Insuffisance cardiaque: Cas clinique

Leila Abid Trigui
Service de cardiologie, Sfax-Tunisie

WE ARE THE ESC

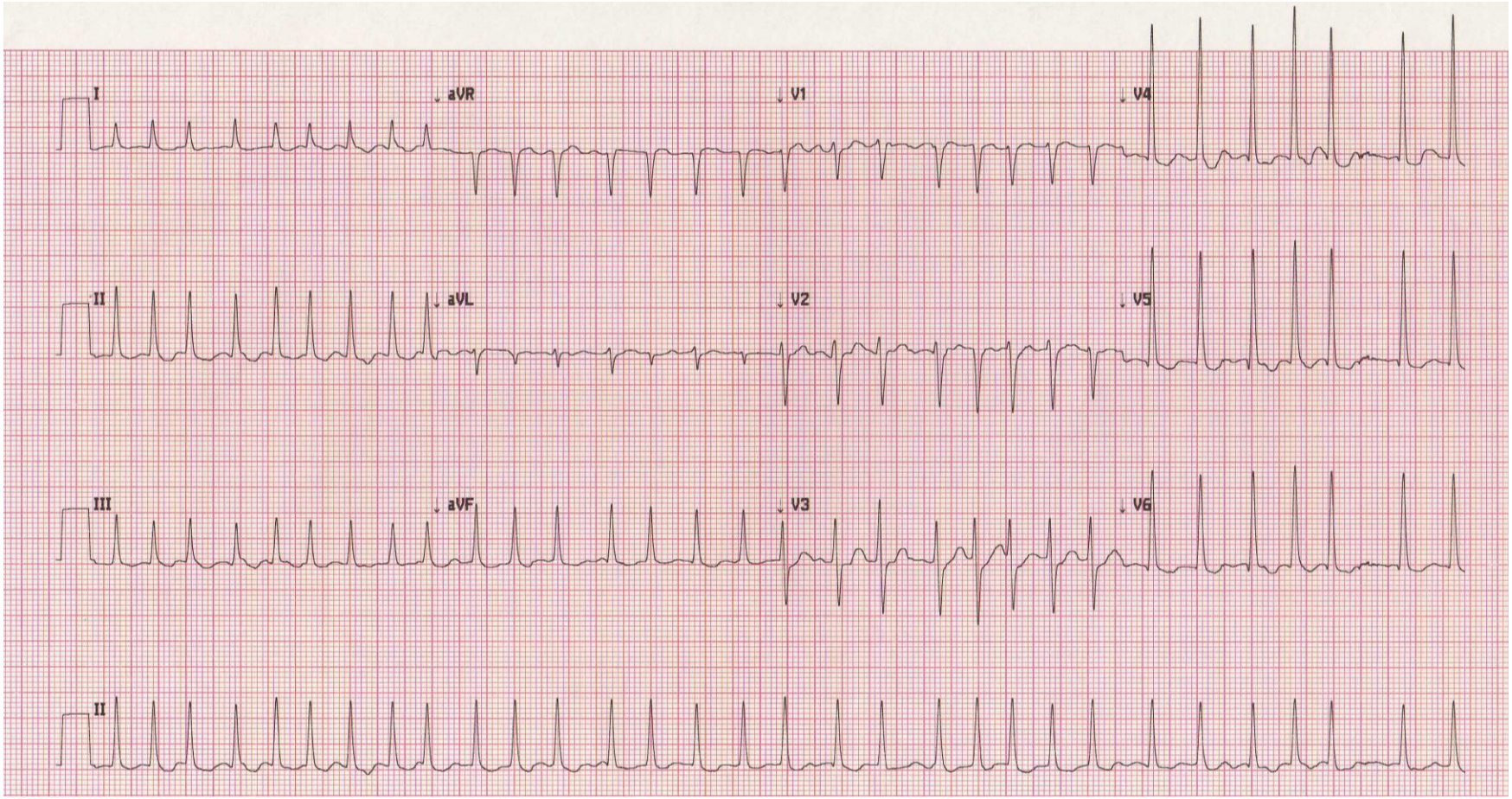
STCCCV TN

EUROPEAN SOCIETY OF CARDIOLOGY®

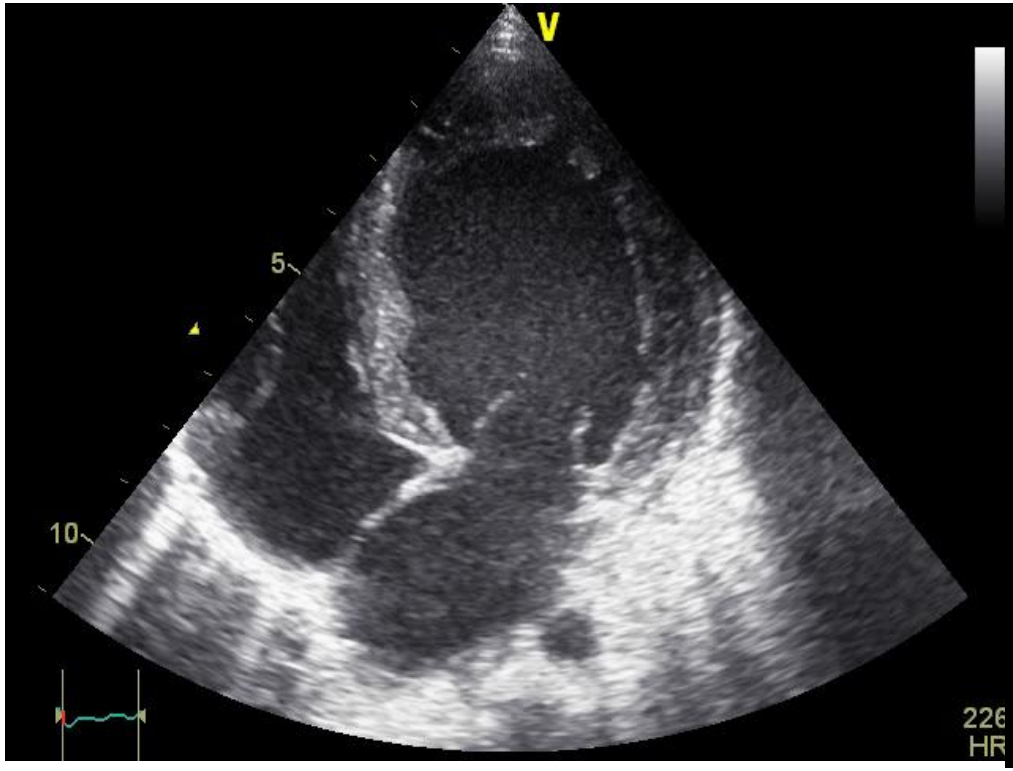
Titre

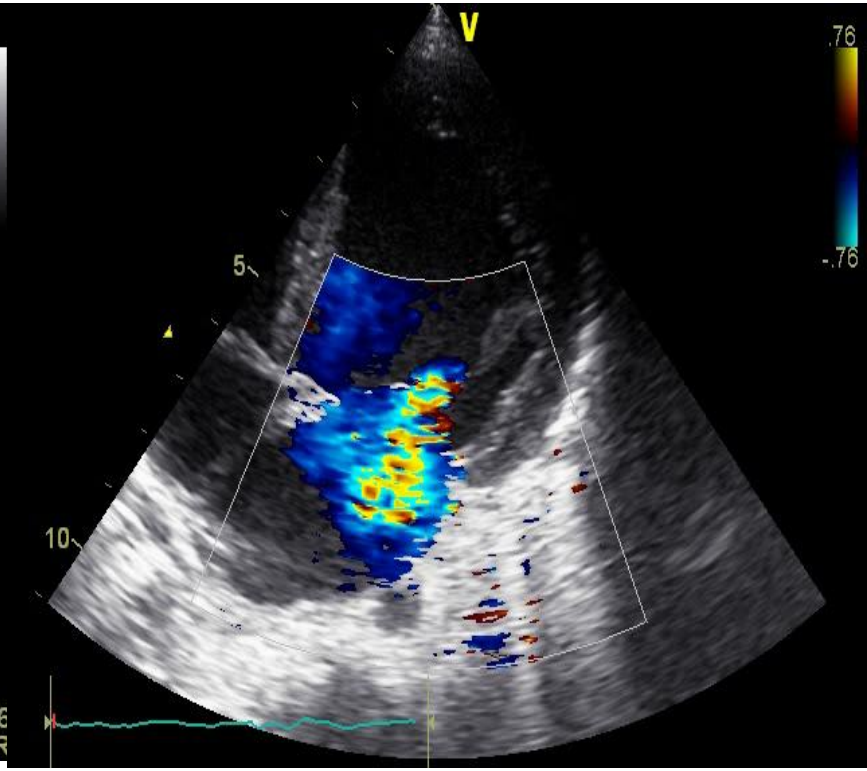
- 55 ans
- Tabac 20 PA, HTA, alcool
- Dyspnée d'effort stade III NYHA
- Prise de poids récente de 4 kg
- PA= 110/60 mmHg
- SS au FM
- OMI bilatéral, TVG, quelques râles crépitants au niveau des bases
- Traitement: hypoten/ Aspegic/ digoxine/lasilix
- Notion de prise d'AINS pour lombalgie

ECG



Echocardiographie-Doppler





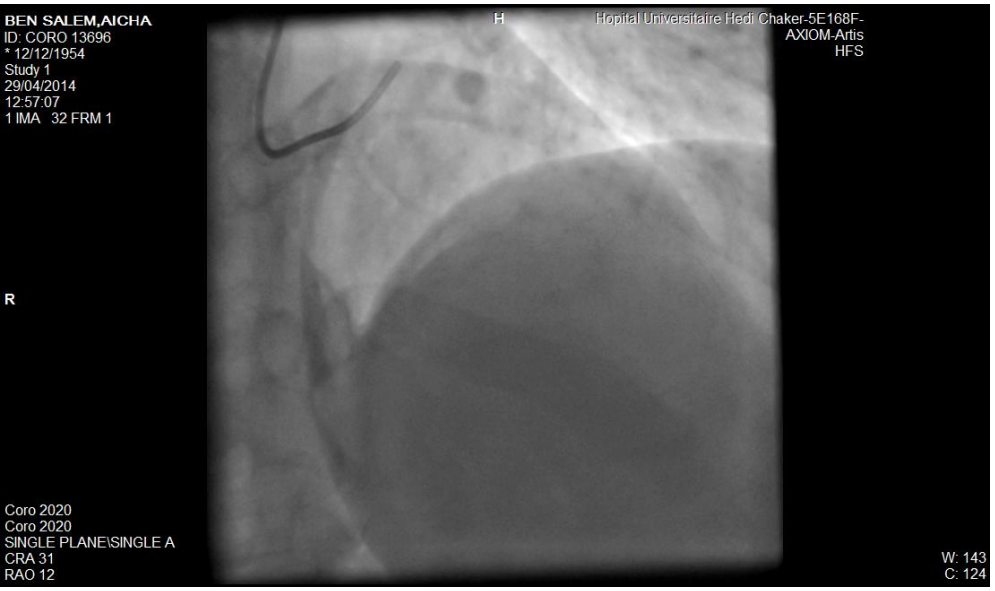
Echocardiographie-Doppler

- Cardiomyopathie dilatée à fonction systolique altérée (FEVG=25%)
- Elévation des PRVG
- PAPS à 55 mmHg
- IM secondaire significative

Biologie

- Clearance créatinine: 52 ml/min
- Nt-proBNP= 2000 pg/mL
- Hémoglobine=11g/dl
- K+=4 mmol/l

Coronarographie: nomale



Diagnostic?

European Heart Journal (2016) **37**, 2129–2200
doi:10.1093/eurheartj/ehw128

ESC GUIDELINES

Nouveauté

2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure

The Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC)

Developed with the special contribution of the Heart Failure Association (HFA) of the ESC

Table 3.1 Definition of heart failure with preserved (HFpEF), mid-range (HFmrEF) and reduced ejection fraction (HFrEF)

Type of HF		HFrEF	HFmrEF	HFpEF
CRITERIA	1	Symptoms ± Signs[a]	Symptoms ± Signs[a]	Symptoms ± Signs[a]
	2	LVEF <40%	LVEF 40–49%	LVEF ≥50%
	3	–	1. Elevated levels of natriuretic peptides[b]; 2. At least one additional criterion: a. relevant structural heart disease (LVH and/or LAE), b. diastolic dysfunction (for details see Section 4.3.2).	1. Elevated levels of natriuretic peptides[b]; 2. At least one additional criterion: a. relevant structural heart disease (LVH and/or LAE), b. diastolic dysfunction (for details see Section 4.3.2).

BNP = B-type natriuretic peptide; HF = heart failure; HFmrEF = heart failure with mid-range ejection fraction; HFpEF = heart failure with preserved ejection fraction; HFrEF = heart failure with reduced ejection fraction; LAE = left atrial enlargement; LVEF = left ventricular ejection fraction; LVH = left ventricular hypertrophy; NT-proBNP = N-terminal pro-B type natriuretic peptide.
[a]Signs may not be present in the early stages of HF (especially in HFpEF) and in patients treated with diuretics.
[b]BNP >35 pg/ml and/or NT-proBNP >125 pg/mL.

STCCCV TN

EUROPEAN SOCIETY OF CARDIOLOGY®

Prise en charge thérapeutique?

Objectifs de la prise en charge des patients IC à FEVG altérée (FEVG < 40%): *HF rEF*

- Améliorer les symptômes
- Diminuer le nombre d'hospitalisations
- Améliorer la qualité de vie
- Améliorer le Pronostic
- Diminuer la mortalité

Principes du traitement

Pronostic

- IEC-ARAII
- Bêtabloquants
- Antialdostérone
- Ivabradine
- sacubitril and valsartan (Entresto)

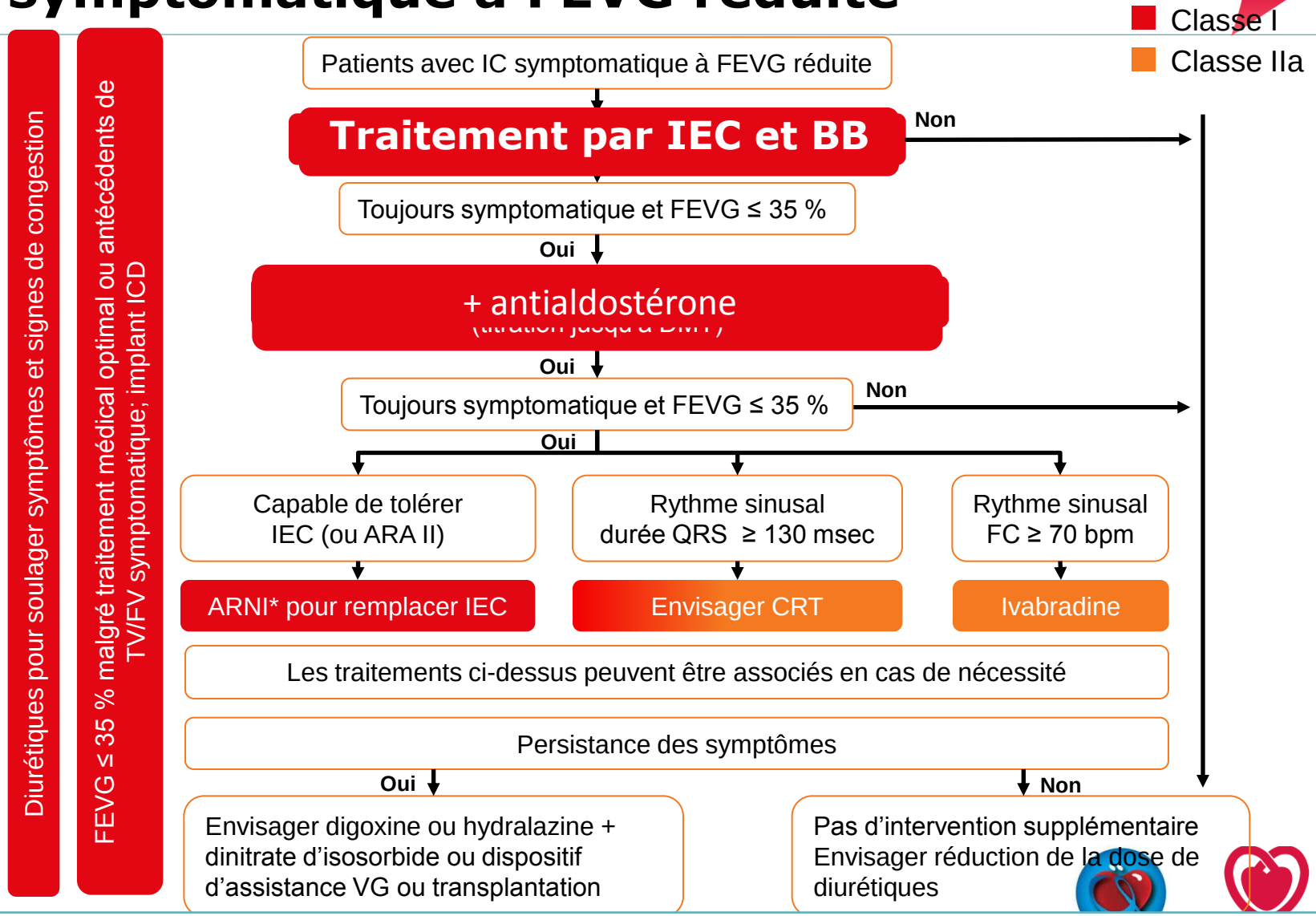
Symptômes

- Diurétiques de l'anse
- Digoxine

Quel arbre décisionnel proposé pour le traitement de l'IC 'HFrEF' en 2016 ?

WE ARE THE ESC
STCCCV TN
EUROPEAN SOCIETY OF CARDIOLOGY®

Traitement de l'insuffisance cardiaque symptomatique à FEVG réduite



Patients symptomatiques avec FEVG altérée

IEC + BB *(doses optimales / maximales tolérées)*

Patients encore symptomatiques avec FEVG altérée ≤ 35%

Anti- aldostérone *(doses maximales tolérées)*

Classe I

Classe IIa

STCCCV TN

EUROPEAN SOCIETY OF CARDIOLOGY®

IEC *incontournable* +++ mais à quelle dose?

- Initiation du ttt et précautions:

Produit	Dose départ	Dose d'entretien
Captopril 25/50(lopril*)	6.25mg*3/j	50mg*3/j
Enalapril(angiotec*)	2.5mg	10mg*2/j
Perindopril(coversyl*)	2.5 mg/j	5 à 10 mg/j
Ramipril/2.5/5/10(triatec*)	1.25-2.5mg	10 mg/j
Trandolapril (odrik*)	1mg/j	4mg/j

Doses de départ et d'entretien des IEC qui ont été approuvées pour le ttt de l'IC

Les Bêta bloquants recommandés dans l'insuffisance cardiaque

Les **4** B Bloquants indiqués dans l'IC ont une efficacité similaire en terme d
Morbi-mortalité

BB-	1ère dose (mg)	Augmentations(mg/j)	Dose cible(mg/j)	Période de titration
Bisoprolol (2.5/5/10) (1 prise/j) 'cardensiel*)	1.25	2.5, 3.75, 5,7.5, 10	10	Semaines-mois
Métoprololsuccinate CR	12.5/25	25, 50, 100, 200	200	Semaines-mois
Carvédilol (Karvex*) (6.25/12/25) (2 prises/j)	3.125	6.25, 12.5, 25, 50	50	Semaines-mois
Nébivolol (5) (1 prise/j) (nébilet*)	1.25	2.5, 5, 10	10	Semaines-mois

Dose de début, dose cible, et schéma de titration des BB- selon leur emploi dans de vastes et récentes études contrôlées

Notre Patient?

- **Diurétique: Lasilix**
- **Arrêt Hypoten ➡ β bloquant de l'IC: bisoprolol$_{2.5}$ 1c/j**
- **+ IEC: Ramipril$_{5}$ 1c/j**
- **+ Aldactone: 25 mg/j** $CHA_2DS_2VAS_C$=2
- **AC/FA: *anticoagulation:**
- ***Digoxine arrêtée**

European Heart Journal (2012) 31, 2369–2429
doi:10.1093/eurheartj/ehq278

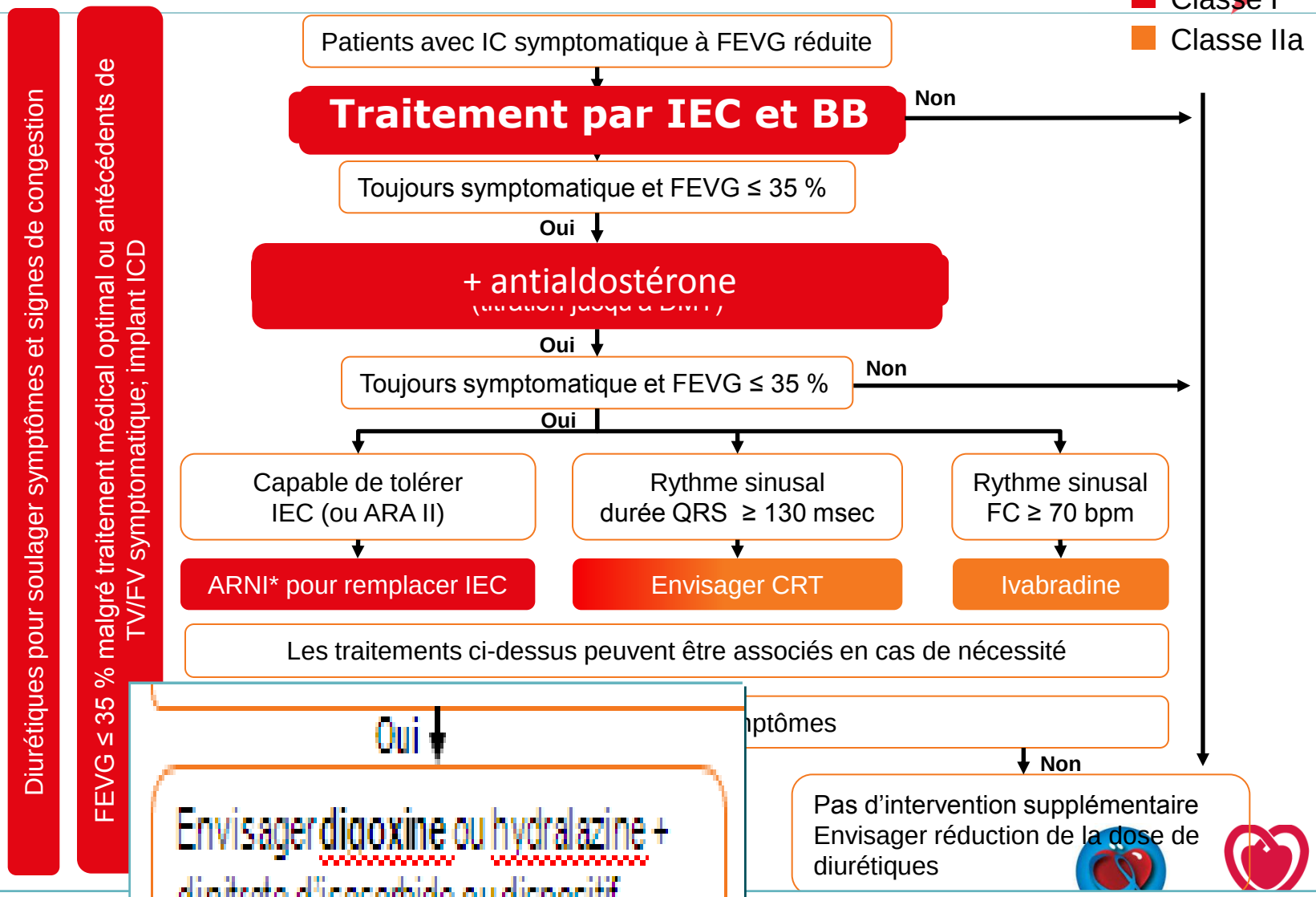
Guidelines for the management of atrial fibrillation

Score CHA2DS2-VASc		
Lettre	Caractéristique	Points
C (congestive heart failure/ LV dysfunction)	Insuffisance cardiaque congestive/ dysfonction du ventricule gauche	1
H (hypertension)	HTA	1
A2 (age ≥ 75)	Age > 75 ans	2
D (diabetes mellitus)	Diabète	1
S2 (stroke/TIA/thromboembolism)	AVC/AIT/événement thrombo-embolique	2
V (vascular disease)	Maladie vasculaire (IDM, athérome, MV périphérique)	1
A (age 65-74)	Age compris entre 65 et 74 ans	1
Sc (sex category [female])	Sexe féminin	1

les facteurs de risque thrombotiques basés sur le risque de

$CHA_2DS_2VAS_C$

Traitement de l'insuffisance cardiaque symptomatique à FEVG réduite



Patients symptomatiques avec FEVG altérée

IEC + BB *(doses optimales / maximales tolérées)*

Patients encore symptomatiques avec FEVG altérée ≤ 35%

Anti- aldostérone *(doses maximales tolérées)*

Patients encore symptomatiques avec FEVG altérée ≤ 35%

Classe I

Classe IIa

Patient encore symptomatique: Que faire?

- DE II
- Fc=80 bpm
- PA=100/55 mmHg

Bonne tolérance des IEC (ARA II)

RS, QRS ≥ 130 ms

RS, FC≥ 70 bpm

Switch ARNI

CRT

Ivabradine

Encore symptomatique, symptômes résistants

Diurétiques à la phase congestive

DAI si FEVG < 35%, TV/ FV

Autres ttt: digoxine, assistance VG, transplantation cardiaque

STCCCV TN

EUROPEAN SOCIETY OF CARDIOLOGY®

Première alternative: ivabradine?

Nouveauté

2016

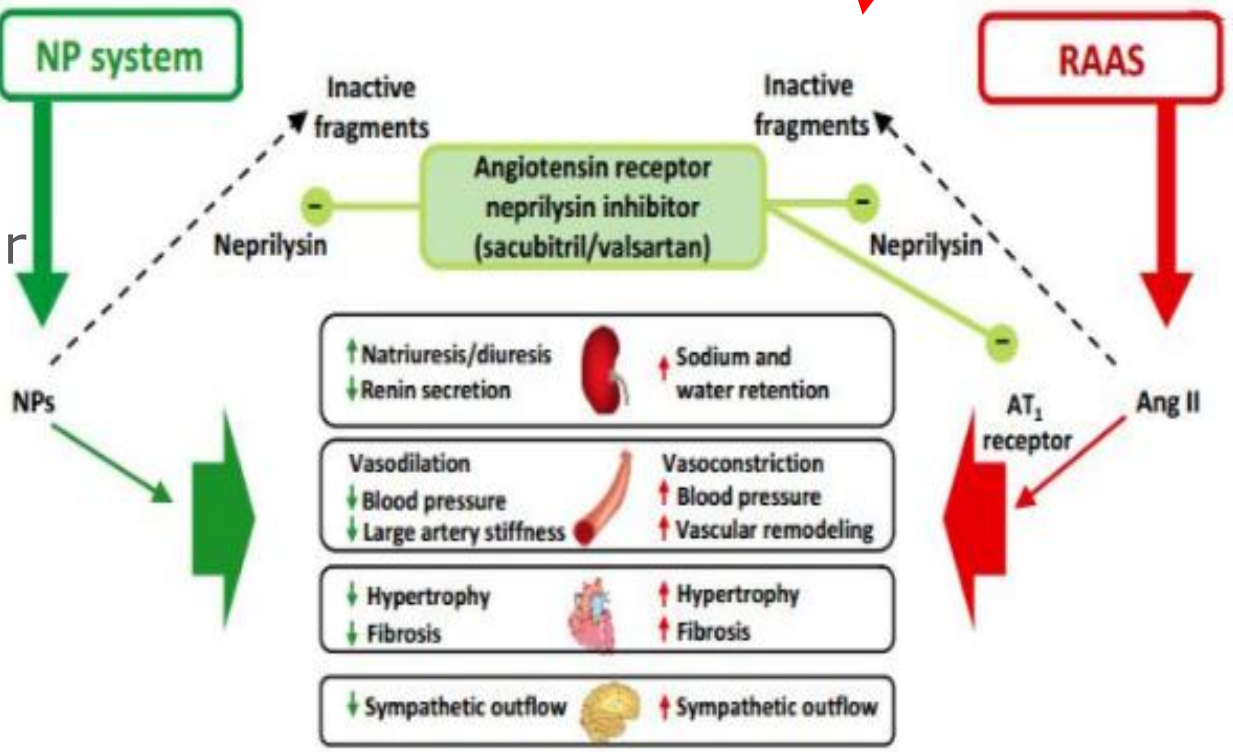
If-channel inhibitor			
Ivabradine should be considered to reduce the risk of HF hospitalization and cardiovascular death in symptomatic patients with LVEF ≤35%, in sinus rhythm and a resting heart rate ≥70 bpm despite treatment with an evidence-based dose of beta-blocker (or maximum tolerated dose below that), ACE-I (or ARB), and an MRA (or ARB).	IIa	B	180
Ivabradine should be considered to reduce the risk of HF hospitalization and cardiovascular death in symptomatic patients with LVEF ≤35%, in sinus rhythm and a resting heart rate ≥70 bpm who are unable to tolerate or have contra-indications for a beta-blocker. Patients should also receive an ACE-I (or ARB) and an MRA (or ARB).	IIa	C	181

Deuxième alternative: ARNI: LCZ 696?

Nouveauté

- **Association de :**
  - Valsartan (ARA2)
  - Sacubitril (Inhibiteur de la Néprilysine)

- **2 actions associées :**
  - Blocage du SRAA
  - Inhibe la dégradation du BNP



NP, natriuretic peptides; RAAS, renin-angiotensin-aldosterone system

European Heart Journal (2016) **37**, 2129–2200
doi:10.1093/eurheartj/ehw128

2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure

Angiotensin receptor neprilysin inhibitor		
Sacubitril/valsartan is recommended as a replacement for an ACE-I to further reduce the risk of HF hospitalization and death in ambulatory patients with HFrEF who remain symptomatic despite optimal treatment with an ACE-I, a beta-blocker and an MRA[e]	I	B

[f]With an elevated plasma natriuretic peptide level (BNP ≥ 150 pg/mL or plasma NT-proBNP ≥ 600 pg/mL, or if HF hospitalization with 12 months plasma BNP ≥ 100 pg/mL or plasma NT-proBNP ≥ 400 pg/mL). [g]In doses equivalent to enalapril 10 mg b.i.d. [h]With a hospit

Pas encore d'AMM en Tunisie

STCCCV TN

EUROPEAN SOCIETY OF CARDIOLOGY®

3ième alternative: resynchronisation?

2016

Recommendations for cardiac resynchronization therapy implantation in patients with heart failure

Recommendations	Class [a]	Level [b]
CRT is recommended for symptomatic patients with HF in sinus rhythm with a QRS duration ≥150 msec and LBBB QRS morphology and with LVEF ≤35% despite OMT in order to improve symptoms and reduce morbidity and mortality.	I	A
CRT is recommended for symptomatic patients with HF in sinus rhythm with a QRS duration of 130–149 msec and LBBB QRS morphology and with LVEF ≤35% despite OMT in order to improve symptoms and reduce morbidity and mortality.	I	B
CRT may be considered for symptomatic patients with HF in sinus rhythm with a QRS duration of 130–149 msec and non-LBBB QRS morphology and with LVEF ≤35% despite OMT in order to improve symptoms and reduce morbidity and mortality.	IIb	B
CRT rather than RV pacing is recommended for patients with HFrEF regardless of NYHA class who have an indication for ventricular pacing and high degree AV block in order to reduce morbidity. This includes patients with AF (see Section 10.1).	I	A
CRT should be considered for patients with LVEF ≤35% in NYHA Class III–IV[d] despite OMT in order to improve symptoms and reduce morbidity and mortality, if they are in AF and have a QRS duration ≥130 msec provided a strategy to ensure bi-ventricular capture is in place or the patient is expected to return to sinus rhythm.	IIa	B
Patients with HFrEF who have received a conventional pacemaker or an ICD and subsequently develop worsening HF despite OMT and who have a high proportion of RV pacing may be considered for upgrade to CRT. This does not apply to patients with stable HF.	IIb	B
CRT is contra-indicated in patients with a QRS duration < 130 msec.	III	A

3ième alternative: resynchronisation?

Notre Patient:

- AC/FA
- Durée QRS: 110 ms
- Pas de BBG

3ième alternative: resynchronisation?

2016

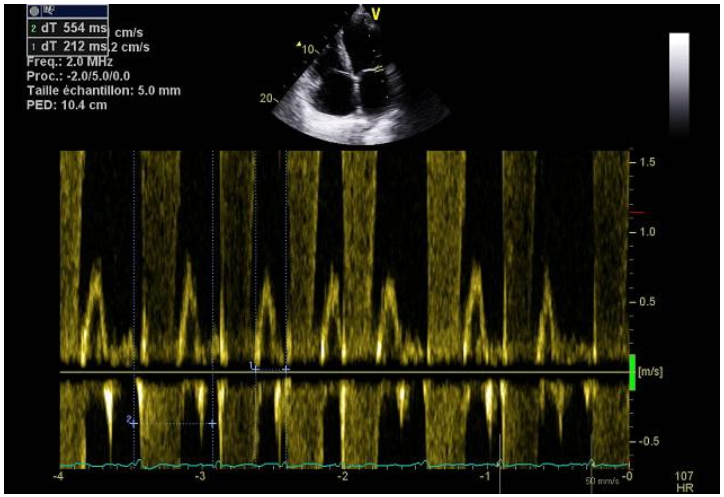
Recommendations for cardiac resynchronization therapy implantation in patients with heart failure

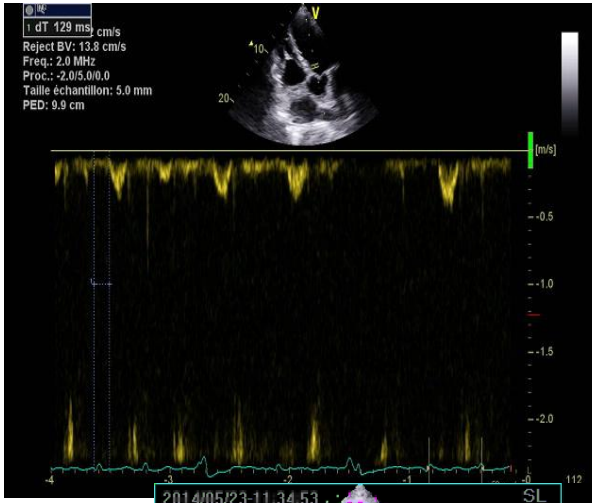
Recommendations	Class [a]	Level [b]
CRT is recommended for symptomatic patients with HF in sinus rhythm with a QRS duration ≥150 msec and LBBB QRS morphology and with LVEF ≤35% despite OMT in order to improve symptoms and reduce morbidity and mortality.	I	A
CRT should be considered for symptomatic patients with HF in sinus rhythm with a QRS duration ≥150 msec and non-LBBB QRS morphology and with LVEF ≤35% despite OMT in order to improve symptoms and reduce morbidity and mortality.	IIa	B
CRT is recommended for symptomatic patients with HF in sinus rhythm with a QRS duration of 130–149 msec and LBBB QRS morphology and with LVEF ≤35% despite OMT in order to improve symptoms and reduce morbidity and mortality.	I	B
CRT may be considered for symptomatic patients with HF in sinus rhythm with a QRS duration of 130–149 msec and non-LBBB QRS morphology and with LVEF ≤35% despite OMT in order to improve symptoms and reduce morbidity and mortality.	IIb	B
CRT should be considered for patients with LVEF ≤35% in NYHA Class III–IV[d] despite OMT in order to improve symptoms and reduce morbidity and mortality, if they are in AF and have a QRS duration ≥130 msec provided a strategy to ensure bi-ventricular capture is in place or the patient is expected to return to sinus rhythm.	IIa	B
CRT is contra-indicated in patients with a QRS duration < 130 msec.	III	A

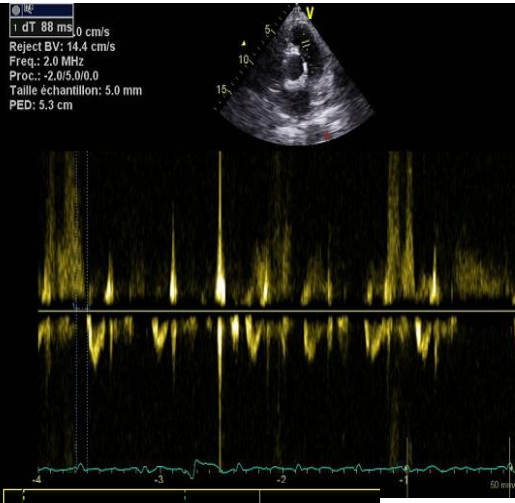
Etude asynchronisme à l'écho: asynchronisme manifeste

Asynchronisme AV

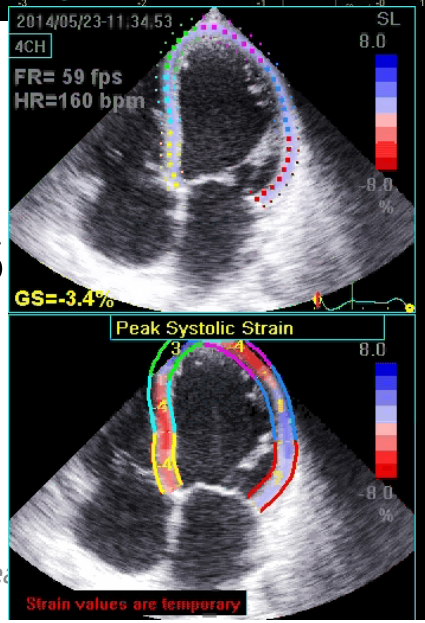
Asynchronisme VV

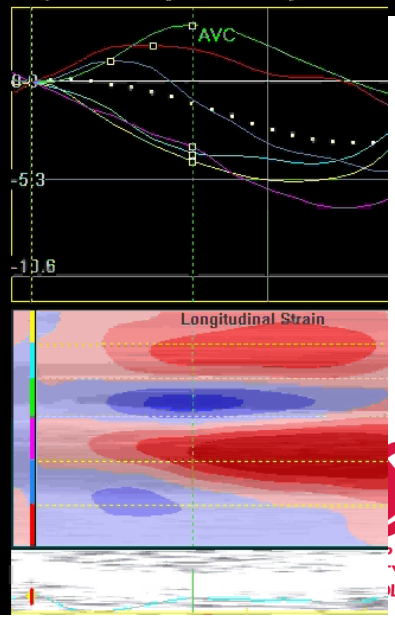






Pas de place:Largeur QRS





Ce qui reste pour notre patient?

- **Digoxine: mais insuffisance rénale!!!**

Y-a-il une place au défibrillateur?

Recommendations for implantable cardioverter-defibrillator in patients with heart failure

Recommendations	Class [a]	Level [b]
Secondary prevention An ICD is recommended to reduce the risk of sudden death and all-cause mortality in patients who have recovered from a ventricular arrhythmia causing haemodynamic instability, and who are expected to survive for >1 year with good functional status.	I	A
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), and an LVEF ≤35% despite ≥3 months of OMT, provided they are expected to survive substantially longer than one year with good functional status, and they have:		
• IHD (unless they have had an MI in the prior 40 days – see below).	I	A
• DCM.	I	B
ICD implantation is not recommended within 40 days of an MI as implantation at this time does not improve prognosis.	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 ventricular assist device, or cardiac transplantation.	III	C
Patients should be carefully evaluated by an experienced cardiologist before generator replacement, because management goals and the patient's needs and clinical status may have changed.	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.	IIb	C

Et l'IM Secondaire?

Indications for mitral valve surgery in secondary mitral regurgitation

	Class	Level
Surgery is indicated in patients with severe MR undergoing CABG, and LVEF > 30%.	I	C
Surgery should be considered in patients with moderate MR undergoing CABG.	IIa	C
Surgery should be considered in symptomatic patients with severe MR, LVEF < 30%, option for revascularization, and evidence of viability.	IIa	C
Surgery may be considered in patients with severe MR, LVEF > 30%, who remain symptomatic despite optimal medical management (including CRT if indicated) and have low comorbidity, when revascularization is not indicated.	IIb	C

European Heart Journal 2012 - doi:10.1093/eurheartj/ehs109 & European Journal of Cardio-Thoracic Surgery 2012 - doi:10.1093/ejcts/ezs455).

EACTS

EUROPEAN SOCIETY OF CARDIOLOGY®

Et l'IM Secondaire?

LV function, who cannot be revascularized or who present with cardiomyopathy, are questionable. Repair may be considered in selected patients if comorbidity is low, in order to avoid or postpone transplantation. In the other patients, optimal medical treatment is currently the best option, followed, in the event of failure, by extended HF treatment [cardiac resynchronization therapy (CRT); ventricular assist devices; cardiac restraint devices; heart transplantation].

The percutaneous mitral clip procedure may be considered in patients with symptomatic severe secondary MR despite optimal medical therapy (including CRT if indicated), who fulfil the echo criteria of eligibility, are judged inoperable or at high surgical risk by a team of cardiologists and cardiac surgeons, and who have a life expectancy greater than 1 year (recommendation class IIb, level of evidence C).

There is continuing debate regarding the management of moderate ischaemic MR in patients undergoing CABG. In such cases, valve repair is preferable. In patients with low EF, mitral valve

Specific issues in MS are as follows:

- Echocardiography is the main method used to assess the severity and consequences of MS, as well as the extent of anatomic lesions.

  Valve area should be measured using planimetry and the pressure half-time method, which are complementary. Planimetry, when it is feasible, is the method of choice, in particular immediately after PMC. Continuity equation and proximal isovelocity could be used when additional assessment is needed. Measurements of mean transvalvular gradient, calculated using Doppler velocities, are highly rate- and flow-dependent, but are useful to check consistency in the assessment of severity, particularly in patients in sinus rhythm. MS does not usually have clinical consequences at rest when valve area is $>1.5\ cm^2$ (*Table 4*).[15]

  A comprehensive assessment of valve morphology is important for the treatment strategy. Scoring systems have been developed to help assess suitability, taking into account valve thickening, mobility, calcification, subvalvular deformity, and

Paramètres du suivi?

Suivi minimal de l'insuffisance cardiaque systolique

	Stade I NYHA	Stade II NYHA	Stade III NYHA
Fréquence des consultations en cas d'ICS stable	• Médecin traitant : au moins 2 fois/an • Cardiologue : 1 fois/an	• Médecin traitant : au moins 4 fois/an • Cardiologue : 2 fois/an • Visite de contrôle technique du matériel, si dispositif de resynchronisation : 2-4 fois/an	• Médecin traitant : 4-12 fois/an • Cardiologue : 4-12 fois/an • Visite de contrôle technique du matériel, si dispositif de resynchronisation +/- DAI : 2-4
	• Infirmière, autres professionnels : selon besoins dus à état clinique, changements de comportement, etc.		
Évaluation clinique	• Activités de la vie quotidienne • Symptômes notamment dyspnée, fatigue, palpitations • Rythme cardiaque, PA, signes de rétention hydrosodée, mesure du poids		
Examens biologiques à réaliser et fréquence			
Examens complémentaires à réaliser et fréquence			
Consultations supplémentaires	• Événement intercurrent : décompensation, complication, épisode infectieux • Détérioration de l'état clinique • Consultation de pneumologie, gériatrie, néphrologie, endocrinologie si besoin		
Au décours d'une hospitalisation pour décompensation	• Consultation par le médecin traitant dans la semaine après la sortie d'hospitalisation • Consultation de contrôle par le cardiologue : 1 semaine à 2 mois après la sortie • Si état de base non atteint : consultations supplémentaires selon l'évolution		

• ***Compte-rendu de sortie***
– FEVG
– Facteur(s) décompensant(s)
– Constantes de sortie indiquées sur le document de sortie
. Poids
. PA et FC
. Ionogramme/créatininémie/urémie et BNP

• ***Ordonnances***
– Médicaments : vérifier la présence (ou motiver l'absence) d'IEC ou ARAII, de bêtabloqueurs, d'antialdostérone, des diurétiques de l'anse, etc. Consignes de titration (à indiquer sur le document de sortie)
– Vaccination antigrippale
– Ordonnance de bilan biologique à faire à J7 : iono/créat/urée (voire BNP)

2 Garder toujours le même peptide natriurétique **BNP ou NT-proBNP au cours du suivi**

HAS HAUTE AUTORITÉ DE SANTÉ
Juin 2014

Recommandation……

Table 9. Recommendations for Biomarkers in HF

Biomarker, Application	Setting	COR	LOE	References
Natriuretic peptides				
Diagnosis or exclusion of HF	Ambulatory, Acute	I	A	212, 217–223, 245–250
Prognosis of HF	Ambulatory, Acute	I	A	222, 224–229, 248, 251–258
Achieve GDMT	Ambulatory	IIa	B	230–237
Guidance for acutely decompensated HF therapy	Acute	IIb	C	259, 260
Biomarkers of myocardial injury				
Additive risk stratification	Acute, Ambulatory	I	A	238–241, 248, 253, 256–267
Biomarkers of myocardial fibrosis				
Additive risk stratification	Ambulatory	IIb	B	242–244
	Acute	IIb	A	248, 253, 256, 258–260, 262, 264–267

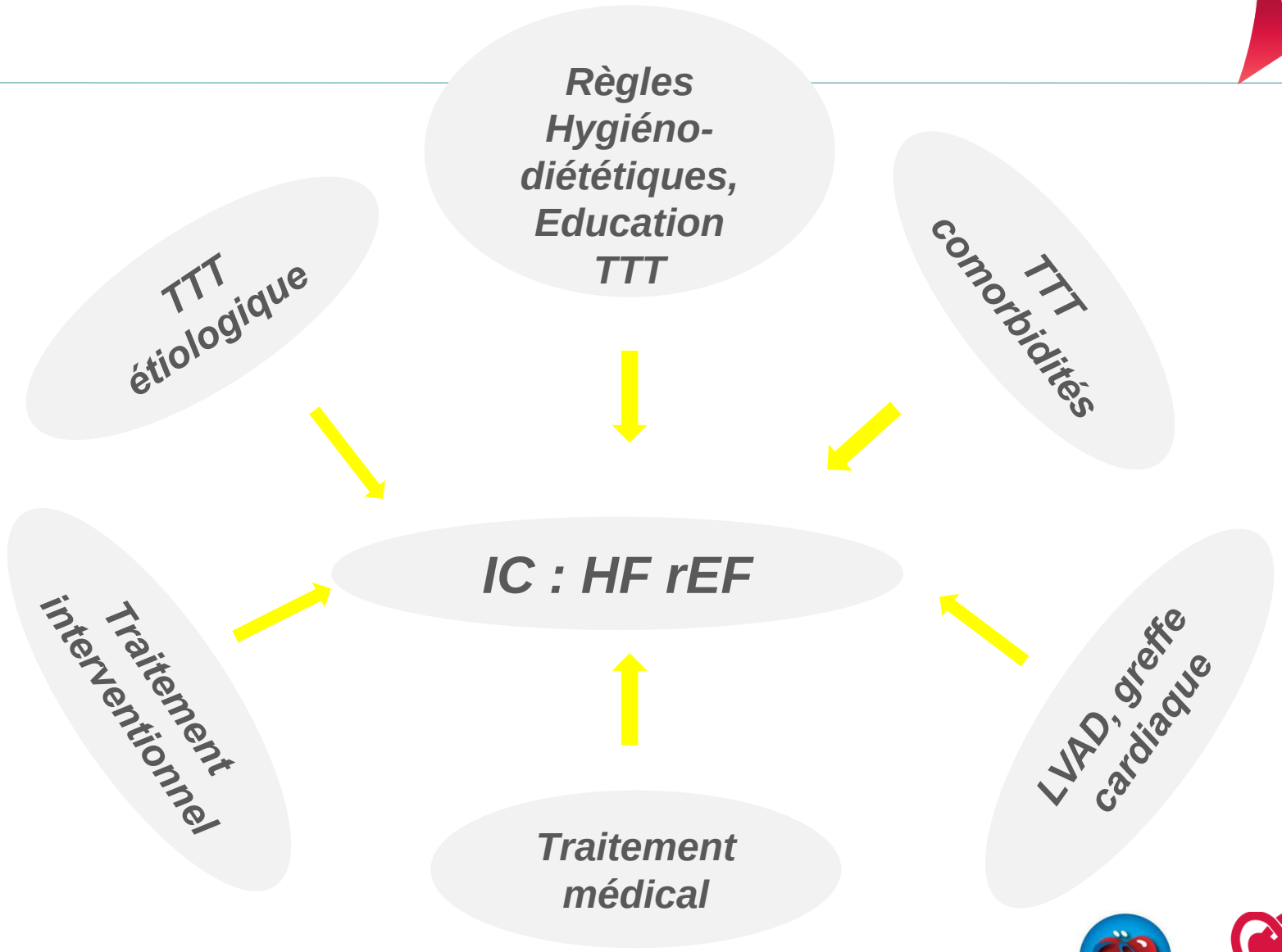
COR indicates Class of Recommendation; GDMT, guideline-directed medical therapy; HF, heart failure; and LOE, Level of Evidence.

ACCF/AHA Practice Guideline

2013 ACCF/AHA Guideline for the Management of Heart Failure

A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines

N’oubliez pas la réadaptation cardiaque!!


Règles Hygiéno-diététiques, Education TTT
TTT étiologique
TTT comorbidités
IC : HF rEF
Traitement interventionnel
LVAD, greffe cardiaque
Traitement médical

Merci

Speaker

WE ARE THE ESC
STCCCV TN
EUROPEAN SOCIETY OF CARDIOLOGY®