

# Nouvelles Recommandation 2021 ESC de la PEC de l'insuffisance cardiaque aiguë

Dr CHACORNAC le 09/12/2021

2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure  
Developed by the Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC) With the special contribution of the Heart Failure Association (HFA) of the ESC

# Conflit d'intérêt

- Présentation et Board rémunérés
  - NOVARTIS
  - ASTRAZENECA
  - VIFOR PHARMA

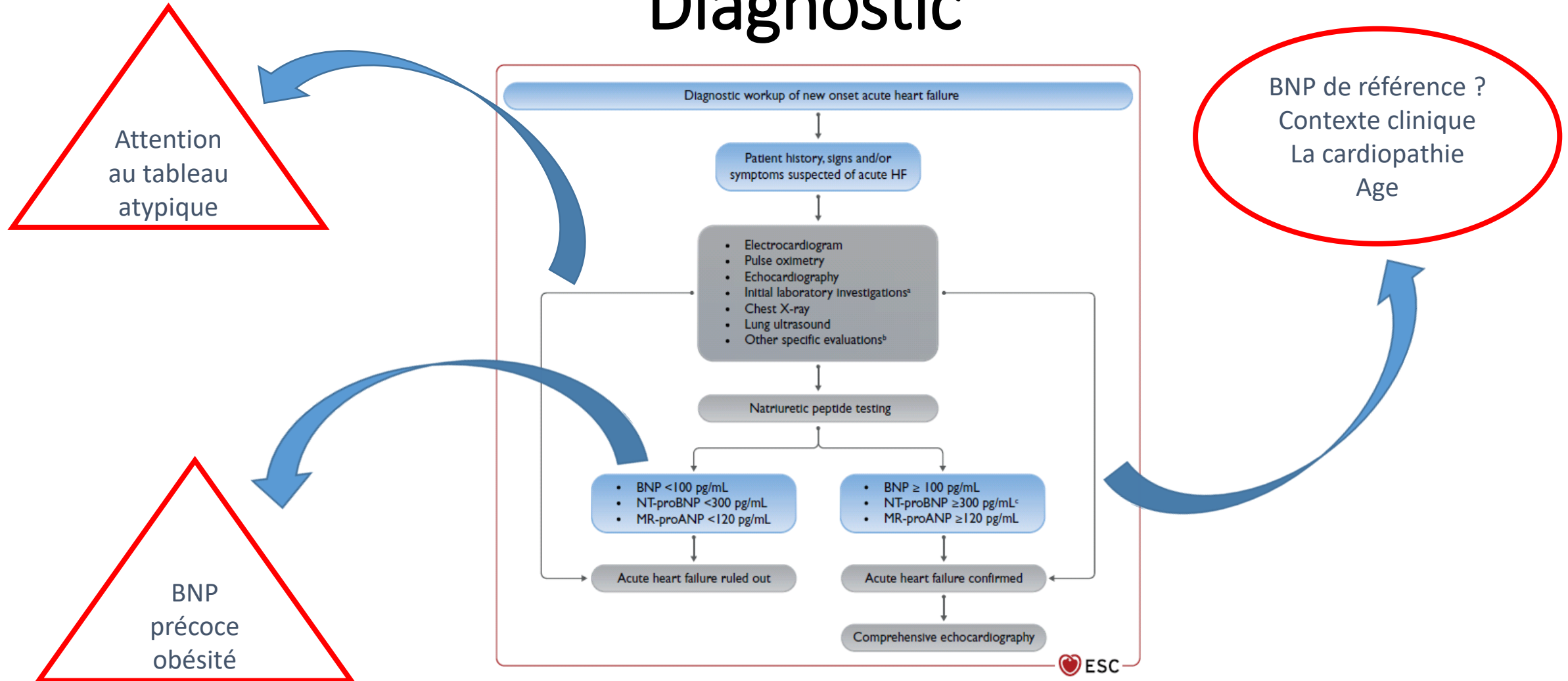
# Pourquoi ?

- Mortalité
  - hospitalière des SICA de 10%
  - Post hospitalière 15% à 6 mois
  - De 5 à 50 % en insuffisance cardiaque chronique
- Morbidité
  - Réhospitalisation
  - Qualité de vie
- Un enjeux de santé publique : 1,2 à 2 million de français, 160 000 hospitalisations, accès au soins, parcours patient
- Livre Blanc <https://www.calameo.com/books/00684574433323991b47d>

# Définition

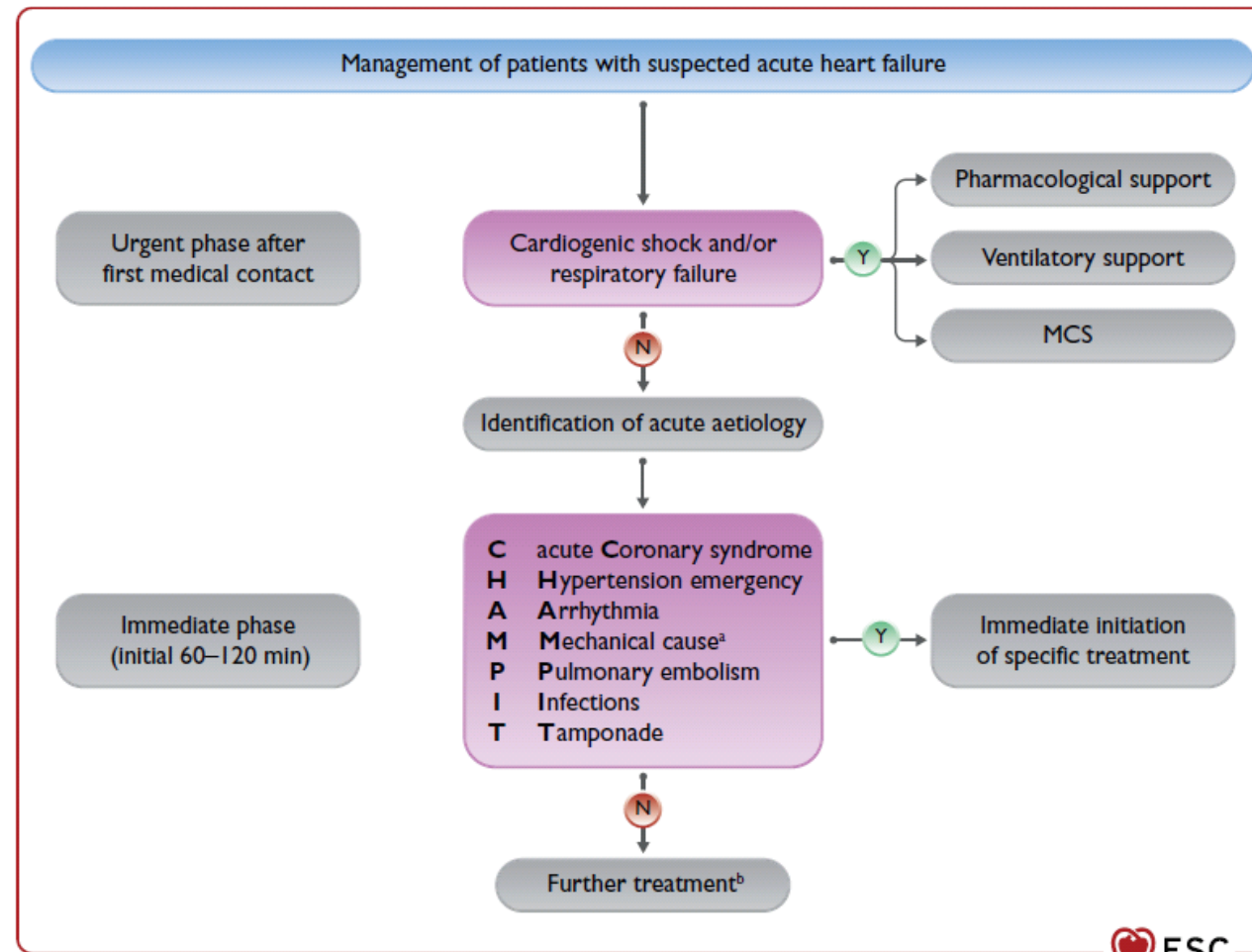
- Apparition rapide ou graduée de symptôme ou signe d'IC aboutissant à une consultation ou hospitalisation non programmées (sur une IC chronique ou de novo)
- SICA : Syndrome d'Insuffisance Cardiaque Aigue
- Problème : les présentations clinique et la population de patients sont très hétérogènes

# Diagnostic



**Figure 6** Diagnostic workup of new onset acute heart failure. ACS = acute coronary syndrome; BNP = B-type natriuretic peptide; CT = computed tomography; HF = heart failure; MR-proANP = mid-regional pro-atrial natriuretic peptide; NT-proBNP = N-terminal pro-B-type natriuretic peptide; TSH = thyroid-stimulating hormone. <sup>a</sup>Initial laboratory exams include troponin, serum creatinine, electrolytes, blood urea nitrogen or urea, TSH, liver function tests as well as D-dimer and procalcitonin when pulmonary embolism or infection are suspected, arterial blood gas analysis in case of respiratory distress, and lactate in case of hypoperfusion. <sup>b</sup>Specific evaluation includes coronary angiography, in case of suspected ACS, and CT in case of suspected pulmonary embolism. <sup>c</sup>Rule-in values for the diagnosis of acute HF: >450 pg/mL if aged <55 years, >900 pg/mL if aged between 55 and 75 years and >1800 pg/mL if aged >75 years. 433,434

# Algorithme de prise en charge d'un SICA



**Figure 12** Initial management of acute heart failure. MCS = mechanical circulatory support. <sup>a</sup>Acute mechanical cause: myocardial rupture complicating acute coronary syndrome (free wall rupture, ventricular septal defect, acute mitral regurgitation), chest trauma or cardiac intervention, acute native or prosthetic valve incompetence secondary to endocarditis, aortic dissection or thrombosis. <sup>b</sup>See Figures 7–10 for specific treatments according to different clinical presentations.

# Recommandation ESC 2016

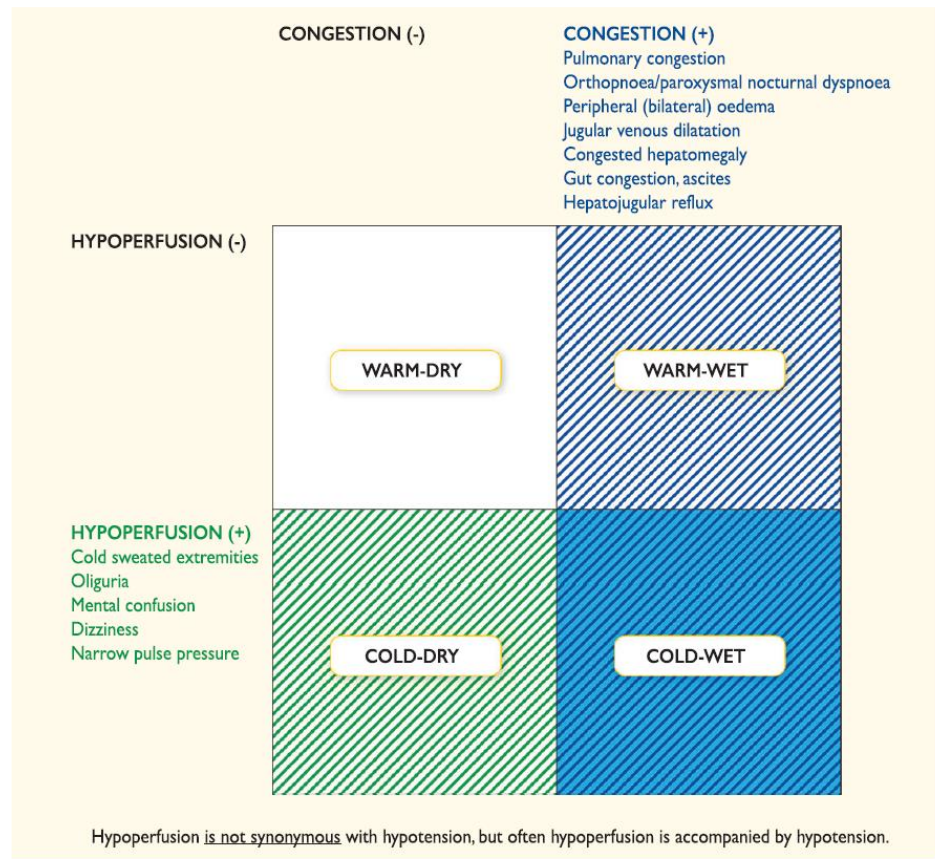


Figure 12.1 Clinical profiles of patients with acute heart failure based on the presence/absence of congestion and/or hypoperfusion

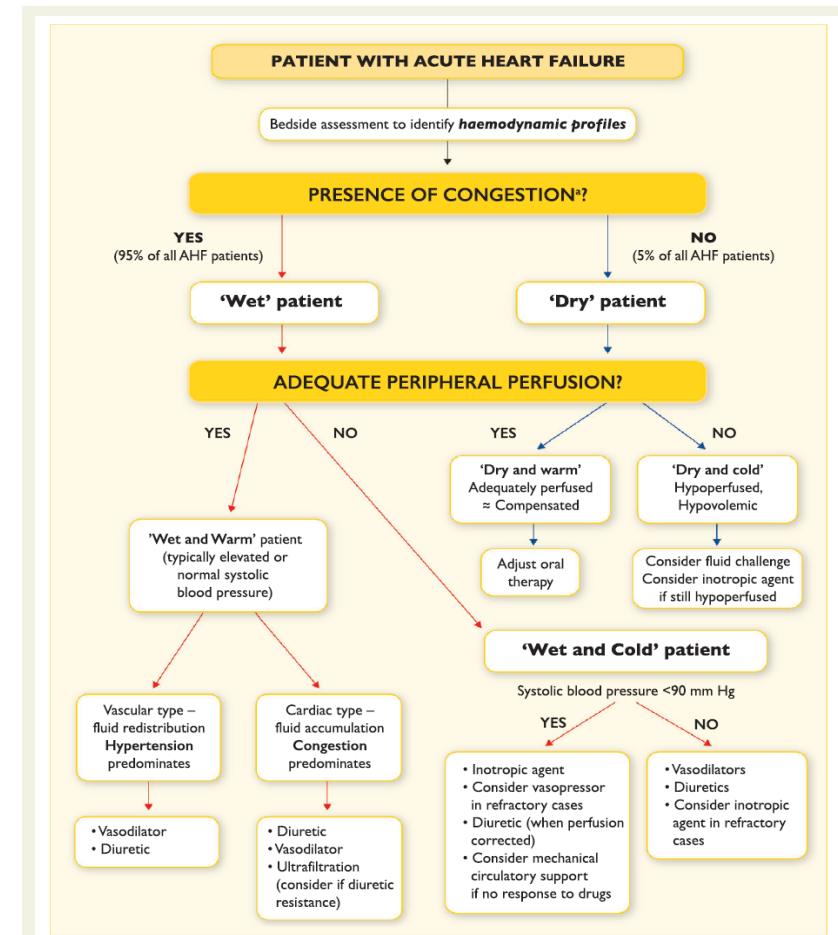
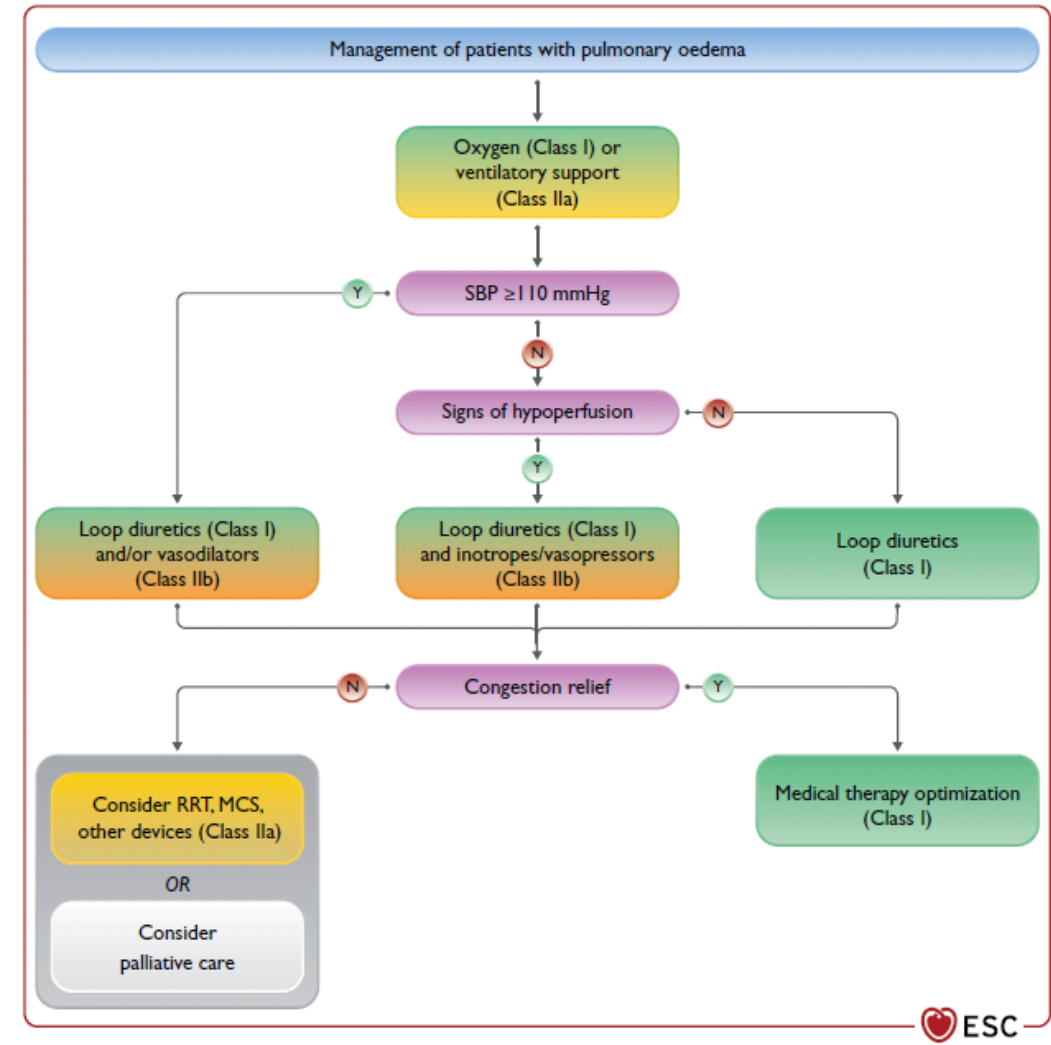
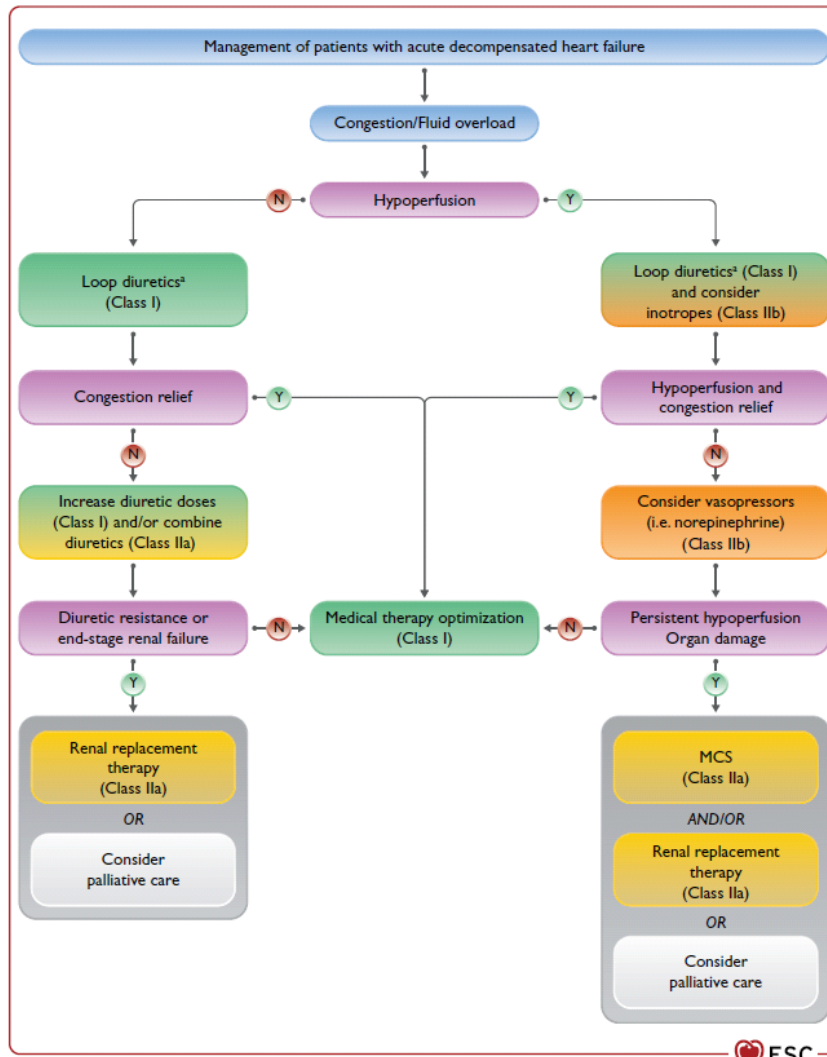


Figure 12.3 Management of patients with acute heart failure based on clinical profile during an early phase

\*Symptoms/signs of congestion: orthopnoea, paroxysmal nocturnal dyspnoea, breathlessness, bi-basilar rales, an abnormal blood pressure response to the Valsalva maneuver (left-sided); symptoms of gut congestion, jugular venous distension, hepatojugular reflux, hepatomegaly, ascites, and peripheral oedema (right-sided).

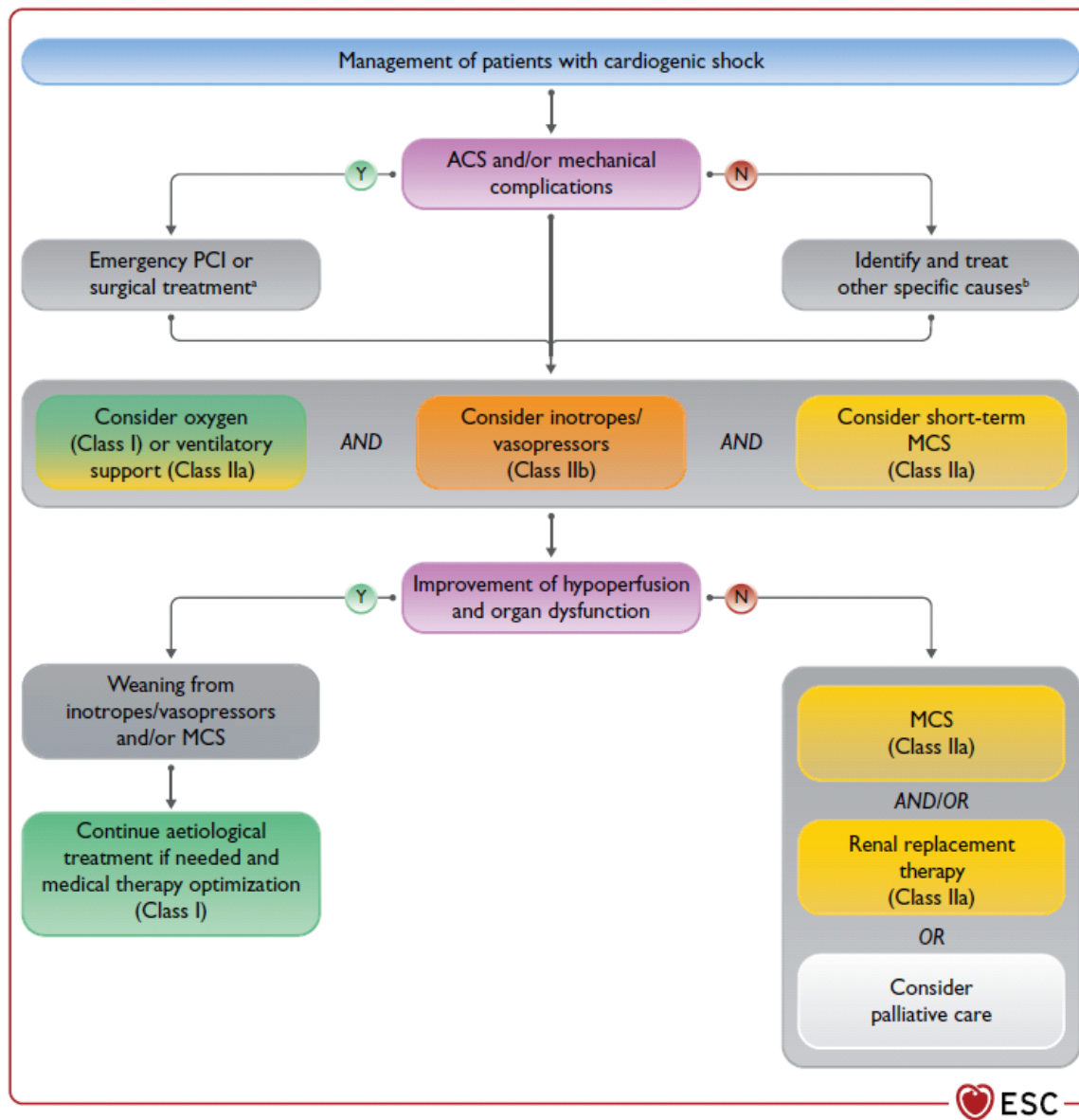
# en 2021 ... la clinique avec 4 tableaux caractéristique



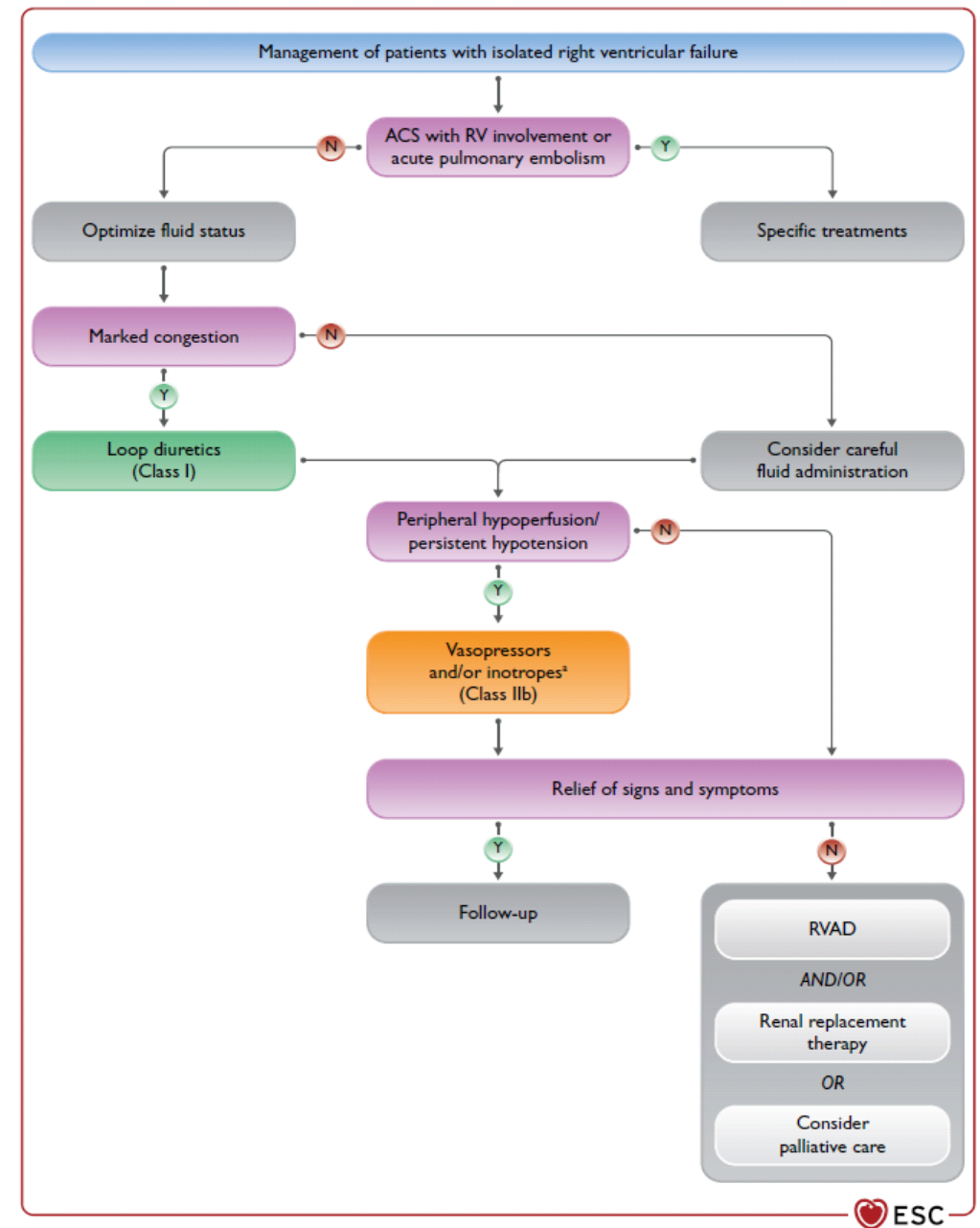
**Figure 7** Management of acute decompensated heart failure. MCS = mechanical circulatory support. <sup>a</sup>Adequate diuretic doses to relieve congestion and dose monitoring of diuresis is recommended (see Figure 13) regardless of perfusion status.

**Figure 8** Management of pulmonary oedema. MCS = mechanical circulatory support; RRT = renal replacement therapy; SBP = systolic blood pressure.





**Figure 10** Management of cardiogenic shock. ACS = acute coronary syndrome; BTT = bridge to transplantation; MCS = mechanical circulatory support; PCI = percutaneous coronary intervention. <sup>a</sup>PCI in ACS, pericardiocentesis in tamponade, mitral valve surgery in papillary muscle rupture. In case of inter-ventricular septum rupture, MCS as BTT should be considered. <sup>b</sup>Other causes include acute valve regurgitation, pulmonary embolism, infection, acute myocarditis, arrhythmia (see Figure 12).



**Figure 9** Management of right ventricular failure. ACS = acute coronary syndrome; RV = right ventricular; RVAD = right ventricular assist device. <sup>a</sup>Inotropes alone in case of hypoperfusion without hypotension.

# Les traitements dans le détail

## Recommendations for the initial treatment of acute heart failure

Recommendations	Class <sup>a</sup>	Level <sup>b</sup>
<b>Oxygen and ventilatory support</b>		
Oxygen is recommended in patients with SpO <sub>2</sub> <90% or PaO <sub>2</sub> <60 mmHg to correct hypoxaemia.	I	C
Intubation is recommended for progressive respiratory failure persisting in spite of oxygen administration or non-invasive ventilation. <sup>448</sup>	I	C
Non-invasive positive pressure ventilation should be considered in patients with respiratory distress (respiratory rate >25 breaths/min, SpO <sub>2</sub> <90%) and started as soon as possible in order to decrease respiratory distress and reduce the rate of mechanical endotracheal intubation. <sup>448</sup>	IIa	B
<b>Diuretics</b>		
Intravenous loop diuretics are recommended for all patients with AHF admitted with signs/symptoms of fluid overload to improve symptoms. <sup>145</sup>	I	C
Combination of a loop diuretic with an oral-type diuretic should be considered in patients with resistant oedema who do not respond to an increase in loop diuretic doses. <sup>145</sup>	IIa	B
<b>Vasodilators</b>		
In patients with AHF and SBP >110 mmHg, i.v. vasodilators may be considered as initial therapy to improve symptoms and reduce congestion. <sup>475–477,479,480</sup>	IIb	B

> 100ml/h ou 2.5 litre par jour

GALACTIC  
randomized clinical trial. JAMA 2019;322:2292-2302.  
ELISABETH  
randomized clinical trial. JAMA 2020;324:1948-1956

## Inotropic agents

Inotropic agents may be considered in patients with SBP <90 mmHg and evidence of hypoperfusion who do not respond to standard treatment, including fluid challenge, to improve peripheral perfusion and maintain end-organ function.<sup>387</sup>

IIb

C

Inotropic agents are not recommended routinely, due to safety concerns, unless the patient has symptomatic hypotension and evidence of hypoperfusion.<sup>387,467,478</sup>

III

C

## Vasopressors

A vasopressor, preferably norepinephrine, may be considered in patients with cardiogenic shock to increase blood pressure and vital organ perfusion.<sup>485–487</sup>

IIb

B

## Other drugs

Thromboembolism prophylaxis (e.g. with LMWH) is recommended in patients not already anticoagulated and with no contraindication to anticoagulation, to reduce the risk of deep venous thrombosis and pulmonary embolism.<sup>494,495</sup>

I

A

Routine use of opiates is not recommended unless in selected patients with severe, unrelievable pain or anxiety.<sup>488</sup>

III

C

AHF = acute heart failure; i.v. = intravenous; LMWH = low-molecular-weight heparin; PaO<sub>2</sub> = partial pressure of oxygen; SBP = systolic blood pressure; SpO<sub>2</sub> = transcutaneous oxygen saturation.

<sup>a</sup>Class of recommendation.

<sup>b</sup>Level of evidence.

### Recommendations for the use of short-term mechanical circulatory support in patients with cardiogenic shock

Recommendations	Class <sup>a</sup>	Level <sup>b</sup>
Short-term MCS should be considered in patients with cardiogenic shock as a BTR, BTD, BTB. Further indications include treatment of the cause of cardiogenic shock or long-term MCS or transplantation.	IIa	C
IABP may be considered in patients with cardiogenic shock as a BTR, BTD, BTB, including treatment of the cause of cardiogenic shock (i.e. mechanical complication of acute MI) or long-term MCS or transplantation. <sup>450</sup>	IIb	C
IABP is not routinely recommended in post-MI cardiogenic shock. <sup>500–502</sup>	III	B

BTB=bridge to bridge; BTD=bridge to decision; BTR=bridge to recovery; IABP=intra-aortic balloon pump; MCS=mechanical circulatory support; MI=myocardial infarction.

<sup>a</sup>Class of recommendation.

<sup>b</sup>Level of evidence.

# La nouveauté des Recommandations 2021 les glifozines



## Mode d'action des ISGLT2

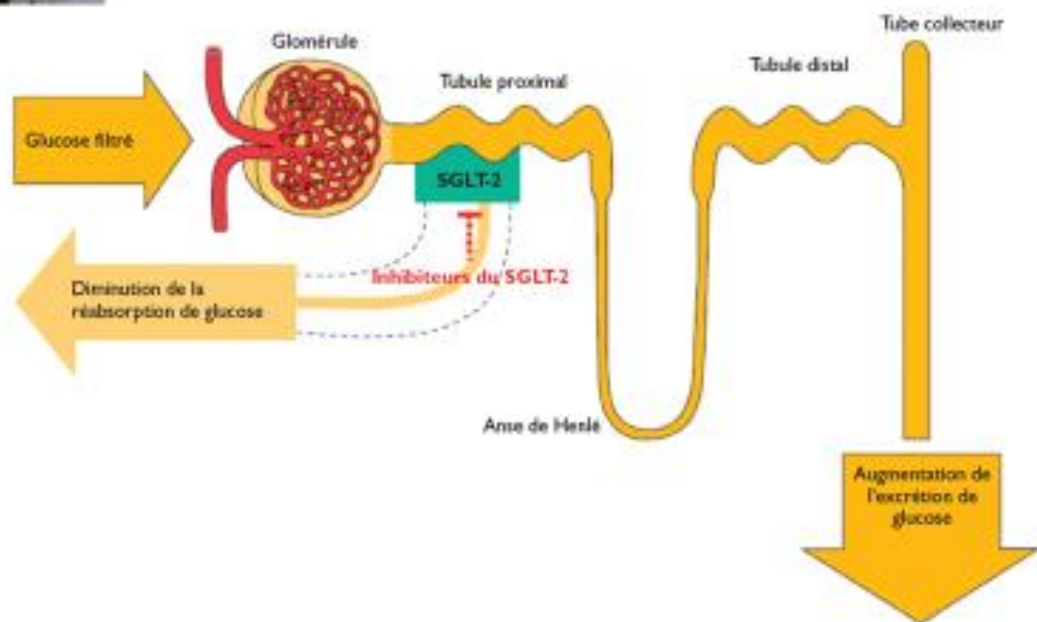


Tableau 3. Études de sécurité cardiovasculaire menées avec les iSGLT2.

Étude	Population étudiée	HbA1c initiale	Suivi médian	Principaux résultats
EMPA-REG empagliflozine	n= 7 020 Prévention secondaire 100 %	8,1 %	3,1 ans	MACE -14 % Mortalité cardiovasculaire -38 %, mortalité totale -32 % Hospitalisations pour insuffisance cardiaque -35 %
CANVAS canagliflozine	n= 10 142 Prévention secondaire 66 %	8,2 %	3,6 ans	MACE -14 % Hospitalisations pour insuffisance cardiaque -33 %
DECLARE-TIMI dapagliflozine	n= 17 160 Prévention secondaire 41 %	8,3 %	< 5 ans	↓ Critère composite « mortalité cardiovasculaire ou hospitalisations pour insuffisance cardiaque »
MACE (major adverse cardiovascular events) : décès d'origine cardiovasculaire, IDM non fatals ou AVC non fatals (critère primaire composite)				



# ISGLT2 et IC FEVG altérée

## DAPA HF pour la dapagliflozine

Inclusion : IC > 2 mois FE < 40% + Nt pro BNP > 600 ou > 900 + FA ou > 400 + Hospit < 12 mois

diabétique (40%) ou non (60%)

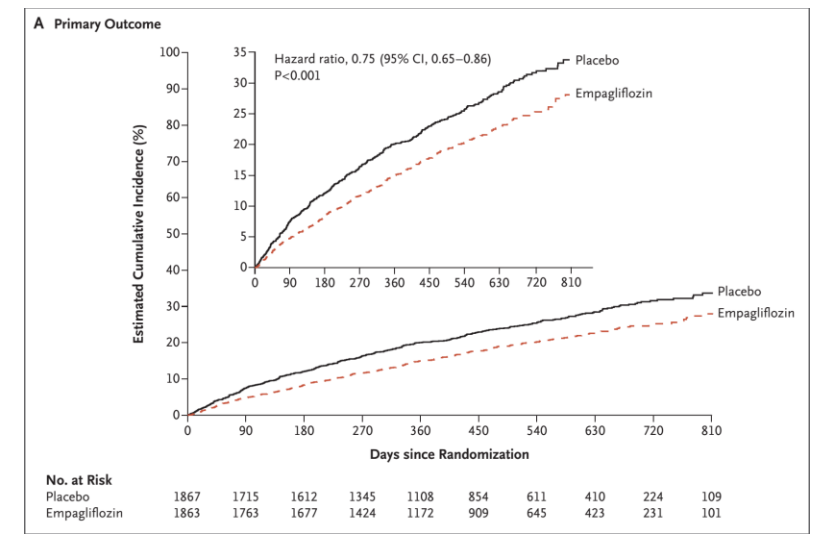
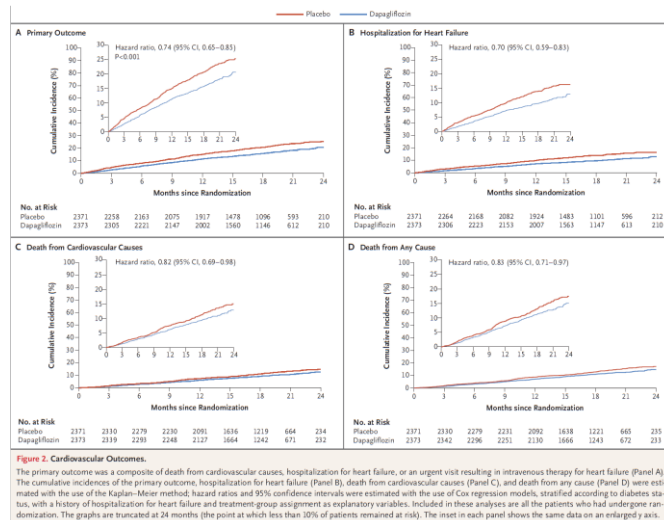
Exclusion : CI < 30ml /min, HTO ou TAS < 95mmHg, Diabète de type 1, ISGLT2

4774 patients (FE 31 hospit 48% NT pro BNP 1430, très bien Ttt) avec un suivi de 18,2 mois en moyenne

Dapagliflozine 10mg/ j VS placebo

Critère primaire : premier évènement sur hospitalisation pour IC (+diurétique IV) ou DC CV

- EMPAREG REDUCED pour l'empagliflozine
- Inclusion : FE < 40% + Nt pro BNP > 600 à 5000 selon FEVG et FA
- diabétique (50%) ou non (50%)
- Exclusion : CI < 20ml /min, HTO ou TAS < 100mmHg, Diabète de type 1, ISGLT2
- 3790 patients (FE 28% hospit 31% Nt pro BNP 1900, très bien Ttt) avec un suivi de 16 mois en moyenne
- Empagliflozine 10mg/ j VS placebo
- Critère primaire : premier évènement sur hospitalisation pour IC ou DC CV



# ISGLT2 en pratique

Dapagliflozine (forxiga, forxigaduo) et Empagliflozine (jardiance et syngardy)

- À arrêter si injection produit contraste iodé surtout si dysfonction rénale
- Principale effet indésirable sur risque d'infection urinaire et mycose génitale
- **Attention au acido cétose euglycémique (2,0 à 3,0 g/l) en cas d'évènement aigu**
- Indication actuelle : insuffisance cardiaque à FEVG altérée et diabète de type 2

Pharmacological treatments indicated in patients with (NYHA class II–IV) heart failure with reduced ejection fraction (LVEF ≤40%)

Recommendations	Class <sup>a</sup>	Level <sup>b</sup>
An ACE-I is recommended for patients with HFrEF to reduce the risk of HF hospitalization and death. <sup>110–113</sup>	I	A
A beta-blocker is recommended for patients with stable HFrEF to reduce the risk of HF hospitalization and death. <sup>114–120</sup>	I	A
An MRA is recommended for patients with HFrEF to reduce the risk of HF hospitalization and death. <sup>121,122</sup>	I	A
Dapagliflozin or empagliflozin are recommended for patients with HFrEF to reduce the risk of HF hospitalization and death. <sup>108,109</sup>	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. <sup>105</sup>	I	B

ACE-I = angiotensin-converting enzyme inhibitor; HF = heart failure; HFrEF = heart failure with reduced ejection fraction; LVEF = left ventricular ejection fraction; MRA = mineralocorticoid receptor antagonist; NYHA = New York Heart Association.

<sup>a</sup>Class of recommendation.

<sup>b</sup>Level of evidence.

Recommendations for the treatment of diabetes in heart failure

Recommendation	Class <sup>a</sup>	Level <sup>b</sup>
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. <sup>293–297</sup>	I	A

- Indication à venir : insuffisance cardiaque à FEVG modérément altérée et peut être préservée, insuffisance rénale chronique