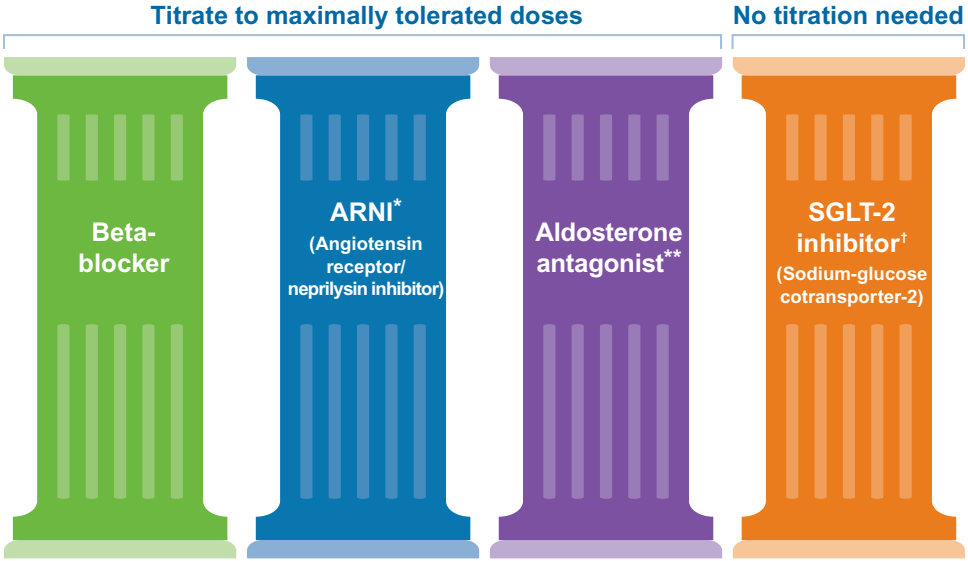
Pharmacotherapy for patients with HF with reduced EF[1]



Foundation

Self care, and use of diuretics as needed to optimize volume status:
Monitor signs and symptoms of HF (e.g., daily morning weights); limit sodium intake and avoid or reduce alcohol consumption; exercise as tolerated (independently or as part of cardiac rehabilitation); understand and adhere to medication regimen.

*Can use ACE inhibitor or ARB if unable to afford or tolerate ARNI. **Also known as mineralocorticoid receptor antagonist (MRA). †Dapagliflozin and empagliflozin were studied at 10 mg daily.

Achieving optimal benefit

- Titrate ACE inhibitors, ARBs, ARNI, and beta blockers to maximally tolerated doses to achieve the greatest mortality benefit.[2,3] Even a low dose of these drugs is better than no dose.
- Additional drug therapies for HFrEF can reduce hospitalization in selected patients:
  - Hydralazine plus isosorbide for Black patients
  - Ivabradine (Corlanor) for patients on maximally tolerated beta-blockers with heart rate > 70
  - Vericiguat (Verquvo) for patients on outpatient IV diuretics or after HF hospitalization
  - Digoxin if other options insufficient

IDIS Independent Drug Information Service
Alosa Health
PACE Pharmaceutical Assistance Contract for the Elderly

Balanced information for better care

These are general recommendations only; specific clinical decisions should be made by the treating clinician based on an individual patient's clinical condition. These materials were made possible by the PACE Program of the Department of Aging of the Commonwealth of Pennsylvania. Links to references can be found at **AlosaHealth.org**. Sept 2021

Evidence summary for pharmacologic treatment of HF

	Medication	Efficacy		Target dose	Monitor
		rEF*	pEF**		
	ARNI Angiotensin receptor/ neprilysin inhibitor (sacubitril/valsartan)			highest tolerated dose while maintaining adequate BP	serum potassium; renal function
OR	**ARB or ACE inhibitor**			highest tolerated dose while maintaining adequate BP	serum potassium; renal function
	beta blocker (bisoprolol, carvedilol, metoprolol XL)			highest dose tolerated for heart rate and blood pressure	heart rate
	aldosterone antagonist (spironolactone, eplerenone)			highest tolerated dose	serum potassium; renal function
	SGLT-2 inhibitor (dapagliflozin, empagliflozin)			10 mg daily, no dose titration	renal function; urogenital infection
	diuretic (bumetanide, furosemide, torsemide)			as needed for symptom control	volume status; serum electrolytes; renal function
	hydralazine/ isosorbide dinitrate†		—	highest tolerated dose while maintaining adequate BP	blood pressure
	digoxin		—	use lower doses in older patients	renal function; digoxin level
	ivabradine (Corlanor)		—	highest tolerated dose for heart rate	heart rate
	vericiguat (Verquvo)		—	titrate to a dose of 10 mg daily	blood pressure

Reduction in mortality and HF hospitalization; Reduction in HF hospitalization; No benefit; — Not studied. *rEF = reduced EF, systolic HF; **pEF = preserved EF, diastolic HF; †Mortality benefit for Black patients.

(1) Maddox TM, Januzzi JL, Jr., Allen LA, et al. 2021 Update to the 2017 ACC Expert Consensus Decision Pathway for Optimization of Heart Failure Treatment: Answers to 10 Pivotal Issues About Heart Failure With Reduced Ejection Fraction: A Report of the American College of Cardiology Solution Set Oversight Committee. *J Am Coll Cardiol.* 2021;77(6):772-810. **(2)** Bristow MR, Gilbert EM, Abraham WT, et al. Carvedilol produces dose-related improvements in left ventricular function and survival in subjects with chronic heart failure. MOCHA Investigators. *Circulation.* 1996;94(11):2807-2816. **(3)** Packer M, Poole-Wilson PA, Armstrong PW, et al. Comparative effects of low and high doses of the angiotensin-converting enzyme inhibitor, lisinopril, on morbidity and mortality in chronic heart failure. ATLAS Study Group. *Circulation.* 1999;100(23):2312-2318.