Finerenone: A breakthrough drug for patients of HFmrEF and HFpEF

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Madam, Heart failure (HF) is one of the major cardiovascular diseases, affecting more than 64 million people worldwide.[1] HFmrEF and HFpEF are subtypes of HF characterised by LVEFs of 41-49% and ≥50%, respectively.[1] ARBs, ACE inhibitors, aldosterone antagonists and loop diuretics are some of the drug classes that have been used in the management of these disorders, to generally disappointing results.[2] Only SGLT2 inhibitors have demonstrated a tangible response.[2] Recently, a new drug, finerenone, has shown extremely promising results in pre-clinical and early clinical trials in patients with HFmrEF and HFpEF. Finerenone is a novel, first-in-class non-steroidal mineralocorticoid receptor antagonist (MRA) approved by the FDA to reduce the risk of kidney function decline, kidney failure, cardiovascular death, non-fatal heart attacks, and hospitalisation for heart failure in adults with chronic kidney disease associated with type 2 diabetes.[3] Pre-clinical trials in rodents have shown that finerenone improves many of the pathophysiological findings associated with HFpEF: it has marked anti-inflammatory and anti-fibrotic effects on the heart, it reduces cardiac accumulation of macrophages, cardiac hypertrophy, LV end-diastolic pressure, and improves LV systolic function.[3] A recently conducted clinical trial demonstrates that 20 or 40 mg of finerenone, given once daily, significantly reduces the incidence of hospitalization, worsening heart failure events and deaths due to cardiovascular causes in patients with HFmrEF or HFpEF.[4] Due to the scarcity of effective drugs available for this disorder, these clinical findings are especially important, as finerenone may improve the prognosis and quality of life of patients suffering from HF. According to a study conducted in 2019, the prevalence of HF in Pakistan is very high: 405.12 per 100,000 population.[5] It is, therefore, pertinent that finerenone be tested in our native Pakistani population to determine its safety and efficacy and that it is made readily available across the country so that patients of HF may benefit from this innovative drug.

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Submission complete: 16-09-2024 **First Revision received:** 11-10-2024
Acceptance: 22-01-2025 **Last Revision received:** 21-01-2025

DOI: https://doi.org/10.47391/JPMA.22199

Disclaimer: None.

Conflict of Interest: None.

Source of Funding: None.

References

1. Shahim B, Kapelios CJ, Savarese G, Lund LH. Global Public Health Burden of Heart Failure: An Updated Review. Card Fail Rev 2023;9:e11. doi: 10.15420/cfr.2023.05.
2. Varnado S, Ali HR, Trachtenberg B. Medical Therapy for Heart Failure with Preserved Ejection Fraction. Methodist Debakey Cardiovasc J 2022;18:17-26. doi: 10.14797/mdcvj.1162.
3. Kintscher U, Edelmann F. The non-steroidal mineralocorticoid receptor antagonist finerenone and heart failure with preserved ejection fraction. Cardiovasc Diabetol 2023;22:162. doi: 10.1186/s12933-023-01899-0.
4. Solomon SD, McMurray JJV, Vaduganathan M, Claggett B, Jhund PS, Desai AS, et al. Finerenone in Heart Failure with Mildly Reduced or Preserved Ejection Fraction. N Engl J Med 2024;391:1475-85. doi: 10.1056/NEJMoa2407107.
5. Cheema HA, Khan MA, Shahid A, Nawaz A, Ilyas A, Athar F, et al. Trends in the burden of heart failure in Pakistan, 1990-2019: an analysis of the global burden of disease study 2019. J Am Coll Cardiol 2024;83(Suppl 1):720. Doi: 10.1016/S0735-1097(24)02710-4.

AUTHORS' CONTRIBUTIONS:
AF: Concept, literature review, drafting, revision, editing and submission.