MANAGEMENT IN PATIENTS OF HEART FAILURE WITH REDUCED EJECTION FRACTION: A REVIEW OF 2022 AHA/ACC/HFSA GUIDELINES FOR HEART FAILURE MANAGEMENT

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Introduction. Heart failure is a complex clinical syndrome that results from any structural or functional impairment of ventricular filling or ejection of blood leading to cardinal manifestations like dyspnea, fatigue and fluid retention. Heart failure is still the leading cause of morbidity and mortality, more than 26 million people are affected globally. The 2022 heart failure guidelines present an evidence-based approach to managing heart failure patients with the goal of improving quality of life of patient.

Purpose. To highlight the new evidence based pharmacological therapy and guidelines in patients of heart failure with reduced ejection fraction (HFrEF).

Material and methods. A thorough literature search was carried out, which included studies, reviews, meta-analysis, clinical trials and other evidence based on human subjects that were published in indexed journals. A novel drug sacubitril-valsartan is a angiotensin receptor-neprilysin inhibitor (ARNI) was applied to the treatment of patients with HFrEF. Sodium-glucose cotransporter-2 inhibitors (SGLT-2i) have visible results in reducing cardiovascular events in type 2 diabetes mellitus patients with atherosclerotic cardiovascular disease or cardiac risk factors. EMPA-REG OUTCOMES study, DAPA-HF study and EMPEROR-Reduced trial have proved the benefits of SGLT-2 inhibitors in HF patients.

Results: Guideline-directed medical therapy (GDMT) for HF with reduced ejection fraction (HFrEF) now includes 4 medication classes. The 4 groups are: 1) renin-angiotensin system inhibition with ARNi, angiotensin-converting enzyme inhibitors (ACEi), or angiotensin (II) receptor blockers (ARB) alone; 2) beta blockers; 3) mineralocorticoid receptor antagonists (MRAs); and 4) the new group, SGLT2 inhibitors. In patients with chronic HFrEF NYHA class II or III who tolerate an ACEi or ARB, replacement by an ARNi is recommended to further reduce the morbidity and mortality. SGLT2 inhibitors are recommended irrespective of diabetes mellitus.

Conclusion. Clinical trials in heart failure have shown that antagonism of renin angiotensin aldosterone system (RAAS) and sympathetic nervous system (SNS) with renin angiotensin system inhibitors, mineralocorticoid receptor antagonists, and beta blockers reduces mortality and morbidity by attenuating or reversing ventricular and vascular remodeling. SGLT-2 inhibitors were developed for diabetes mellitus and later the beneficial effects on morbidity and mortality in HFrEF patients are proved. Benefits of SGLT-2 inhibitors are effects on cardiac and vascular remodeling, diuresis, Pro arrhythmia, renal function, and/or metabolic function or inflammation. But the exact effect of SGLT-2 inhibitor which has beneficial effects on morbidity and mortality of HErEF patients is yet to be determined or known.