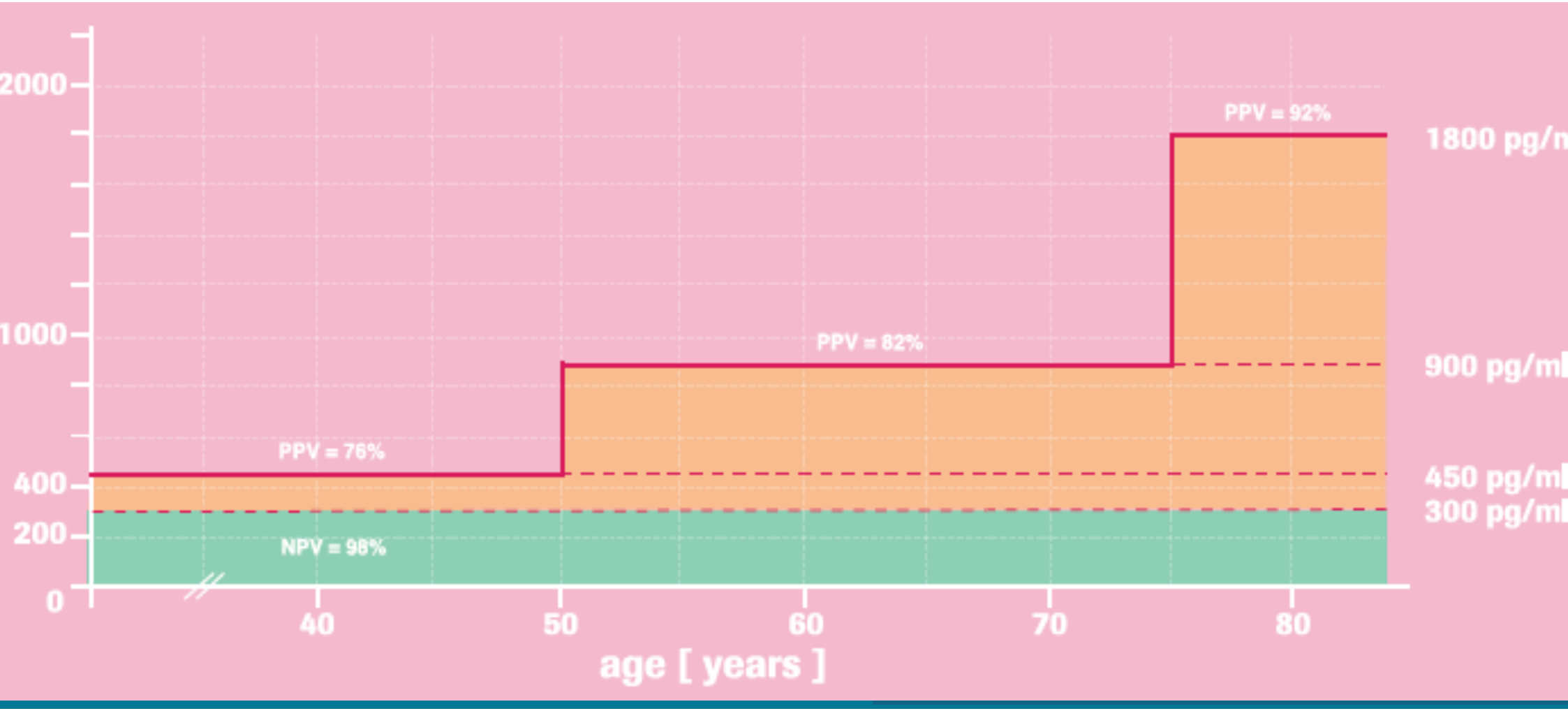
Insuffisance cardiaque

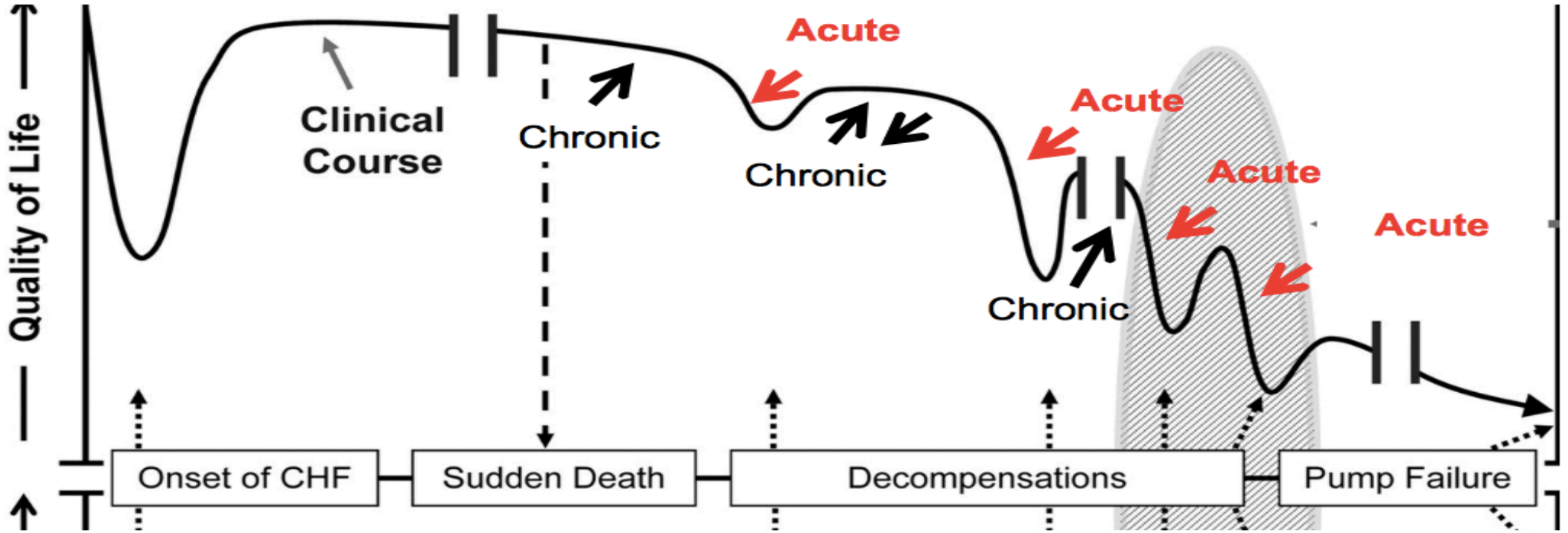
Prise en charge optimale au domicile

Dr Philippe Blouard et Mr Marc Elsen

asuring range and cut offs.
NT-proBNP levels are affected by age among patients with and without acute CHF the optimal strategy rule in acute CHF is to utilize age-stratified out points.



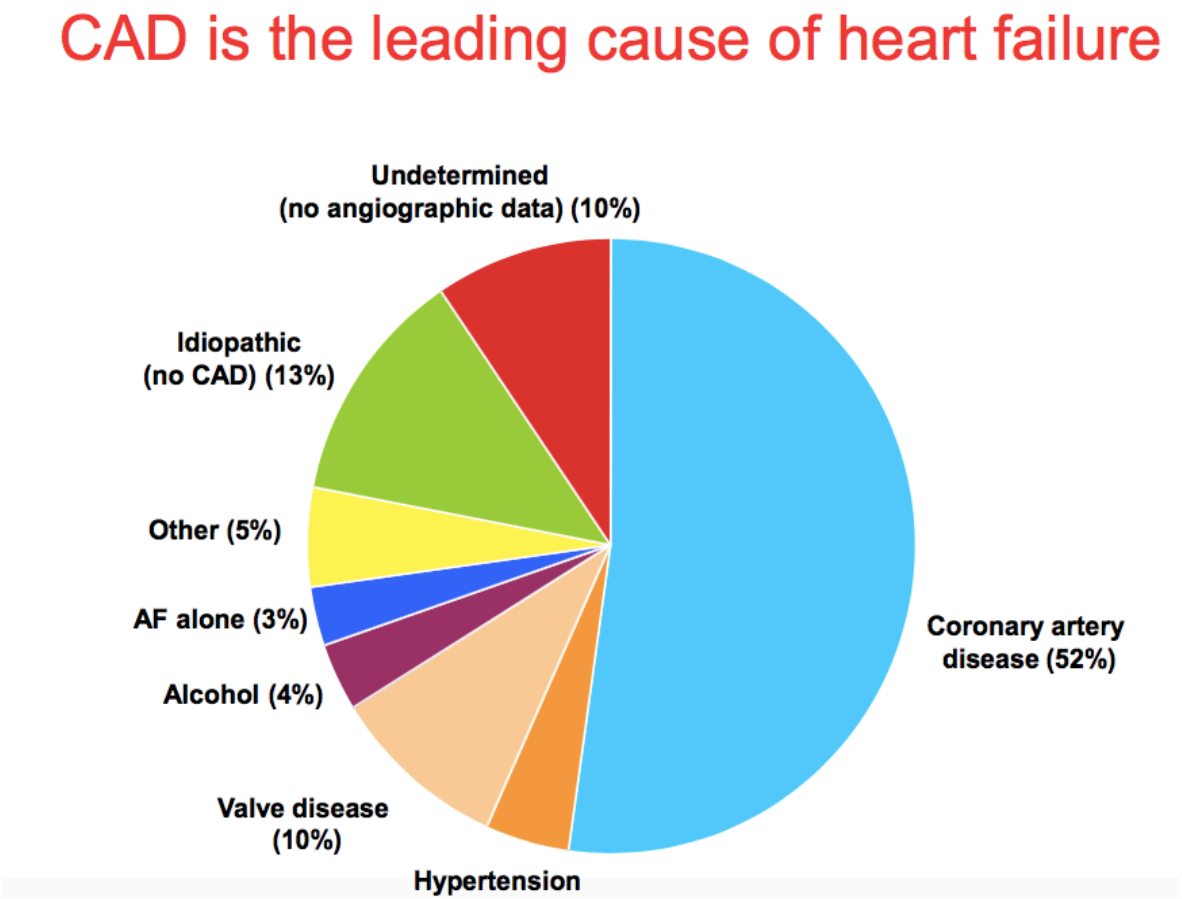
The Clinical Course of Heart Failure
Acute Heart Failure – The New Frontier

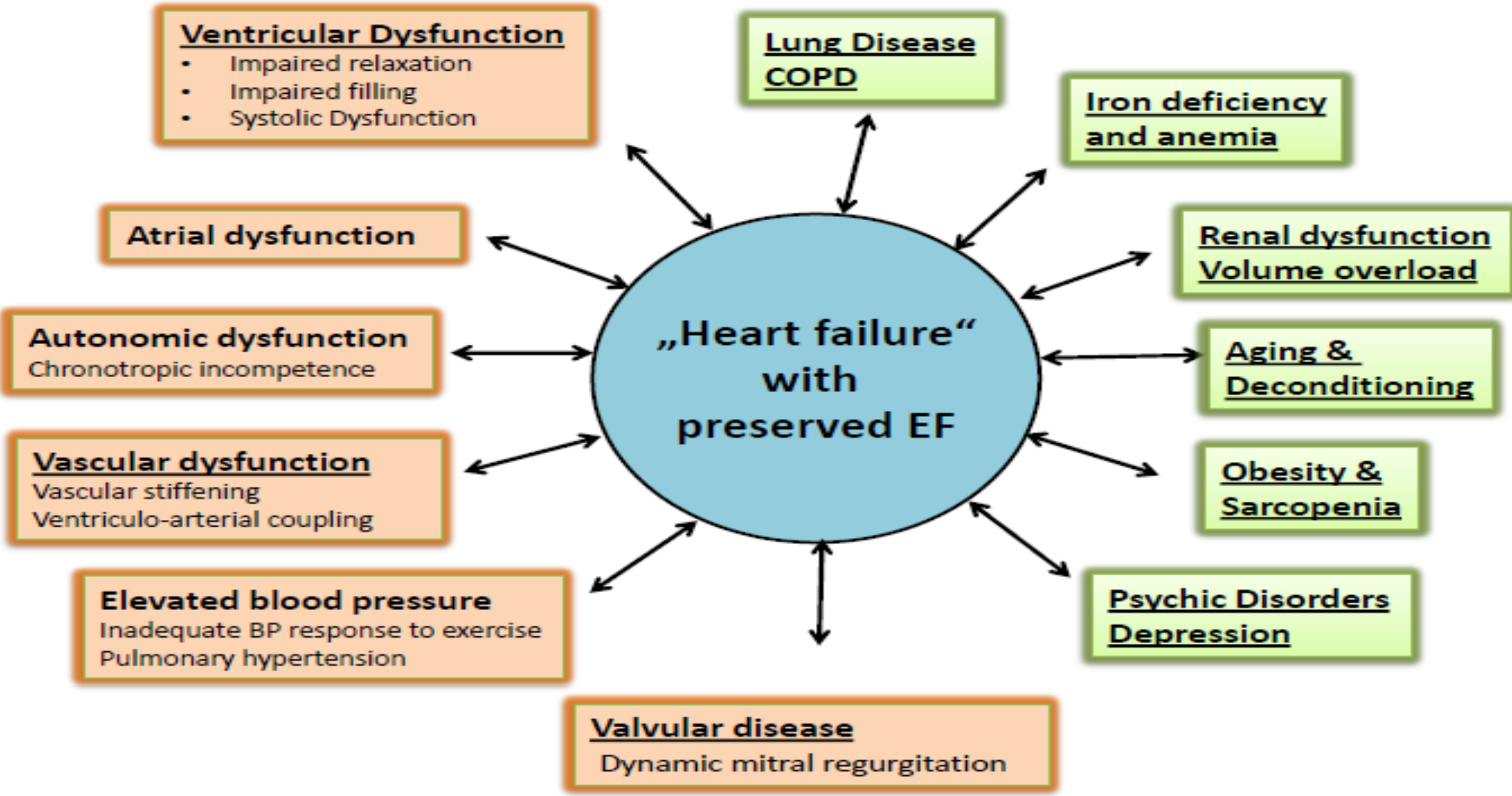


UniversityHospital Zurich

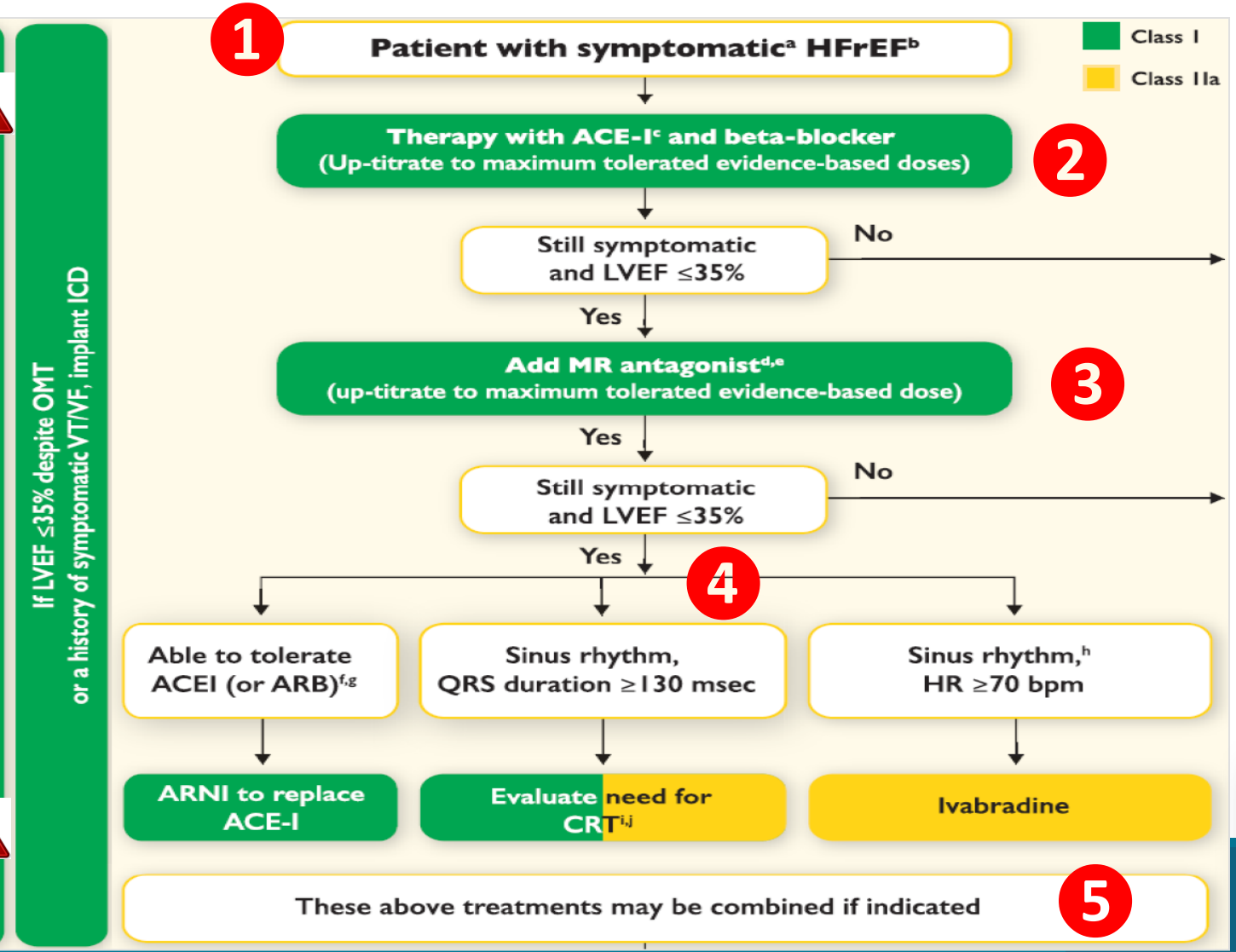
Allen L A et al. Circulation 2012;125:1928-1952

En consultation de cardiologie : recherche étiologie




Ventricular Dysfunction
• Impaired relaxation
• Impaired filling
• Systolic Dysfunction
Lung Disease COPD
Iron deficiency and anemia
Atrial dysfunction
Renal dysfunction Volume overload
Autonomic dysfunction
Chronotropic incompetence
„Heart failure“ with preserved EF
Aging & Deconditioning
Vascular dysfunction
Vascular stiffening
Ventriculo-arterial coupling
Obesity & Sarcopenia
Elevated blood pressure
Inadequate BP response to exercise
Pulmonary hypertension
Psychic Disorders Depression
Valvular disease
Dynamic mitral regurgitation

Traitement pharmacologique



! En Belgique, Ivabradine si Rythme sinusal > à 75 bpm (cf. INAMI)

2016 ESC Guidelines for heart
European Heart Journal 20 Ma

HEART FAILURE ASSOCIATION OF THE ESC

chr Sambre & Meuse

Clinique Saint-Lu Bouge

	Starting dose (mg)	Target dose (mg)
[a]	6.25 *t.i.d.*	50 *t.i.d.*
	2.5 *b.i.d.*	20 *b.i.d.*
[b]	2.5–5.0 *o.d.*	20–35 *o.d.*
	2.5 o.d.	10 *o.d.*
pril[a]	0.5 *o.d.*	4 *o.d.*
ockers		
l	1.25 *o.d.*	10 *o.d.*
l	3.125 *b.i.d.*	25 *b.i.d.*[d]
ol succinate (CR/XL)	12.5–25 *o.d.*	200 o.d.
[c]	1.25 *o.d.*	10 *o.d.*
tan	4–8 *o.d.*	32 *o.d.*
	40 *b.i.d.*	160 *b.i.d.*
[c]	50 *o.d.*	150 *o.d.*
ne	25 *o.d.*	50 *o.d.*
ctone	25 *o.d.*	50 *o.d.*
/valsartan	49/51 *b.i.d.*	97/103 *b.i.d.*
el blocker		
e	5 *b.i.d.*	7.5 *b.i.d.*

Recommendations	Class[a]	Level[b]	
Diuretics			
Diuretics are recommended in order to improve symptoms and exercise capacity in patients with signs and/or symptoms of congestion.	I	B	17
Diuretics should be considered to reduce the risk of HF hospitalization in patients with signs and/or symptoms of congestion.	IIa	B	17
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[d]	I	B	
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	
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	
ARB			
An ARB is recommended to reduce the risk of HF hospitalization and cardiovascular death in symptomatic patients unable to tolerate an ACE-I (patients should also receive a beta-blocker and an MRA).	I	B	
An ARB may be considered to reduce the risk of HF hospitalization and death in patients who are symptomatic despite treatment with a beta-blocker who are unable to tolerate an MRA.	IIb	C	
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 LV in NYHA Class III–IV despite treatment with an ACE-I a beta-blocker and an MRA to reduce the risk of HF hospitalization and death.	IIa	B	
Hydralazine and isosorbide dinitrate may be considered in symptomatic patients with HFrEF who can tolerate neither an ACE-I nor an ARB (or they are contra-indicated) to reduce the risk of death.	IIb	B	
Other treatments with less-certain benefits			
Digoxin			
Digoxin may be considered in symptomatic patients in sinus rhythm despite treatment with an ACE-I (or ARB), a beta-blocker and an MRA, to reduce the risk of hospitalization (both all-cause and HF-hospitalizations).	IIb	B	

« **En dessous de 0,5 ng/mL** de digoxine vous n'êtes pas efficace, **au-dessus d'1,2 ng/mL**, vous êtes dangereux »

B-BLOQUANTS… en pratique

IC stable: NYHA II-III

Objectif: FC 60 bpm (!!! FA:60-100 bpm)

Bénéfice après 3-6 mois

Tolérer hypoPA asymptomatique
- vérifier si antagonistes Ca^{++}/nitrés en cours
- adapter doses de diurétiques

Diabète, asthme STABLE: pas de CI

	DOSE INITIALE FAIBLE	TITRATION PROGRESSIVE	OBJECTIF
Bisoprolol	1,25mg 1x/j	2 semaines →	10mg 1x/j
Carvedilol	3,125mg 2x/j		25mg 2x/j
Metoprolol	12,5-25mg 1x/j		200mg 1x/j
Nebivolol	1,25mg 1x/j		10mg 1x/j

B bloquants et…	**BLOC AV**	**BRADYCARDIE**	**HYPOTENSION (PAs<90mmHg)**
Prudence	I	<60 bpm	Asymptomatique
½ dose	II type 1	<50 bpm symptomatique	Symptomatique (asthénie, lipothymie, congestion)
STOP	II type 2, III		

IEC - Sartans… en pratique

rer ↑ créatinine jusqu'à 30%

rer hypoPA asymptomatique:
rifier si antagonistes Ca^{++}/nitrés en cours
apter doses de diurétiques

ose bilatérale de l'artère rénale: C.I.

ogie sanguine: 1-2 semaines après initiation/titration

dence avec: diurétiques d'épargne K^+, AINS
supplements K^+, Bactrim

		DOSE INITIALE FAIBLE	TITRATION PROGRESSIVE	OBJECT
IEC	captopril	6.25mg 3x/j	2 semaines →	50mg 3
	enalapril	2.5mg 2x/j		20mg 2
	lisinopril	2.5-5.0mg 1x/j		20-35 1x/j
	ramipril	2.5 mg 1x/j		10mg 1
	trandolapril	0.5mg 1x/j		4mg 1
SARTANS	candesartan	4–8mg 1x/j		32mg 1
	valsartan	40mg 2x/j		160mg 2
	losartan	50mg 1x/j		150mg

IEC/sartans et…	K^+	Créatinine/GFR	HYPOTENSION (PAs<90mmHg)
Prudence	>5 mmol/L	creatinine = **2,5 mg/dL** **GFR<30** mL/min/1.73 m^2	Asymptomatique
½ dose	**5-5,5 mmol/L**	↑ creatinine de **50%** (**3 mg/dL**) **GFR<25** mL/min/1.73 m^2	Symptomatique (asthénie, lipothymie, congestion)
STOP	**>5,5 mmol/L**	↑ creatinine de **100%** (**3,5 mg/dL**) **GFR<20** mL/min/1.73 m^2	

urétiques et Antagonistes des récepteurs de minéralocorticoïdes… pratique

	DIURETIQUES	DOSE INITIALE	
	furosemide	20-40mg	
	bumetanide	0,5-1,0mg	
	torasemide	5-10mg	
	bendroflumethiazide	2,5mg	
	hydrochlorothiazide	25mg	
	metolazone	2,5mg	
	indapamide	2,5mg	
POTASSIQUE		+IEC/sartans	-IEC/sartans
	Spironolactone/eplerenone	12,5-25mg	50
	amiloride	2,5mg	5mg
	triamterene	25mg	50mg

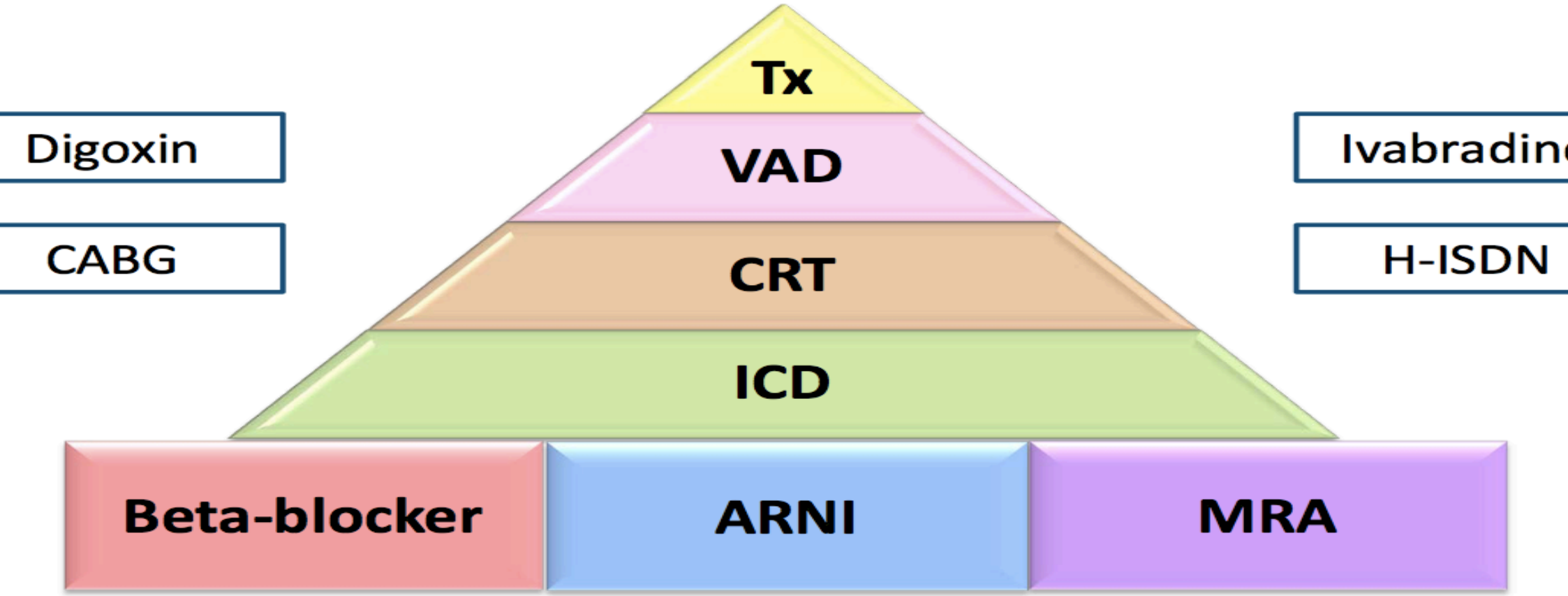
Tolérer hypoPA asymptomatique (PAs<90mmHg):
- vérifier si antagonistes Ca^{++}/nitrés en cours

Surveillance:
- Na^{+}, Mg^{++}, K^{+}, acide urique
- Fonction rénale
- Hypovolémie

Suivi biologique:
- diurétiques: 1-2 semaines après initiation/titration
- spironolactone/eplerenone:
  - 1 semaine après initiation
  - toutes les 4 semaines pendant 3 mois
  - puis tous les 3-4 mois

SPIRONOLACTONE-EPLERENONE		
	K^{+}	Créatinine/GFR
½ dose	>5,5 mmol/L	creatinine = 2,5 mg/dL GFR<30 mL/min/1.73 m^2
STOP	>6mmol/L	creatinine = 3,5 mg/dL GFR<20 mL/min/1.73 m^2

HF-REF: The building blocks of therapy



MÉDICAMENTS À ÉVITER

Médicaments

- Anti-arythmiques (classe Ic)
- Certains inhibiteurs calciques (vérapamil, diltiazem)
- Corticostéroïdes (Rétention hydrique et sodée)
- AINS et coxibs (Rétention hydrique et sodée)
- Metformine (Risque d'acidose lactique)
- Lithium et antidépresseurs tricycliques
- Glitazones
- Macrolides et certains antimycotiques (allongement de QT)
- Antihistaminiques (allongement de l'espace QT)
- Moxonidine

Plantes

- Réglisse (Rétention hydrique)
- Dong quai (Angelica sinensis), escine (Effet pro-arythmogène par allongement de QT)
- Ma huang (éphédrine), écorce de Yohimbe (Sympathicomimétique)
- Gossypol (Hypokaliémie)
- Pissenlit commun (Taraxacum officinale) Rétention hydro-sodée

Recommendations	Class [a]	Level [b]
Thiazolidinediones (glitazones) are not recommended in patients with HF, as they increase the risk of HF worsening and HF hospitalization.	III	A
NSAIDs or COX-2 inhibitors are not recommended in patients with HF, as they increase the risk of HF worsening and HF hospitalization.	III	B
Diltiazem or verapamil are not recommended in patients with HFrEF, as they increase the risk of HF worsening and HF hospitalization.	III	C
The addition of an ARB (or renin inhibitor) to the combination of an ACE-I and an MRA is not recommended in patients with HF, because of the increased risk of renal dysfunction and hyperkalaemia.	III	C

Recommendations for the treatment of other co-morbidities in patients with heart failure

Recommendations	Class[a]	Level[b]	Ref[c]
Iron deficiency			
Intravenous FCM should be considered in symptomatic patients with HFrEF and iron deficiency (serum ferritin <100 µg/L, or ferritin between 100–299 µg/L and transferrin saturation <20%) in order to alleviate HF symptoms, and improve exercise capacity and quality of life.	IIa	A	469, 470
Diabetes			
Metformin should be considered as a first-line treatment of glycaemic control in patients with diabetes and HF, unless contra-indicated.	IIa	C	440 ,441

Antidiabetic drugs and the risk of heart failure

Antidiabetic drugs with nfavorable or uncertain fects on the risk of heart failure	Antidiabetic drugs with a neutral effect on the risk of heart failure	Antidiabetic drugs with beneficial effect on the risk of heart failure
Thiazolidinediones pioglitazone and osiglitazone) **Sulphonylurea** **DPP-4** (saxagliptin, logliptin (?)	❖**Insulin-glargine** ❖**GLP-1 receptor agonists** (lixisenatide, liraglutide, semaglutide, exenatide) ❖**DPP-4 inhibitor:** sitagliptin	❖**Metformin** ❖**SGLT-2 inhibitors** (empagliflozin, canagliflozin)

Seferovic P et al. EJHF 2018;20:853

TAKE HOME MESSAGE

- Le diagnostic au domicile
- Penser étiologie
- Penser aux différentes classes médicamenteuses
  - Symptômes: diurétiques
  - Pronostic: IEC-Sartans-ARNi/ Betabloq/ Inh aldo
  - Pace,..
- Titrer!!

- Co-Morbidités
- Fer,…

Biologie type IC

- Marqueur biologique IC
  - NT-Pro BNP (BNP)
- Bilan hématologique:
  - Hémoglobine, GR, Hct (constantes érythrocytaires)
- Bilan martial:
  - Ferritine
  - Transferrine(coefficient de saturation, TIBC)
  - Fer
- Bilan inflammatoire:
  - CRP
- Bilan fonction rénale:
  - Créatinine et estimation DFG
  - Ionogramme (Na+, K+)
- Bilan hépatique:
  - GOT/GPT
- Diabète:
  - glyc, HbA1c