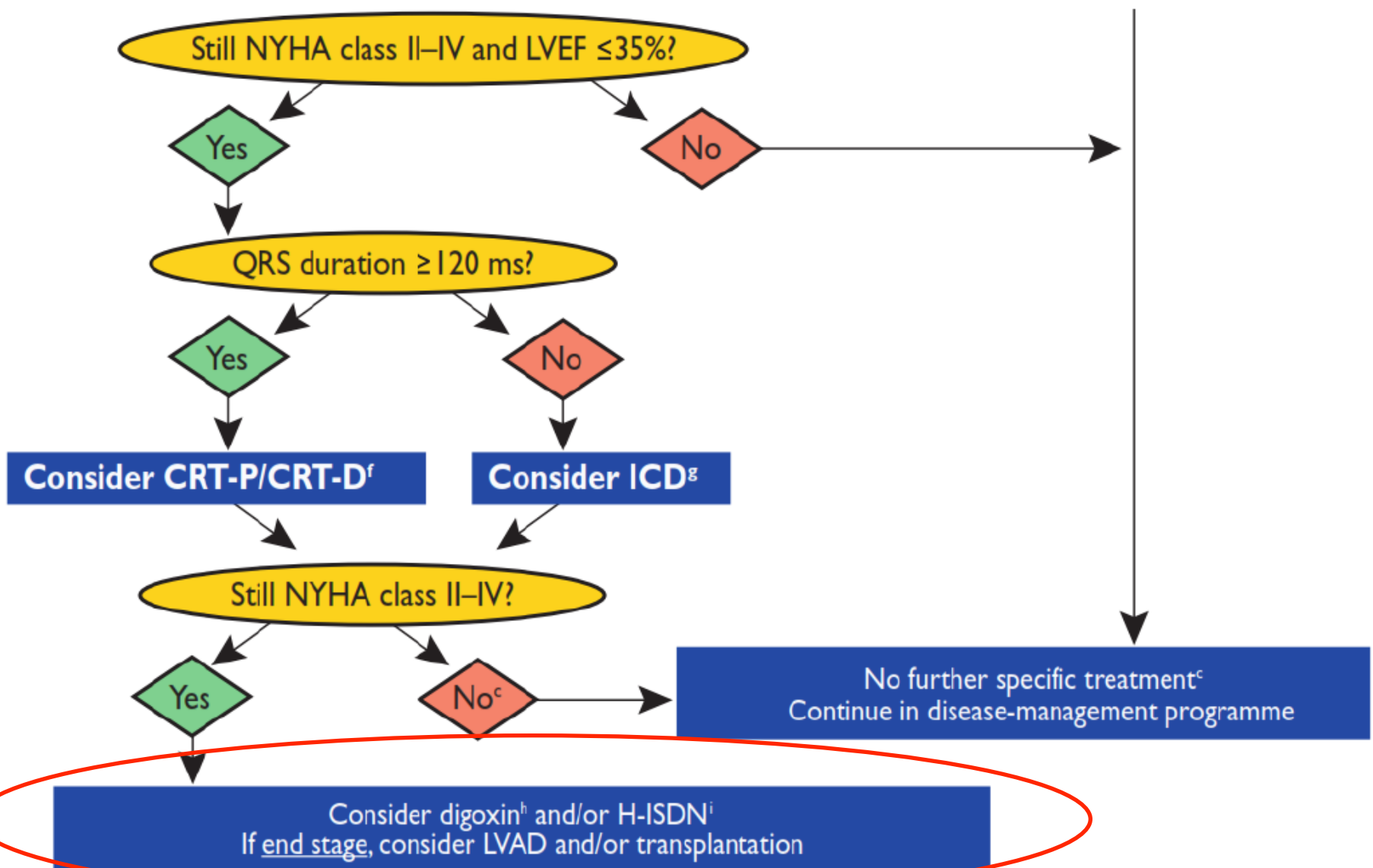


Pharmacological Rx of HF



Pharmacological Rx of HF

Agents with less certain benefit

Digoxin		
May be considered to reduce the risk of HF hospitalization in patients in sinus rhythm with an EF \leq 45% who are <u>unable to tolerate a beta-blocker (ivabradine is an alternative in patients with a heart rate \geq70 b.p.m.).</u> Patients should also receive an ACE inhibitor (or ARB) and an MRA (or ARB).	IIb	B
May be considered to <u>reduce the risk of HF hospitalization in patients with an EF $<$45% and persisting symptoms</u> (NYHA class II–IV) despite treatment with a beta-blocker, ACE inhibitor (or ARB), and an MRA (or ARB).	IIb	B
H-ISDN		
May be considered as an <u>alternative to an ACE inhibitor or ARB, if neither is tolerated,</u> to reduce the risk of HF hospitalization and risk of premature death in patients with an EF \leq 45% and dilated LV (or EF \leq 35%). Patients should also receive a beta-blocker and an MRA.	IIb	B
May be considered to <u>reduce the risk of HF hospitalization and risk of premature death</u> in patients in patients with an EF \leq 45% and dilated LV (or EF \leq 35%) and persisting symptoms (NYHA class II–IV) despite treatment with a beta-blocker, ACE inhibitor (or ARB), and an MRA (or ARB).	IIb	B

Pharmacological Rx of HFpEF

Trial	n. of pts	Drug	Result
CHARM Preserved	3023	Candesartan	Neutral
PEP-CHF	850	Perindopril	Neutral
I-Preserve	4128	Irbesartan	Neutral

- **No treatment has shown to reduce morbidity and mortality**
- **Diuretics are used to control Na and water retention + relieve breathlessness and edema**
- **Adequate Rx of HT and myocardial ischemia + control of ventricular rate for AF**

Pharmacological Rx of HF

Treatments that may cause harm

Recommendations	Class ^a	Level ^b
Thiazolidinediones (glitazones) should not be used as they cause worsening HF and increase the risk of HF hospitalization.	III	A
Most CCBs (with the exception of amlodipine and felodipine) should not be used as they have a negative inotropic effect and can cause worsening HF.	III	B

NSAIDs and COX-2 inhibitors should be avoided if possible as they may cause sodium and water retention, worsening renal function and worsening HF.	III	B
The addition of an ARB (or renin inhibitor) to the combination of an ACE inhibitor AND a mineralocorticoid antagonist is NOT recommended because of the risk of renal dysfunction and hyperkalaemia.	III	C

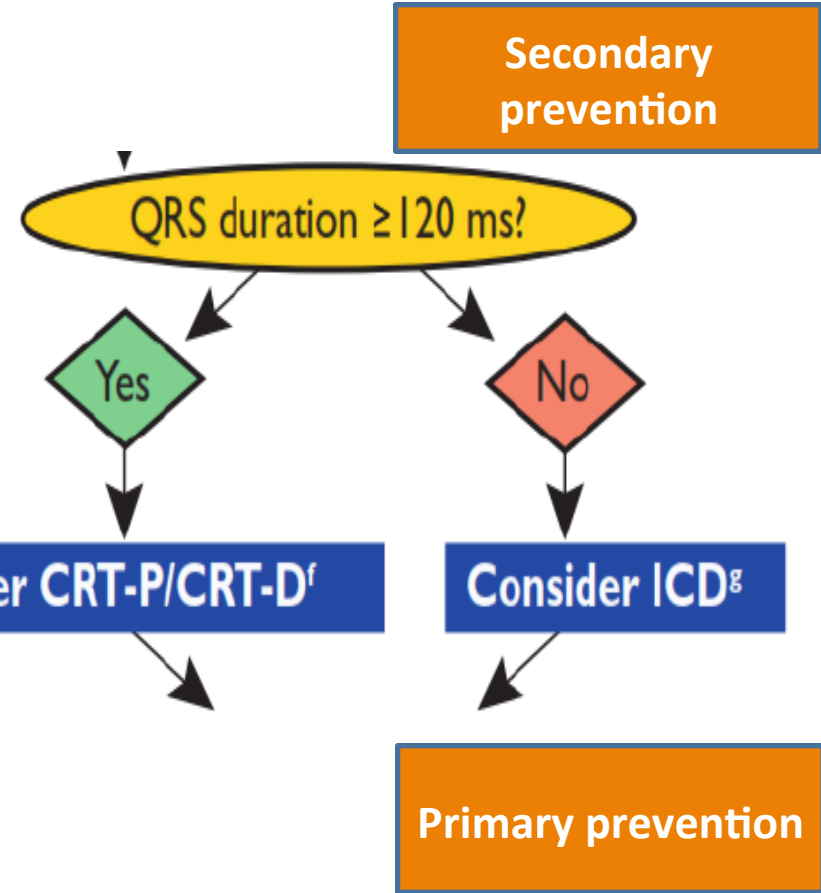
Treatments not recommended:

- Statin (neutral results of CORONA and GISSI-HF)
- OACs other than pts with AF

Outlines

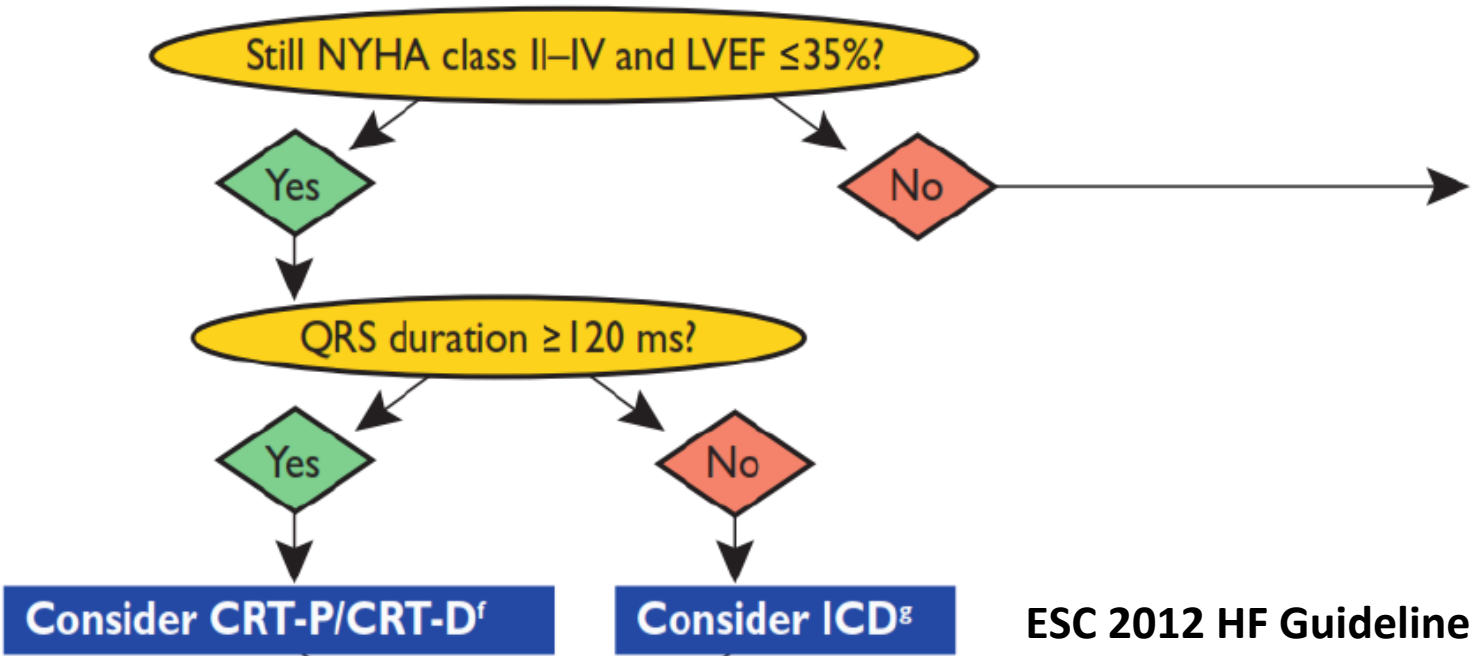
- Diagnosis of HF
- Pharmacological Treatment of HF
- **Non-pharmacological Treatment of HF**
- Management of AF in HF

Non-Pharmacological Rx of HF



Recommendations	Class ^a	Level ^b
Secondary prevention An ICD is recommended in a patient with a ventricular arrhythmia causing haemodynamic instability, who is expected to survive for >1 year with good functional status, to reduce the risk of sudden death.	I	A
Primary prevention An ICD is recommended in a patient with symptomatic HF (NYHA class II–III) and an EF ≤35% despite ≥3 months of treatment with optimal pharmacological therapy, who is expected to survive for >1 year with good functional status, to reduce the risk of sudden death	I	A
(ii) Non-ischaemic aetiology		B

Non-Pharmacological Rx of HF



ESC 2012 HF Guideline

Recommendations for the use of CRT where the evidence is strong—patients in sinus rhythm with NYHA functional class II heart failure and a persistently reduced ejection fraction, despite optimal pharmacological therapy

Recommendations	Class ^a	Level ^b
LBBB QRS morphology CRT, preferably CRT-D is recommended in patients in sinus rhythm with a QRS duration of ≥ 130 ms, LBBB QRS morphology, and an EF $\leq 30\%$, who are expected to survive for > 1 year with good functional status, to reduce the risk of HF hospitalization and the risk of premature death.	I	A
Non-LBBB QRS morphology CRT, preferably CRT-D should be considered in patients in sinus rhythm with a QRS duration of ≥ 150 ms, irrespective of QRS morphology, and an EF $\leq 30\%$, who are expected to survive for > 1 year with good functional status, to reduce the risk of HF hospitalization and the risk of premature death.	IIa	A

Non-Pharmacological Rx of HF

Indications for CRT

1. Expanded indication for pts with mild symptoms (NYHA Class II)
2. Less certain about pts:
 - AF
 - RBBB /IVCD (non-LBBB)

Recommendations for the use of CRT where the evidence is strong—patients in sinus rhythm with NYHA functional class II heart failure and a persistently reduced ejection fraction, despite optimal pharmacological therapy

Recommendations	Class ^a	Level ^b
LBBB QRS morphology CRT, preferably CRT-D is recommended in patients in sinus rhythm with a QRS duration of ≥ 130 ms, LBBB QRS morphology, and an EF $\leq 30\%$, who are expected to survive for > 1 year with good functional status, to reduce the risk of HF hospitalization and the risk of premature death.	I	A
Non-LBBB QRS morphology CRT, preferably CRT-D should be considered in patients in sinus rhythm with a QRS duration of ≥ 150 ms, irrespective of QRS morphology, and an EF $\leq 30\%$, who are expected to survive for > 1 year with good functional status, to reduce the risk of HF hospitalization and the risk of premature death.	IIa	A

Non-Pharmacological Rx of HF

Revascularization

Recommendations	Class ^a	Level ^b
CABG is recommended for patients with angina and significant left main stenosis, who are otherwise suitable for surgery and expected to survive >1 year with good functional status, to reduce the risk of premature death.	I	C
CABG is recommended for patients with angina and two- or three-vessel coronary disease, including a left anterior descending stenosis, who are otherwise suitable for surgery and expected to survive >1 year with good functional status, to reduce the risk of hospitalization for cardiovascular causes and the risk of premature death from cardiovascular causes.	I	B
<i>Alternative to CABG:</i> <i>PCI may be considered as an alternative to CABG in the above categories of patients unsuitable for surgery.</i>	IIb	C

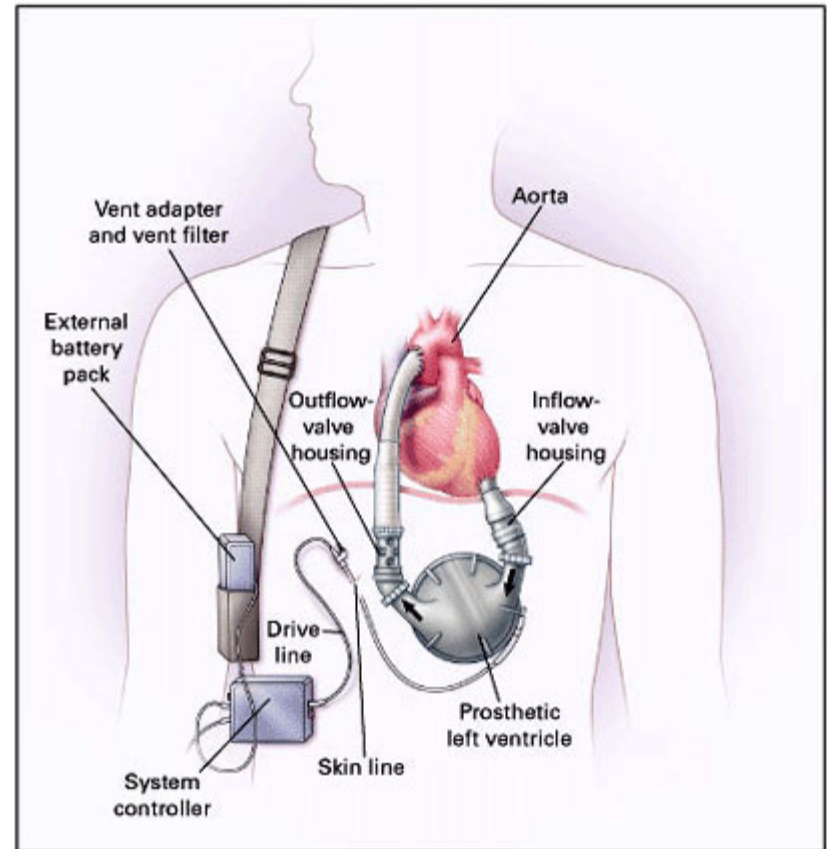
LVADs

Recommendations	Class ^a	Level ^b
An LVAD or BiVAD is recommended in selected patients ^d with end-stage HF despite optimal pharmacological and device treatment and who are otherwise suitable for heart transplantation, to improve symptoms and reduce the risk of HF hospitalization for worsening HF and to reduce the risk of premature death while awaiting transplantation.	I	B
An LVAD should be considered in highly selected patients ^d who have end-stage HF despite optimal pharmacological and device therapy and who are not suitable for heart transplantation, but are expected to survive >1 year with good functional status, to improve symptoms, and reduce the risk of HF hospitalization and of premature death.	IIa	B

Non-Pharmacological Rx of HF

Patients with >2 months of severe symptoms despite optimal medical and device therapy and more than one of the following:

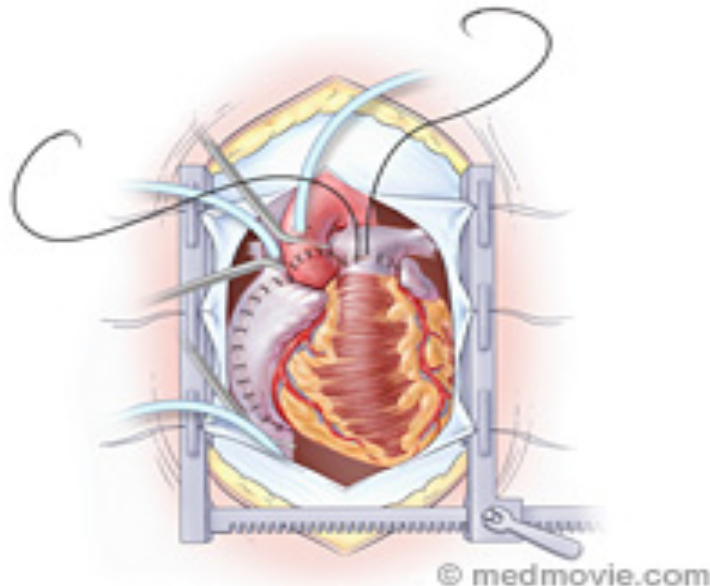
- LVEF <25% and, if measured, peak $\text{VO}_2 < 12 \text{ mL/kg/min}$
- ≥ 3 HF hospitalizations in previous 12 months without an obvious precipitating cause
- Dependence on i.v. inotropic therapy
- Progressive end-organ dysfunction (worsening renal and/or hepatic function) due to reduced perfusion and not to inadequate ventricular filling pressure (PCWP $\geq 20 \text{ mm Hg}$ and SBP $\leq 80\text{--}90 \text{ mmHg}$ or CI $\leq 2 \text{ L/min/m}^2$)
- Deteriorating right ventricular function



Non-Pharmacological Rx of HF

Heart Transplantation

Patients to consider	End-stage heart failure with severe symptoms, a poor prognosis, and no remaining alternative treatment options
	Motivated, well informed, and emotionally stable
	Capable of complying with the intensive treatment required post-operatively

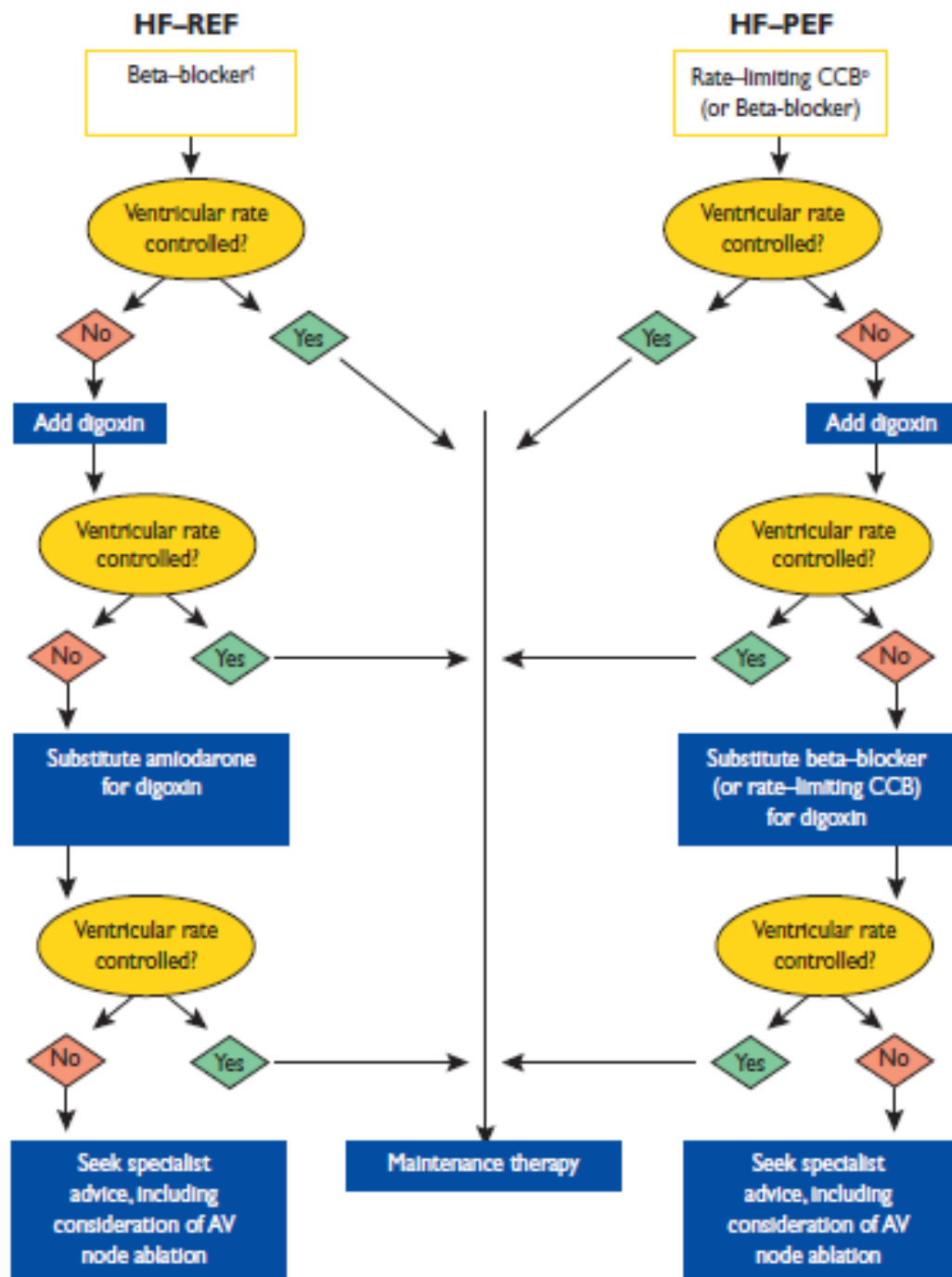


Contraindications	Active infection
	Severe peripheral arterial or cerebrovascular disease
	Current alcohol or drug abuse
	Treated cancer in previous 5 years
	Unhealed peptic ulcer
	Recent thrombo-embolism
	Significant renal failure (e.g. creatinine clearance <50 mL/min)
	Significant liver disease
	Systemic disease with multiorgan involvement
	Other serious co-morbidity with poor prognosis
	Emotional instability or untreated mental illness
	High, fixed pulmonary vascular resistance (>4-5 Wood Units and mean transpulmonary gradient >15 mmHg)

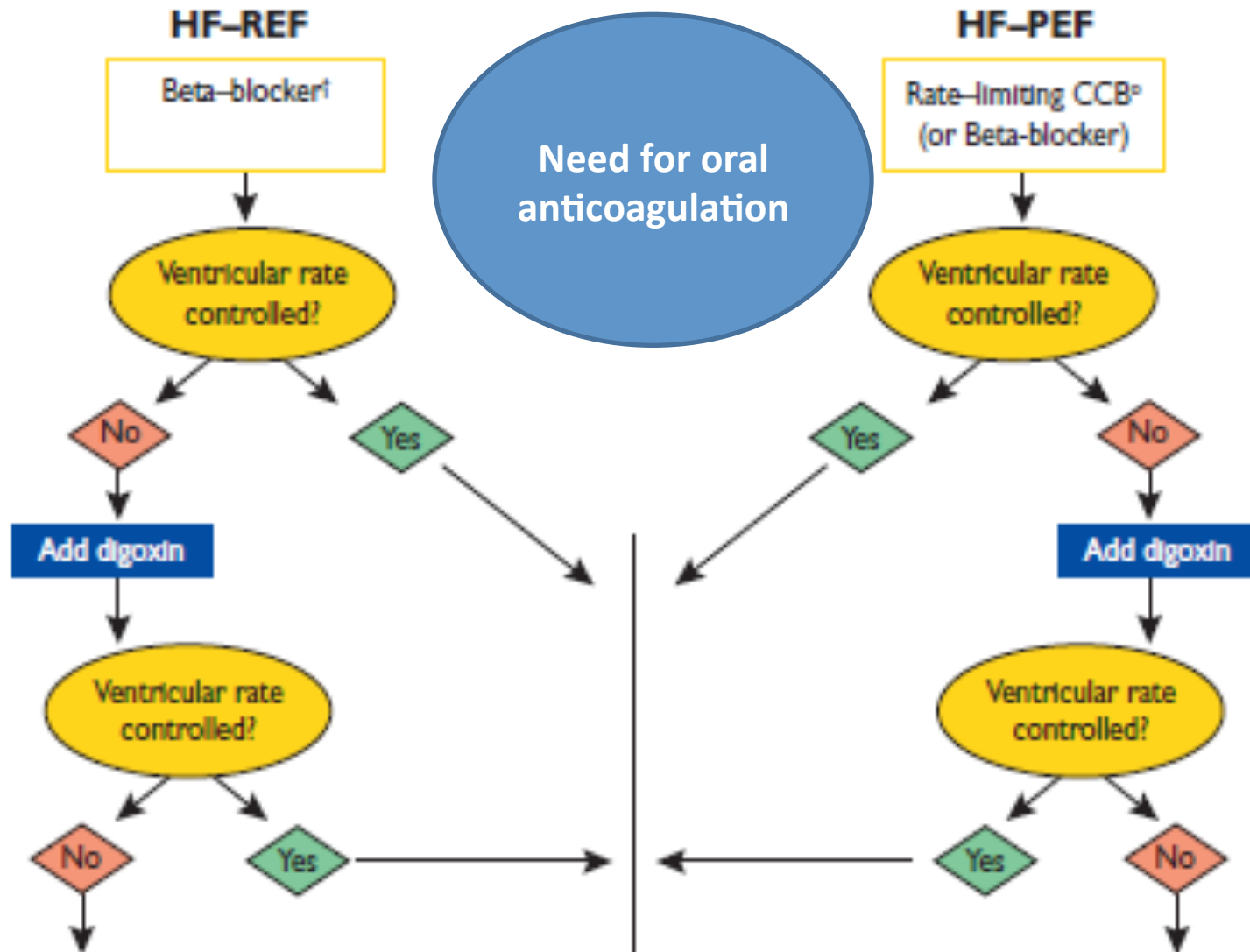
Outlines

- Diagnosis of HF
- Pharmacological Treatment of HF
- Non-pharmacological Treatment of HF
- **Management of AF in HF**

Management of AF in HF

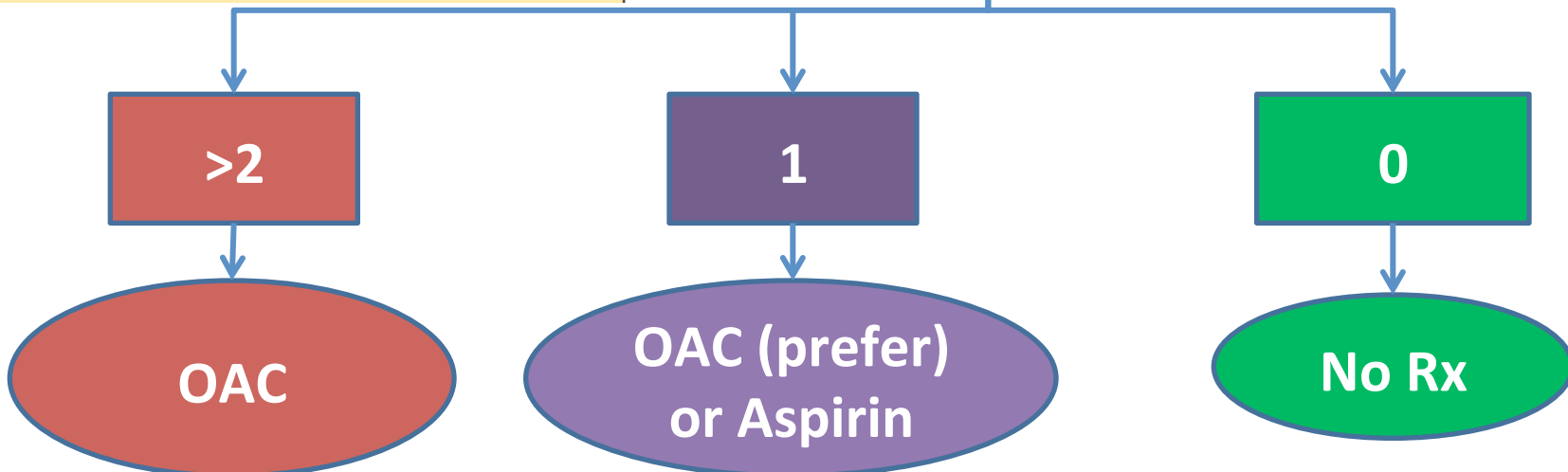
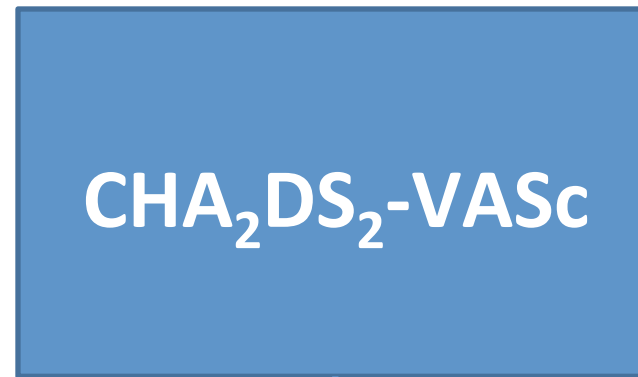


Management of AF in HF

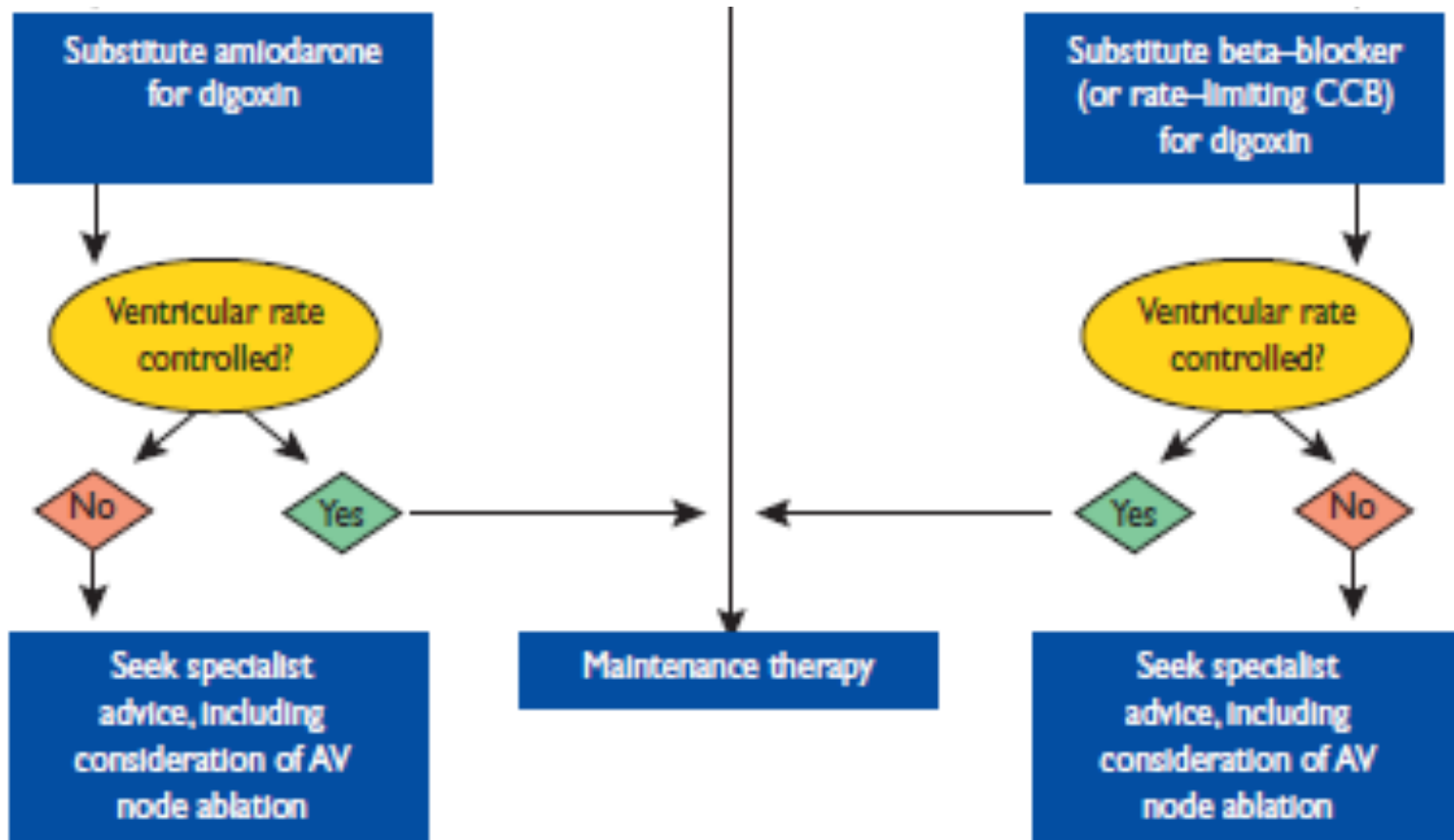


Management of AF in HF

CHA ₂ DS ₂ -VASc	
Congestive HF or LVEF ≤40%	1
Hypertension	1
Age ≥75 years	2
Diabetes mellitus	1
Stroke, transient ischaemic attack, or thrombo-embolism	2
Vascular disease (previous myocardial infarction, peripheral artery disease, or aortic plaque)	1
Age 65–74 years	1
Sex category (i.e. female sex)	1
Maximum score	9

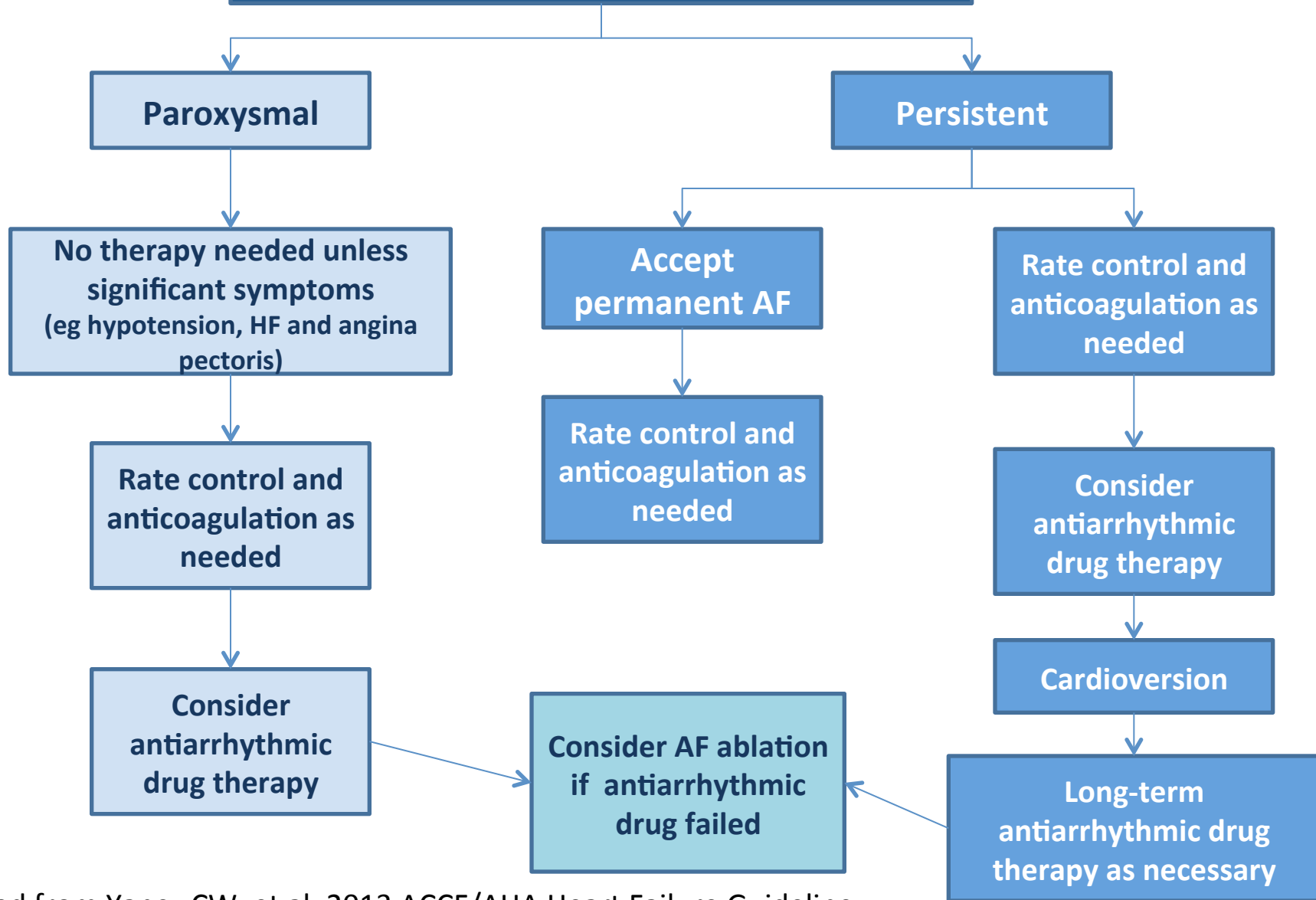


Management of AF in HF



Amiodarone is the only recommended AAD for AF in patients with HF

Pharmacologic Management of Newly Discovered AF in HF



Conclusions

- New definitions on different type of HF
- New treatment recommendations in the guideline based on new data from RCT, especially on increasing role of mineralocorticoid receptor antagonist and ivabradine
- Update and expanded indications for device therapies, including CRT and LVAD
- Focus on the importance of Rx of AF in HF