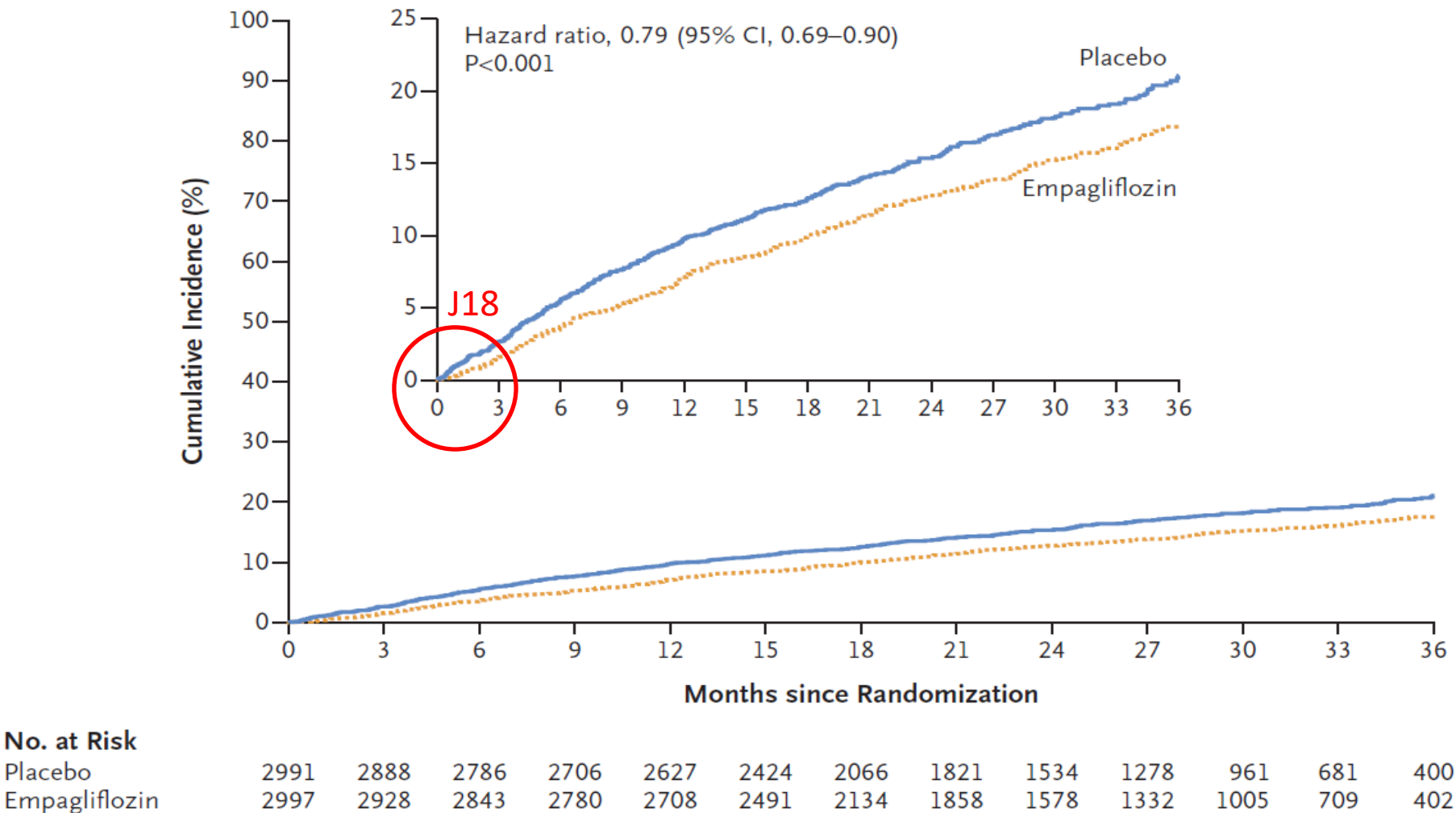
Etude EMPEROR-Preserved : empagliflozine dans l'ICFep

Décès cardiovasculaires et hospitalisations pour IC



Etude EMPEROR-Preserved : empagliflozine dans l'ICFep

Décès cardiovasculaires et hospitalisations pour IC



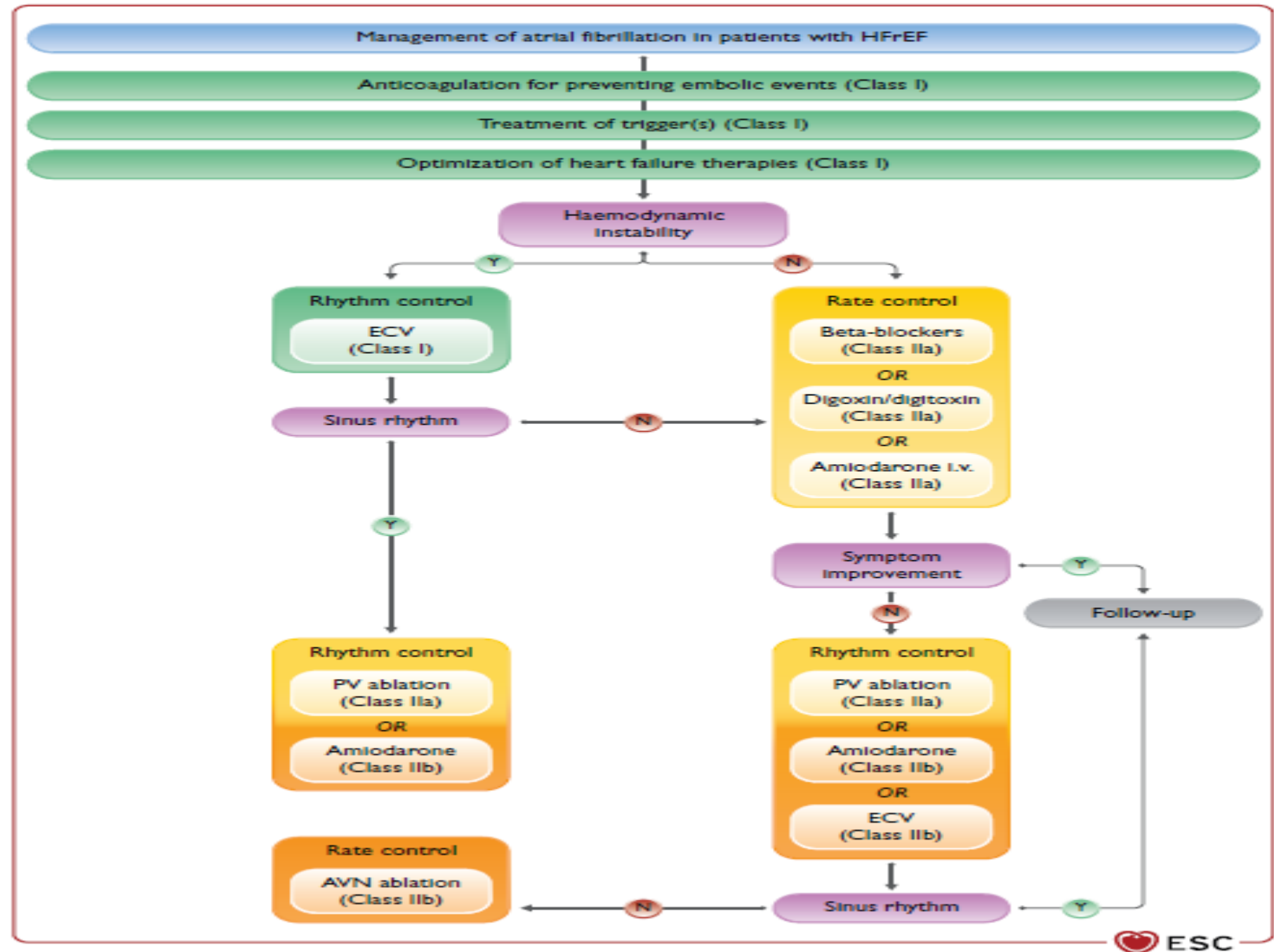
Interventions multidisciplinaires pour la prise en charge de l'insuffisance cardiaque chronique

Recommendations	Class ^a	Level ^b
It is recommended that HF patients are enrolled in a multidisciplinary HF management programme to reduce the risk of HF hospitalization and mortality. ^{309,314,315,316}	I	A
Self-management strategies are recommended to reduce the risk of HF hospitalization and mortality. ³⁰⁹	I	A
Either home-based and/or clinic-based programmes improve outcomes and are recommended to reduce the risk of HF hospitalization and mortality. ^{310,317}	I	A
Influenza and pneumococcal vaccinations should be considered in order to prevent HF hospitalizations. ^{315,316}	IIa	B

Place de la télésurveillance de l'insuffisance cardiaque chronique

Recommendations	Class ^a	Level ^b
Non-invasive HTM may be considered for patients with HF in order to reduce the risk of recurrent CV and HF hospitalizations and CV death. ³⁷⁴	IIb	B
Monitoring of pulmonary artery pressure using a wireless haemodynamic monitoring system may be considered in symptomatic patients with HFrEF (LVEF $\leq 35\%$) in order to improve clinical outcomes. ³⁷²	IIb	B

Fibrillation atriale et insuffisance cardiaque

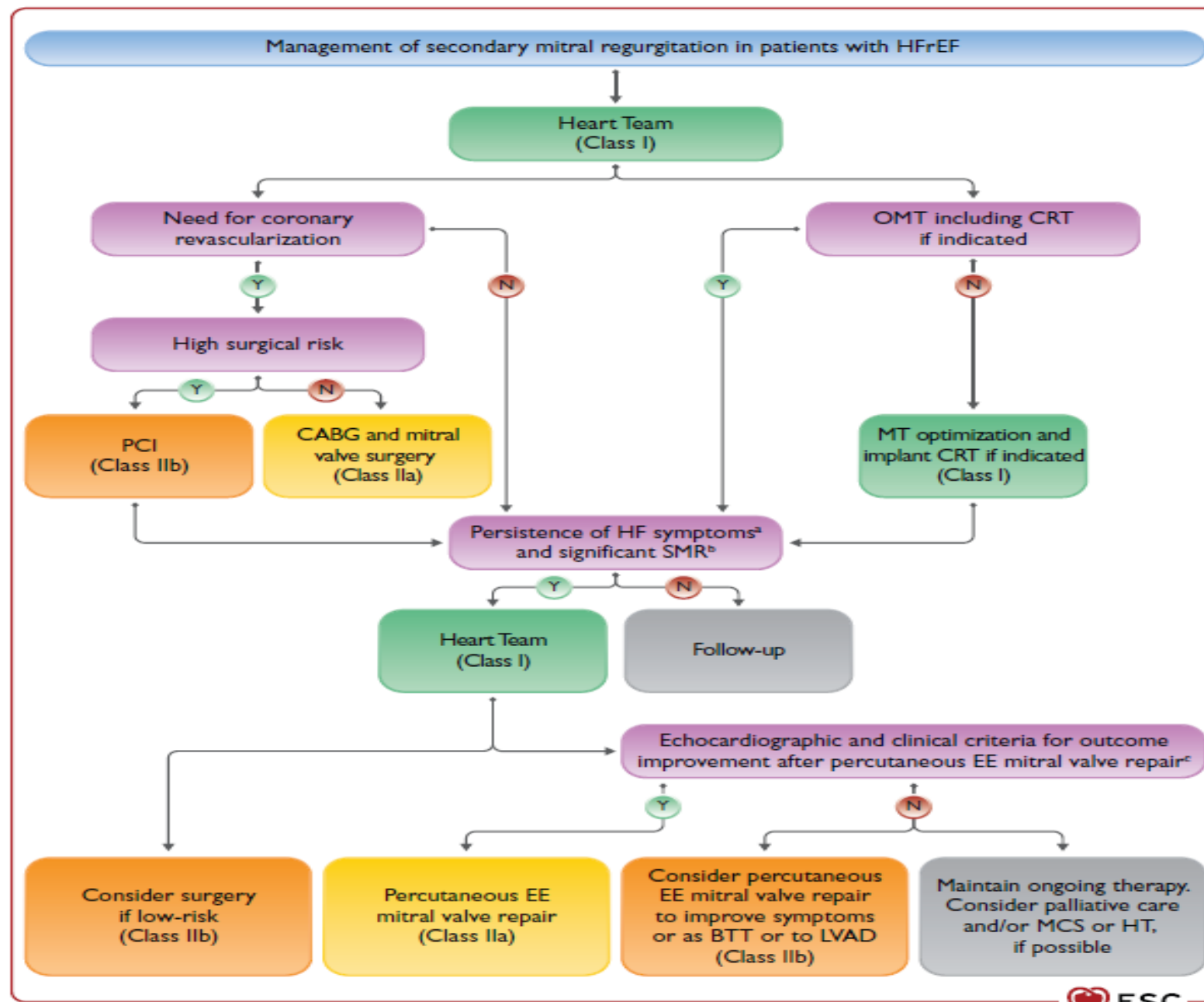


Fibrillation atriale et insuffisance cardiaque : une place privilégiée pour les AOD et l'ablation

Recommendations	Class ^a	Level ^b
Anticoagulation		
Long-term treatment with an oral anticoagulant is recommended in all patients with AF, HF, and CHA ₂ DS ₂ -VASc score ≥ 2 in men or ≥ 3 in women. ⁷	I	A
DOACs are recommended in preference to VKAs in patients with HF, except in those with moderate or severe mitral stenosis or mechanical prosthetic heart valves. ^{528,558}	I	A
Long-term treatment with an oral anticoagulant should be considered for stroke prevention in AF patients with a CHA ₂ DS ₂ -VASc score of 1 in men or 2 in women. ^{7,559}	IIa	B
Rate control		
Beta-blockers should be considered for short- and long-term rate control in patients with HF and AF. ⁵³⁵	IIa	B
Digoxin should be considered when the ventricular rate remains high, despite beta-blockers, or when beta-blockers are contraindicated or not tolerated. ⁵³⁶	IIa	C

Recommendations	Class ^a	Level ^b
Cardioversion		
Urgent ECV is recommended in the setting of acute worsening of HF in patients presenting with rapid ventricular rates and haemodynamic instability.	I	C
Cardioversion may be considered in patients in whom there is an association between AF and worsening of HF symptoms despite optimal medical treatment. ^{7,541}	IIb	B
AF catheter ablation		
In cases of a clear association between paroxysmal or persistent AF and worsening of HF symptoms, which persist despite MT, catheter ablation should be considered for the prevention or treatment of AF. ^{552–554,557}	IIa	B

Prise en charge de l'insuffisance mitrale secondaire dans l'IC à fraction d'éjection réduite



Prise en charge de l'insuffisance mitrale secondaire dans l'IC à fraction d'éjection réduite

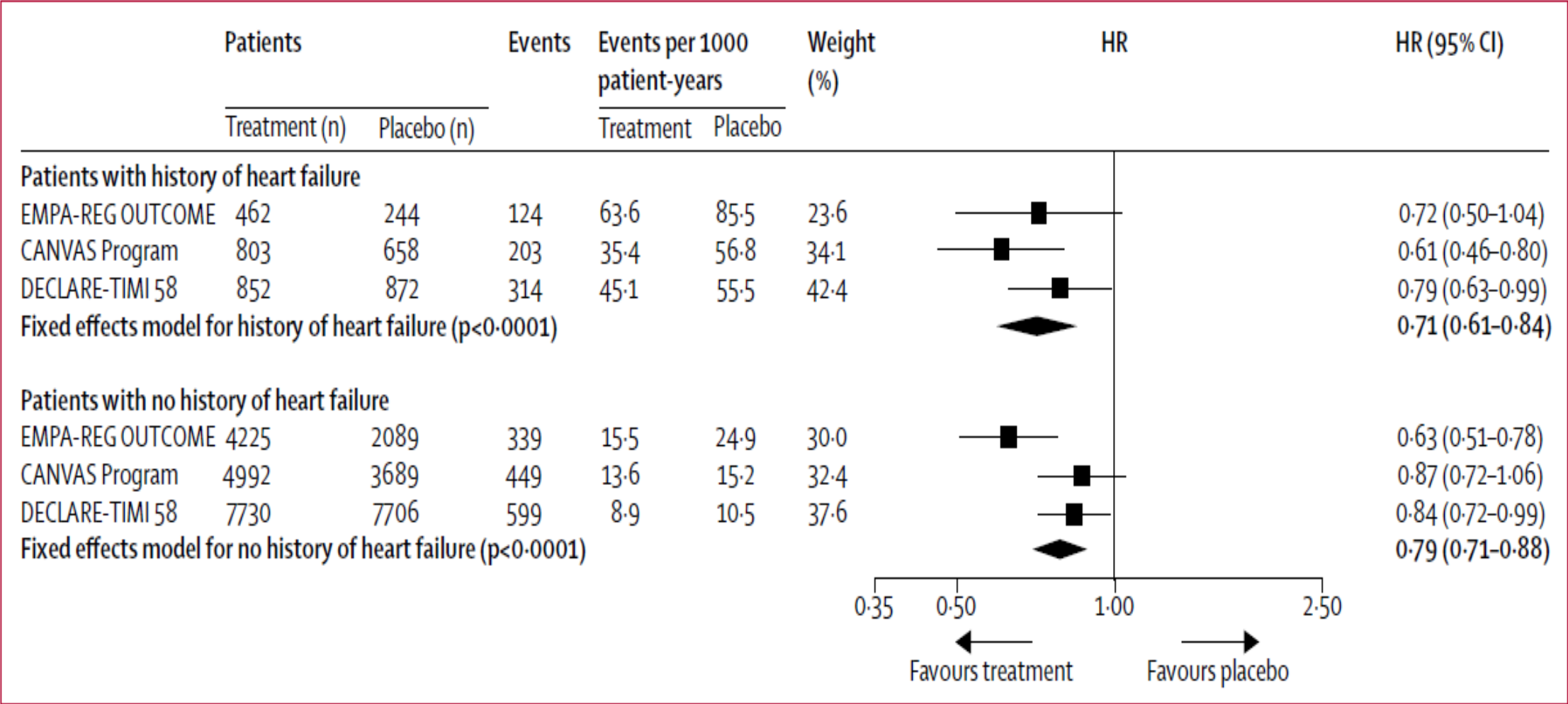
Place du MitraClip précisée

Recommendations	Class ^a	Level ^b
Secondary mitral regurgitation		
Percutaneous edge-to-edge mitral valve repair should be considered in carefully selected patients with secondary mitral regurgitation, not eligible for surgery and not needing coronary revascularization, who are symptomatic ^c despite OMT and who fulfil criteria ^d for achieving a reduction in HF hospitalizations. ⁶¹²	IIa	B
In patients with HF, severe secondary mitral regurgitation and CAD who need revascularization, CABG and mitral valve surgery should be considered.	IIa	C
Percutaneous edge-to-edge mitral valve repair may be considered to improve symptoms in carefully selected patients with secondary mitral regurgitation, not eligible for surgery and not needing coronary revascularization, highly symptomatic despite OMT and who do not fulfil criteria for reducing HF hospitalization. ⁶¹⁷	IIb	C

Traitement du diabète dans l'insuffisance cardiaque : le triomphe des iSGLT2

Recommendation	Class ^a	Level ^b
SGLT2 inhibitors (canagliflozin, dapagliflozin, empagliflozin, ertugliflozin, sotagliflozin) are recommended in patients with T2DM at risk of CV events to reduce hospitalizations for HF, major CV events, end-stage renal dysfunction, and CV death. ^{293–297}	I	A
SGLT2 inhibitors (dapagliflozin, empagliflozin, and sotagliflozin) are recommended in patients with T2DM and HFrEF to reduce hospitalizations for HF and CV death. ^{108,109,136}	I	A

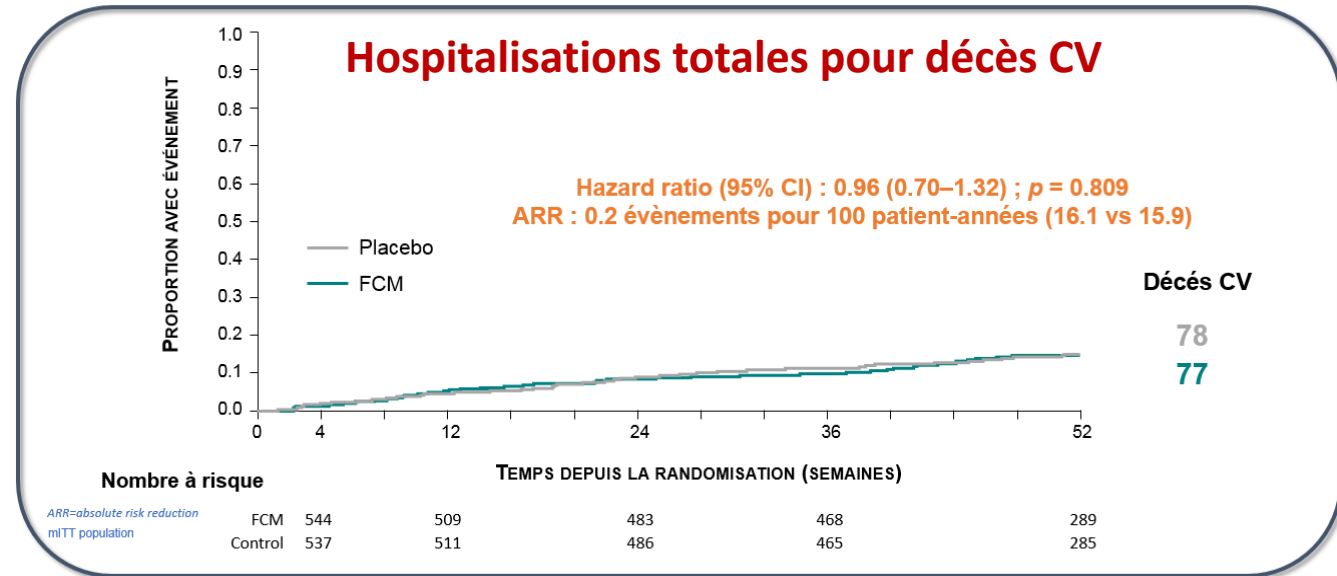
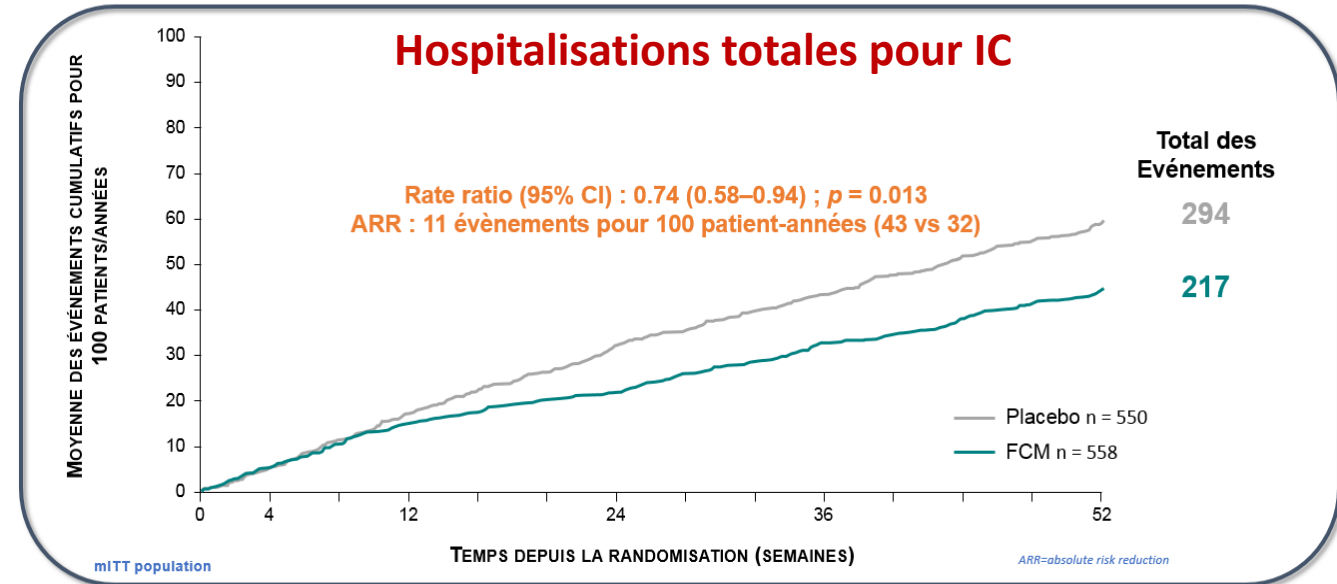
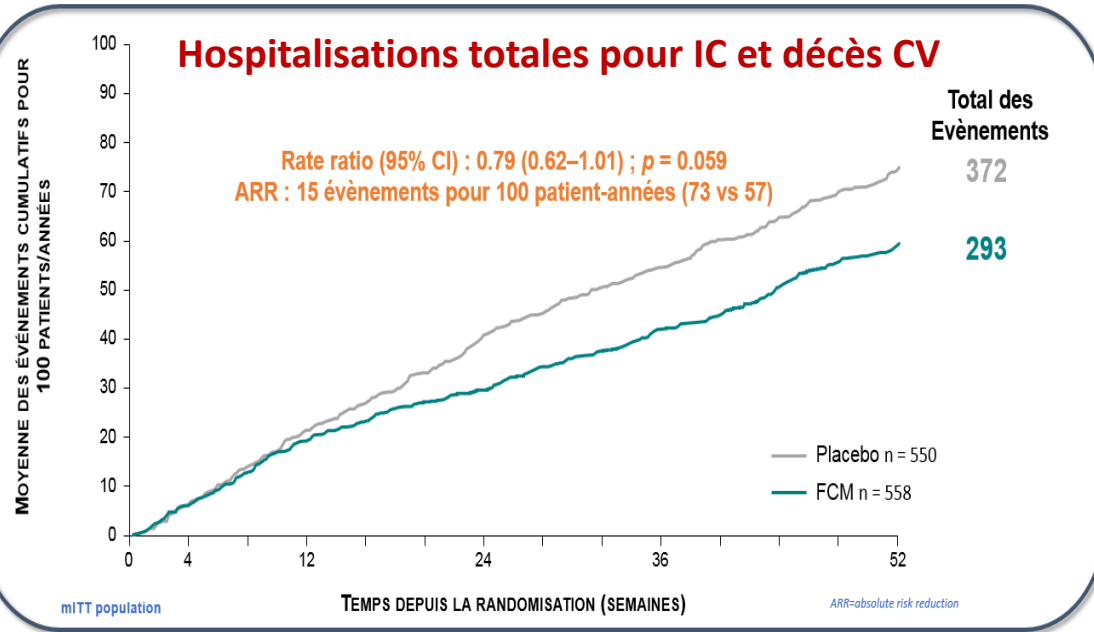
Méta-analyse des essais des inhibiteurs SGLT2 au cours du diabète de type 2 : effets sur les décès cxvx et les hospitalisations pour IC



Prise en charge de l'anémie et de la carence martiale dans l'insuffisance cardiaque : de l'ICC à l'ICA

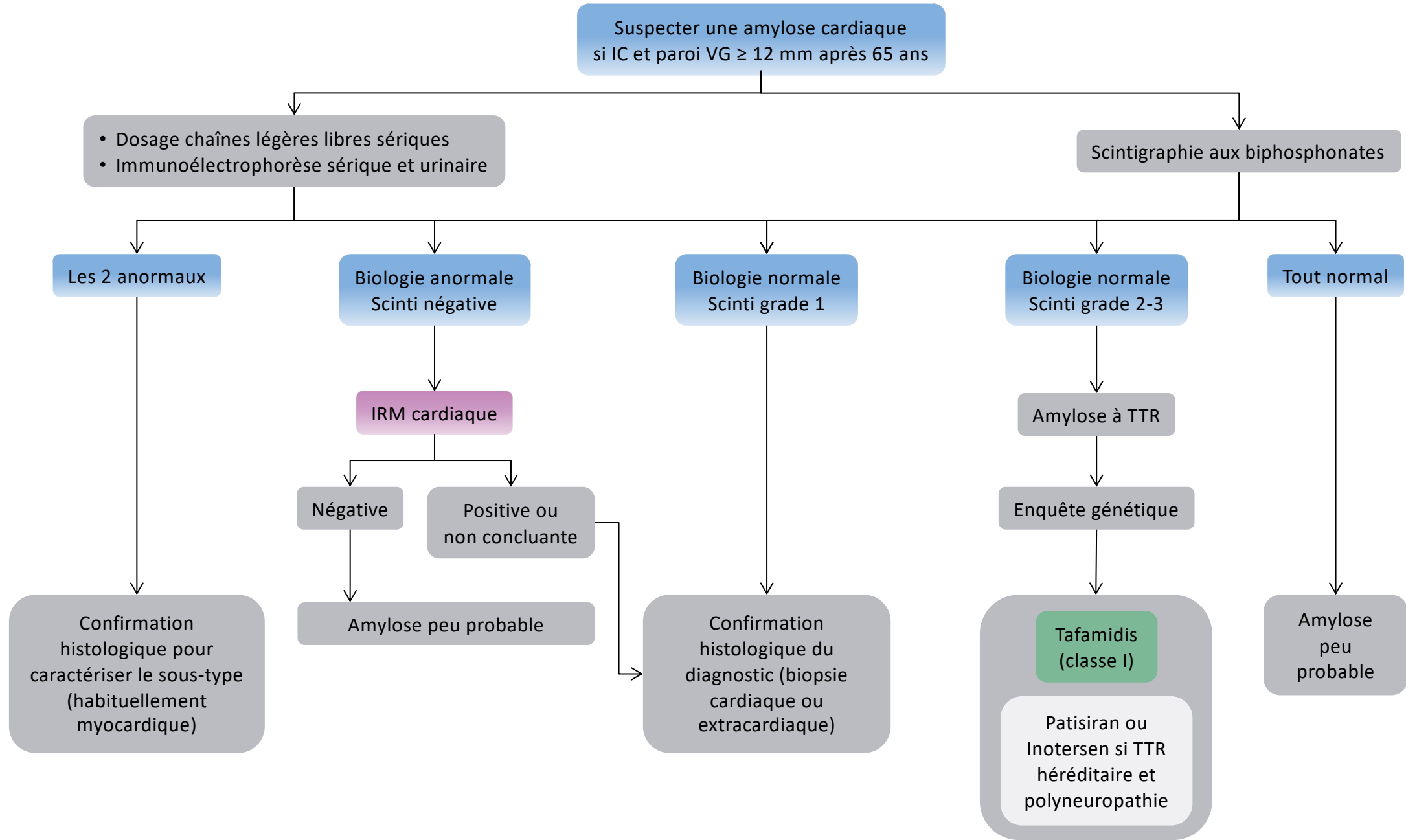
Recommendations	Class ^a	Level ^b
It is recommended that all patients with HF be periodically screened for anaemia and iron deficiency with a full blood count, serum ferritin concentration, and TSAT.	I	C
Intravenous iron supplementation with ferric carboxymaltose should be considered in symptomatic patients with LVEF <45% and iron deficiency, defined as serum ferritin <100 ng/mL or serum ferritin 100–299 ng/mL with TSAT <20%, to alleviate HF symptoms, improve exercise capacity and QOL. ^{720,722,724}	IIa	A
Intravenous iron supplementation with ferric carboxymaltose should be considered in symptomatic HF patients recently hospitalized for HF and with LVEF <50% and iron deficiency, defined as serum ferritin <100 ng/mL or serum ferritin 100–299 ng/mL with TSAT <20%, to reduce the risk of HF hospitalization. ⁵¹²	IIa	B

Etude AFFIRM-AHF - Résultats



Diagnostic et traitement de l'amylose cardiaque chez les patients insuffisants cardiaques

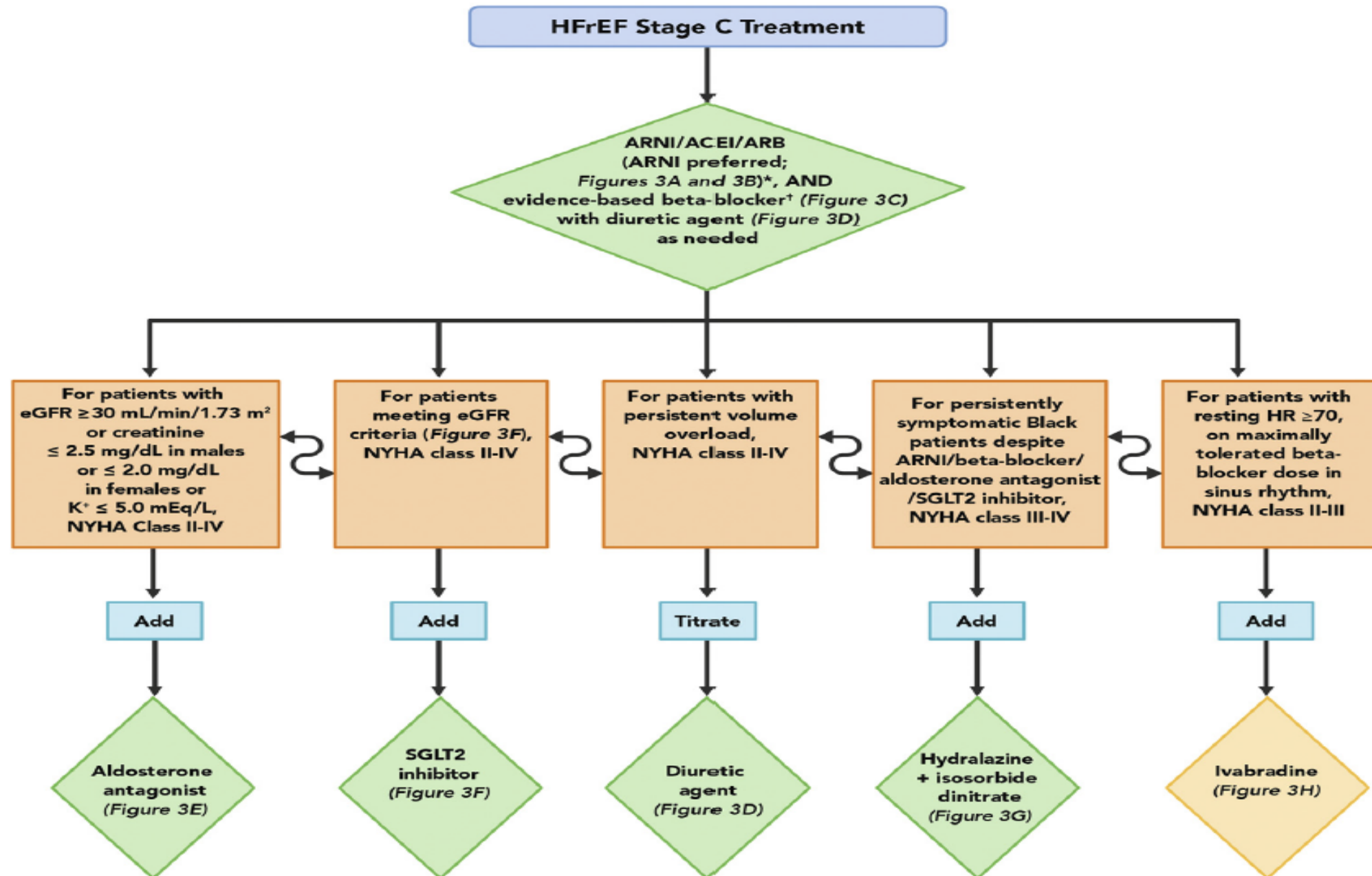
un nouvel algorithme diagnostique



Traitement de l'amylose cardiaque à transthyrétine : place du tafamidis reconnue

Recommendations	Class ^a	Level ^b
Tafamidis is recommended in patients with genetic testing proven hereditary hTTR-CMP and NYHA class I or II symptoms to reduce symptoms, CV hospitalization and mortality. ⁹⁷⁹	I	B
Tafamidis is recommended in patients with wtTTR-CA and NYHA class I or II symptoms to reduce symptoms, CV hospitalization and mortality. ⁹⁷⁹	I	B

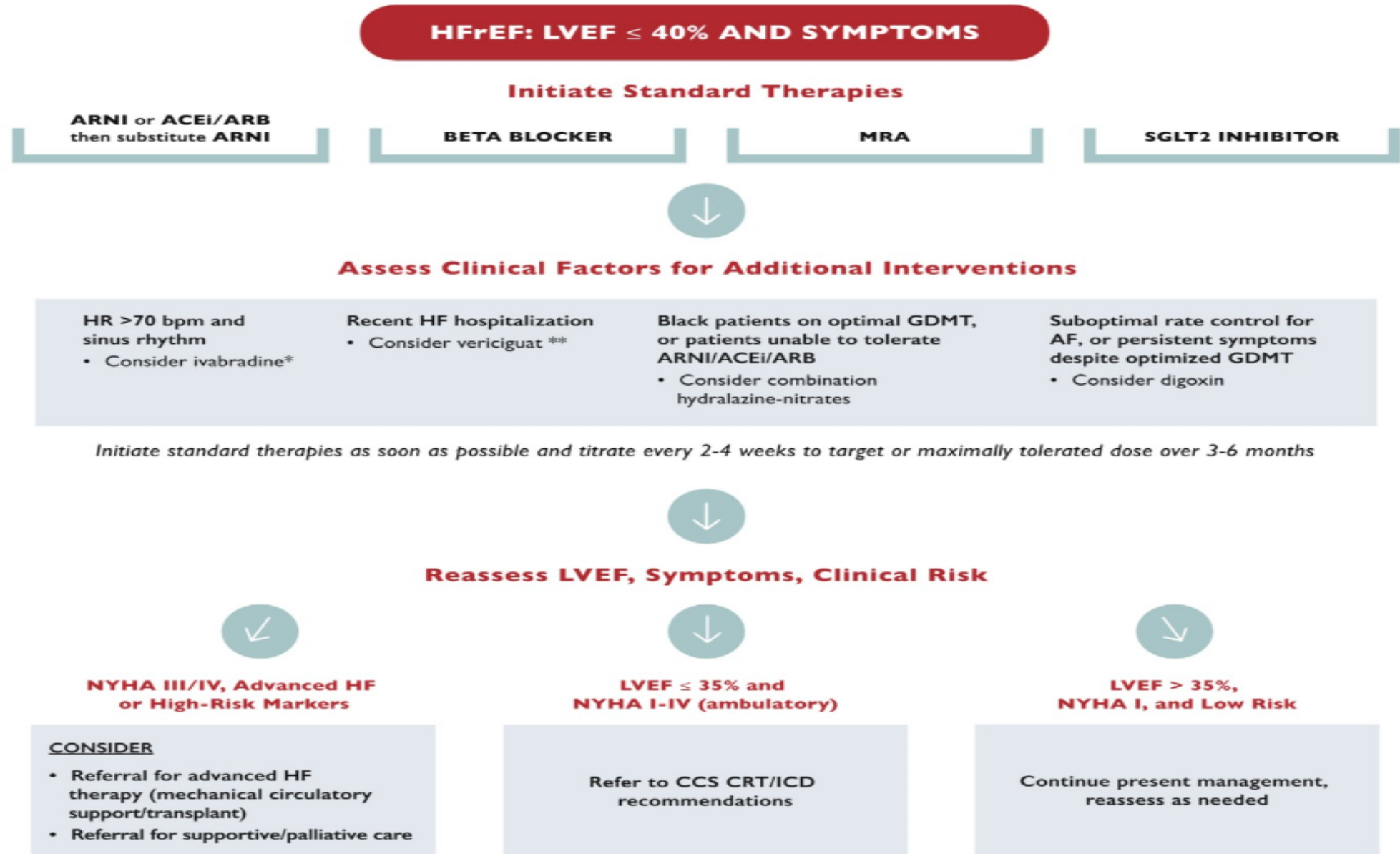
Recommandations américaines pour le traitement de l'IC à FE réduite : les ARNI privilégiés



Recommandations canadiennes pour le traitement de l'IC à FE réduite : très proche de l'ESC

TREAT COMORBIDITIES PER CCS HF RECOMMENDATIONS (INCL. AF, FUNCTIONAL MR, IRON DEF, CKD, DM)

DIURETICS TO RELIEVE CONGESTION (TITRATED TO MINIMUM EFFECTIVE DOSE TO MAINTAIN EUVOLEMIA)



NON-PHARMACOLOGIC THERAPIES (EDUCATION, SELF-CARE, EXERCISE)

ADVANCE CARE PLANNING AND DOCUMENTATION OF GOALS OF CARE

Points essentiels des recommandations sur l'IC en 2021

Nosologie

- ICfEmr (FE entre 41 et 49 %) $\approx$ ICfEr (FE $\leq$ 40 %)

Traitement médical

- ICfEr :
 - Débuter par ARNI pour bloquer SRA possible
 - iSGLT2 intégré au traitement de base
- ICfEmr : même traitement qu'ICfEr
- ICfEp : **iSGLT2 associé au traitement étiologique et des comorbidités**
- ICA : corriger la carence martiale si FE < 50 % comme dans ICC
consultation cardiologique à 1-2 semaines

Traitement non médicamenteux

- DAI, CRT : indications précisées
- FA : ablation des veines pulmonaires envisageable
- IM secondaire : MitraClip envisageable