HEALTHY HEART

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HEART FAILURE – WHAT'S NEW IN ESC GUIDELINES 2021

Honorary Editor :
Dr. Vineet Sankhla
Interventional Cardiologist &
Cardiac Electrophysiologist

This article gives synopses of Heart Failure classification based on ejection fraction.
It also discusses salient points regarding recent updates in the management of ever evolving field of Heart Failure.

The nomenclature for HF with LVEF of 41-49% has been revised to HF with mildly reduced EF (HFmEF). HF with LVEF ⩽ 40% remains HF with reduced EF (HFrEF), and HF with LVEF ⩾ 50% remains HF with preserved EF (HFpEF).

All patients with suspected HF should have an ECG, Echo, chest X-ray, blood tests including cell count, urea and electrolytes, thyroid function, HbA1c, lipid, iron studies, and B-type natriuretic peptide (BNP/NT-proBNP). Cardiac MRI is recommended in those with poor acoustic windows with an echo or in patients with suspected infiltrative cardiomyopathy, hemochromatosis, LV noncompaction, or myocarditis.

Guideline-directed medical therapy (GDMT) for patients with HFrEF and NYHA class II symptoms or worse now includes angiotensin receptor neprilysin inhibitor (ARNI) as a replacement for angiotensin-converting enzyme (ACE) inhibitors and addition of SGLT-2 inhibitors (dapagliflozin or empa-gliflozin) as Class I recomm-endations.

Implantable cardioverter-defibrillators (ICDs) are recommended for primary prevention of sudden cardiac death for symptomatic ischemic or nonischemic cardiomyopathy with LVEF ⩽ 35% despite 3 months of GDMT if expected survival is >1 year. ICD is NOT recommended within 40 days of a myocardial infarction (MI) or for patients with NYHA class IV symptoms who are not candidates for advanced therapies.
Cardiac resynchronization therapy is recommended for symptomatic HFrEF with EF <35% in sinus rhythm with a left bundle branch block (LBBB) over 150 msec duration despite GDMT. It is also recommended in HFrEF with EF <35% irrespective of symptoms or QRS duration if there is a high-grade atrioventricular (AV) block with need for a pacemaker.

For HFmEF, diuretics are recom-mended to relieve congestion. ACE inhibitors /angiotensin-receptor blockers / ARNIs /beta-blockers / mineral-ocorticoid receptor antagonists may be considered as additional therapy to reduce mortality and hospitalization (Class IIa recomm-endation).

For HFpEF patients, diagnosis and treatment of contributing factors (hypertension, kidney disease, etc.) and use of diuretics are recommended. No specific therapies have been proven to reduce mortality in HFpEF.

For all HF patients, enrollment in a multidisciplinary HF program, home, or clinic-based program and use of self-management strategies are recom-mended. Exercise is recommended for all HF patients.

For prevention of HF, appropriate treatment of hypertension, use of statins when indicated, SGLT2 inhibitors in diabetics at high risk for or with cardiovascular disease and counseling against smoking, alcohol, drug use, and obesity are all Class I recommendations.
For acute decompensated HF, routine use of inotropes is NOT recommended in the absence of cardiogenic shock and routine use of opioids is NOT recommended. Routine use of intra-aortic balloon pump in post-MI cardiogenic shock is NOT recommended.
Additional Class I recommendations for hospitalized acute HF patients include trial of oral GDMT and careful exclusion of volume overload prior to discharge with early follow-up within 1-2 weeks of discharge.

For patients with atrial fibrillation (AF), routine use of anticoagulation for CHA2DS2-VASc ⩾ 2 in men and ⩾ 3 in women, preferably with direct-acting oral anticoagulants except in the presence of a prosthetic mechanical valve or moderate or severe mitral stenosis, is recommended. Urgent

cardioversion for patients in AF with HF and hemodynamic compromise is recommended. Rhythm control including catheter ablation should be considered for AF patients with symptoms including HF.

For patients with HF and severe aortic stenosis, transcatheter/surgical aortic valve replacement is recommended using a heart team approach. For HF patients with secondary mitral regurgitation, percutaneous edge-to-edge mitral valve repair should be considered if severe symptoms persist despite appropriate GDMT. For patients with secondary mitral regurgitation and coronary artery disease who need revascularization, coronary artery bypass grafting and mitral valve surgery should be considered.

Cancer patients being considered for cardiotoxic chemotherapeutic agents who are at risk for cardiotoxicity, should be evaluated ideally by a cardio-oncologist prior to initiation of therapy.

Tafamidis is a Class I recommendation in patients with TTR amyloidosis with NYHA class I-II symptoms.

All HF patients should be periodically screened for iron deficiency anemia. Ferric carboxymaltose should be considered in symptomatic, ambulatory HF patients with iron deficiency anemia and EF ≤45% or hospitalized HF patients with EF ≤50%.

Table 3 Definition of heart failure with reduced ejection fraction, mildly reduced ejection fraction and preserved ejection fraction

Type of HF		HFrEF	HFmrEF	HFpEF
CRITERIA	1	Symptoms ± Signs[a]	Symptoms ± Signs[a]	Symptoms ± Signs[a]
	2	LVEF ≤40%	LVEF 41–49%[b]	LVEF ≥50%
	3	–	–	Objective evidence of cardiac structural and/or functional abnormalities consistent with the presence of LV diastolic dysfunction/raised LV filling pressures, including raised natriuretic peptides[c]

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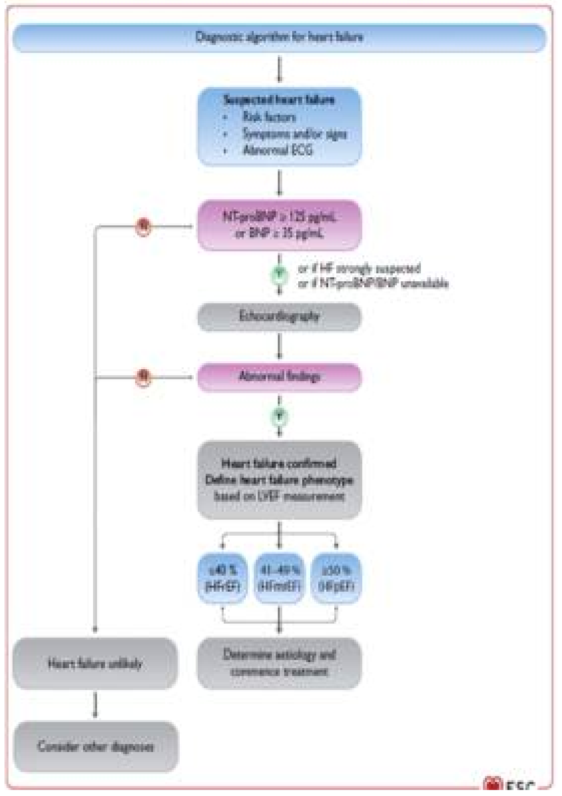
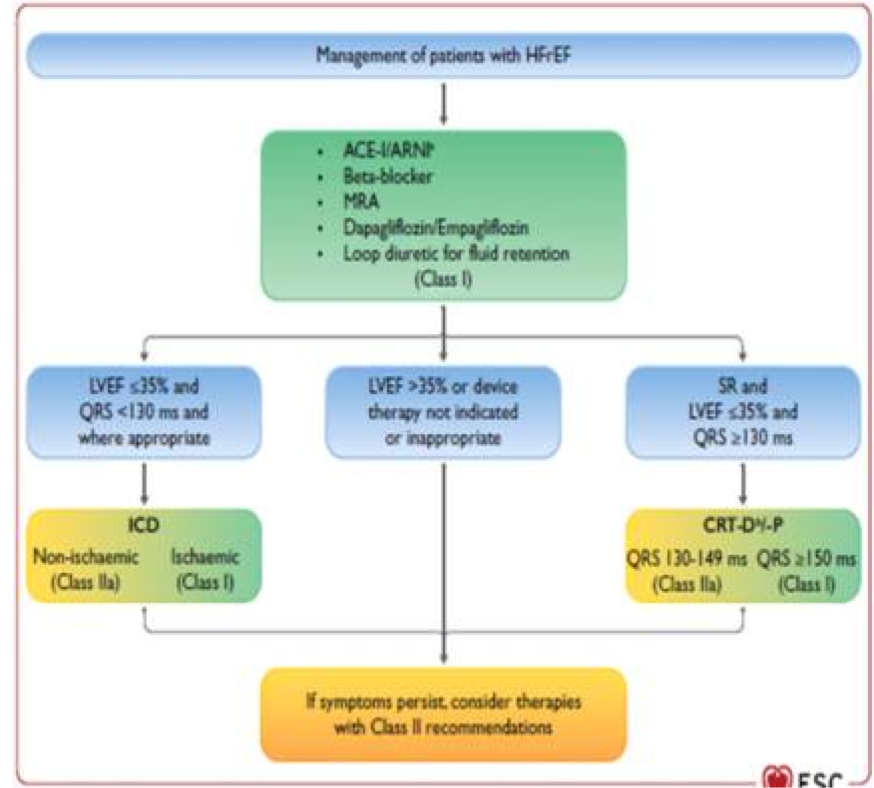
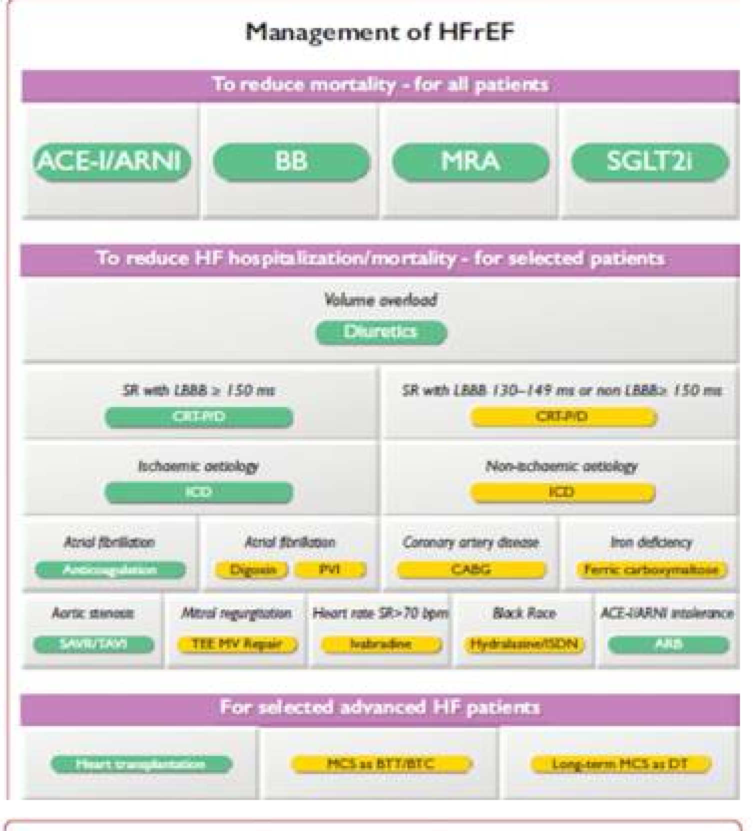
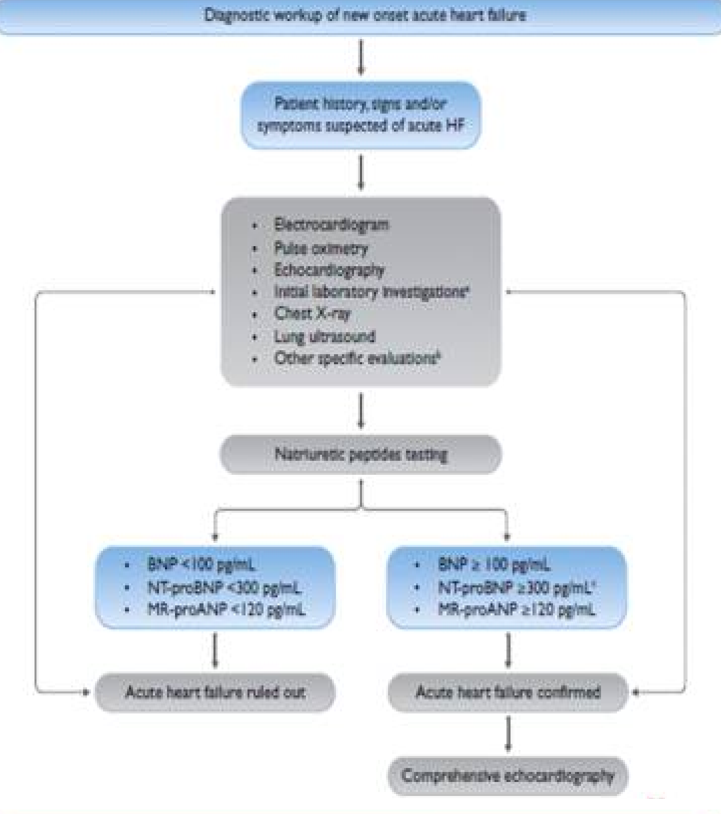
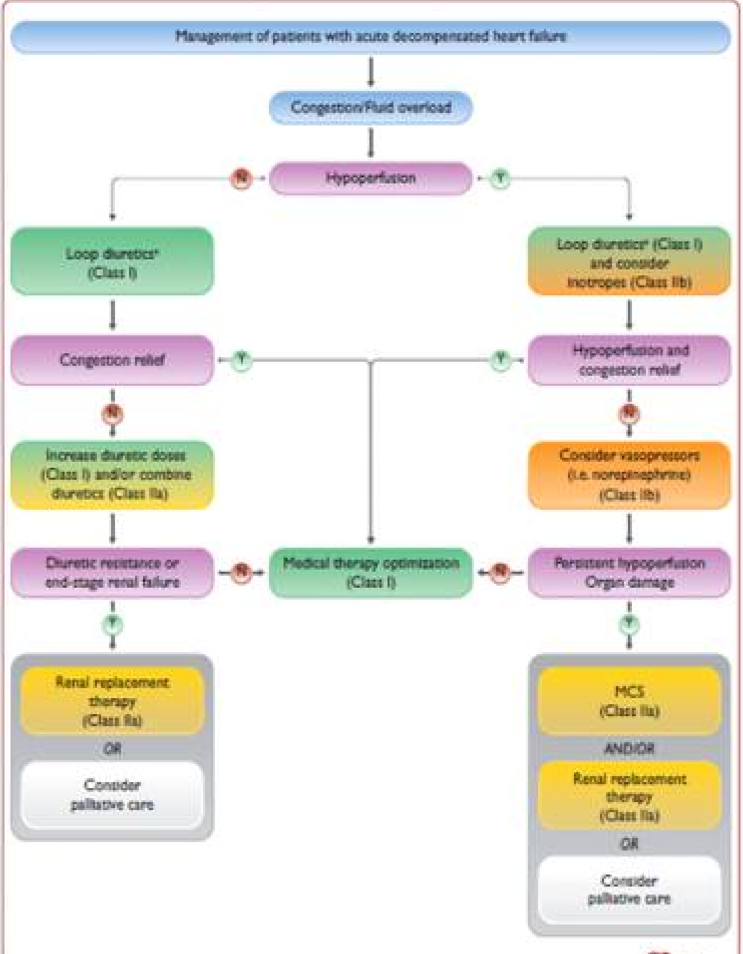
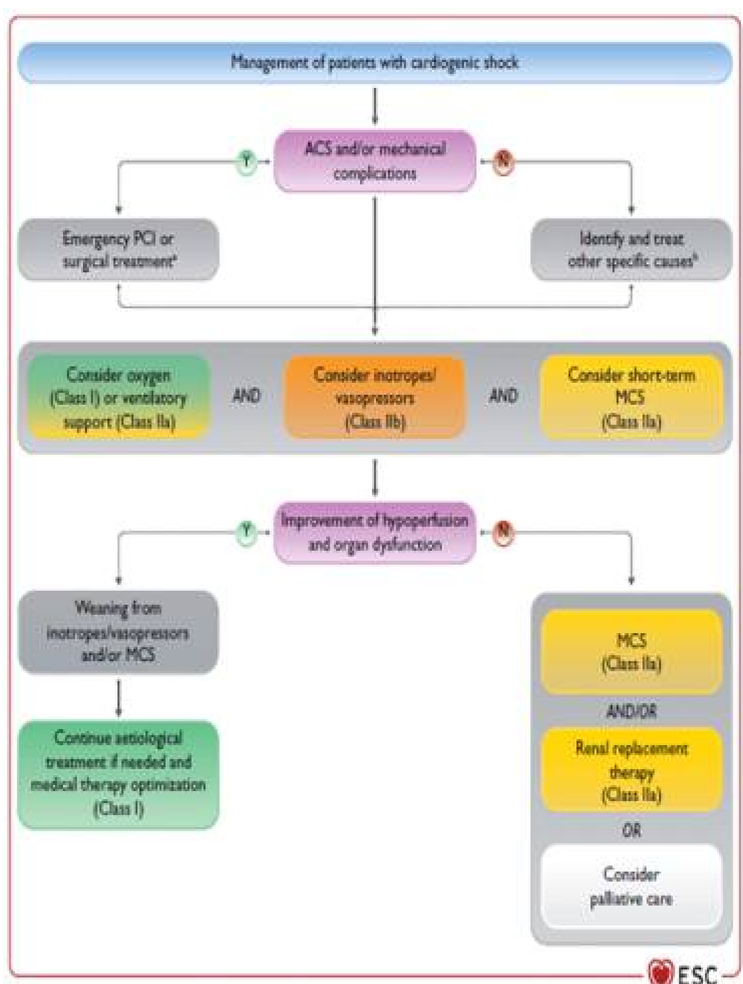





Management of HFrEF
To reduce mortality - for all patients
ACE-I/ARNI
BB
MRA
SGLT2i
To reduce HF hospitalization/mortality - for selected patients
Volume overload
Diuretics
SR with LBBB ≥ 150 ms
CRT-P/D
SR with LBBB 130–149 ms or non LBBB≥ 150 ms
CRT-P/D
Ischaemic aetiology
ICD
Non-ischaemic aetiology
ICD
Atrial fibrillation
Anticoagulation
Atrial fibrillation
Digoxin
PVI
Coronary artery disease
CABG
Iron deficiency
Ferric carboxymaltose
Aortic stenosis
SAVR/TAVI
Mitral regurgitation
TEE MV Repair
Heart rate SR>70 bpm
Ivabradine
Black Race
Hydralazine/ISDN
ACE-I/ARNI intolerance
ARB
For selected advanced HF patients
Heart transplantation
MCS as BTT/BTC
Long-term MCS as DT


Diagnostic workup of new onset acute heart failure
Patient history, signs and/or symptoms suspected of acute HF
Electrocardiogram
Pulse oximetry
Echocardiography
Initial laboratory investigations
Chest X-ray
Lung ultrasound
Other specific evaluations
Natriuretic peptides testing
BNP <100 pg/mL
NT-proBNP <300 pg/mL
MR-proANP <120 pg/mL
BNP ≥ 100 pg/mL
NT-proBNP ≥300 pg/mL
MR-proANP ≥120 pg/mL
Acute heart failure ruled out
Acute heart failure confirmed
Comprehensive echocardiography


Management of patients with acute decompensated heart failure
Congestion/Fluid overload
Hypoperfusion
N
Y
Loop diuretics
(Class I)
Loop diuretics (Class I) and consider inotropes (Class IIb)
Congestion relief
Hypoperfusion and congestion relief
Increase diuretic doses (Class I) and/or combine diuretics (Class IIa)
Consider vasopressors (i.e. norepinephrine) (Class IIb)
Diuretic resistance or end-stage renal failure
Medical therapy optimization (Class I)
Persistent hypoperfusion Organ damage
Renal replacement therapy (Class IIa)
OR
Consider palliative care
MCS (Class IIa)
AND/OR
Renal replacement therapy (Class IIa)
OR
Consider palliative care
ESC


Management of patients with cardiogenic shock
ACS and/or mechanical complications
Y
N
Emergency PCI or surgical treatment
Identify and treat other specific causes
Consider oxygen (Class I) or ventilatory support (Class IIa)
AND
Consider inotropes/ vasopressors (Class IIb)
AND
Consider short-term MCS (Class IIa)
Improvement of hypoperfusion and organ dysfunction
Weaning from inotropes/vasopressors and/or MCS
Continue aetiological treatment if needed and medical therapy optimization (Class I)
MCS (Class IIa)
AND/OR
Renal replacement therapy (Class IIa)
OR
Consider palliative care
ESC

Management of diuretic therapy in patients with acute heart failure

On oral loop diuretic

- N → ≥20–40 mg i.v. furosemide
- Y → 1–2 times daily oral dose i.v.

↓

- Urinary spot sodium after 2 h ≥50–70 mEq/L
- Urine output after 6 h ≥100–150 mL/h

- Y → Repeat similar dose i.v. every 12 h
- N → Double dose i.v. until maximum i.v. dose[a]

↓

- Urinary spot sodium ≥50–70 mEq/L at 2–6 h
- Urine output ≥100–150 mL/h

- Y → Continue until complete decongestion
- N → Combination diuretic therapies[b]

Check serum creatinine and electrolytes at least every 24 h

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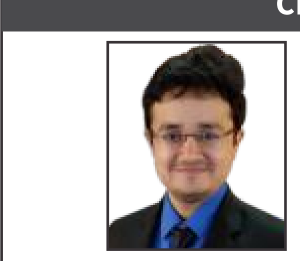

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PROGRAM HIGHLIGHTS

JAN 07 FRI — DAY-1

07:00 am - 05:00 pm

- Cardiovascular -Internal Medicine Symposium

SATELLITE SESSION

07:00 pm - 09:00 pm

- Cardiac Pharmacology & Therapeutics-I
- 10 Points to Remember
- Cardiology Guidelines
- Knowledge Which can Improve My Decision Making

JAN 08 SAT — DAY-2

07:00 am - 05:00 pm

- Cardiovascular - Internal Medicine Symposium
- Critical Care / Pulmonary Symposium
- Oncology Symposium

SATELLITE SESSION

07:00 pm - 09:00 pm

- Endocrinology Update
- Rheumatology Update
- Infectious Disease Update

JAN 09 SUN — DAY-3

07:00 am - 05:00 pm

- Cardiovascular Symposium
- Critical Care / Pulmonary Symposium
- Oncology Symposium
- Ortho Update
- Gynaec / IVF Update

STUDENT SESSION

Venue : CIMS Hospital

09:00 am - 02:00 pm

- Medical Quiz
- Echocardiography Workshop
- Poster Prize Distribution

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On acceptance of your poster, you will be awarded complimentary registration for the Conference.

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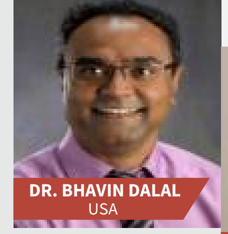

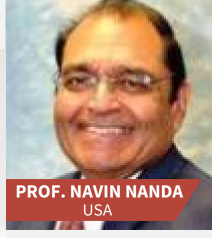

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