Finerenone, Pulse Pressure, and Cardiovascular Outcomes in Heart Failure with Mild Reduced and Preserved Ejection Fraction

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BACKGROUND

- Pulse pressure (PP), a marker of arterial stiffness and left ventricular afterload, is associated with adverse outcomes in heart failure with mildly reduced or preserved ejection fraction (HFmrEF/HFpEF).
- However, the effect of the non-steroidal MRA finerenone on PP in this population is unknown.

PURPOSE

1. To evaluate the association between baseline pulse pressure (PP) and cardiovascular (CV) outcomes in patients with HFmrEF/HFpEF;
2. To assess the effect of finerenone across the spectrum of baseline PP and on changes in PP over time.

METHODS

- FINEARTS-HF trial randomized symptomatic HF patients with LVEF ≥40% to finerenone vs placebo.
- The primary endpoint (CV death + total HF events) and total HF events were analyzed using the Lin-Wei-Yang-Ying (LWYY) model.
- Time-to-first outcome was analyzed using Cox proportional hazards models.
- Baseline PP was modeled continuously using restricted cubic splines (3 knots).
- Treatment effect modification across PP was assessed using treatment × continuous PP interaction terms.
- PP change over time was analyzed with mixed-effects linear models including fixed effects for treatment, visit, region, LVEF (<60% or ≥60%), and a treatment × visit interaction, with patient-level random intercepts.

RESULTS

5,999 (99%) of FINEARTS-HF participants with available baseline PP data

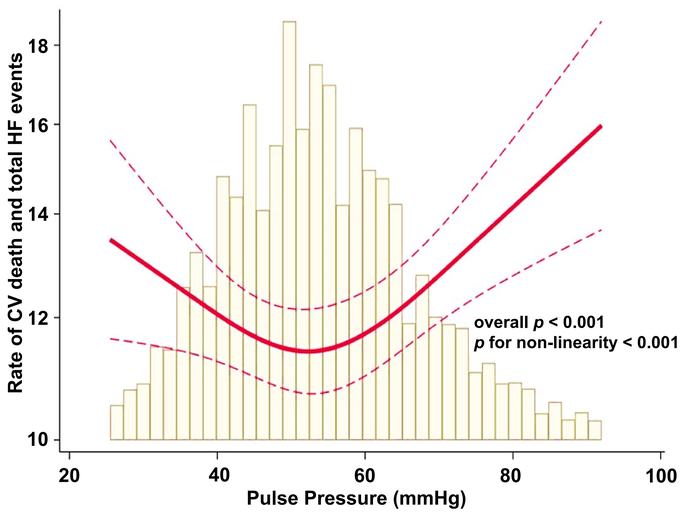
mean age 72±9 years
45.5% female
mean PP 53±13 mmHg

PULSE PRESSURE (PP)= SBP - DBP

SBP, systolic blood pressure
DBP, diastolic blood pressure

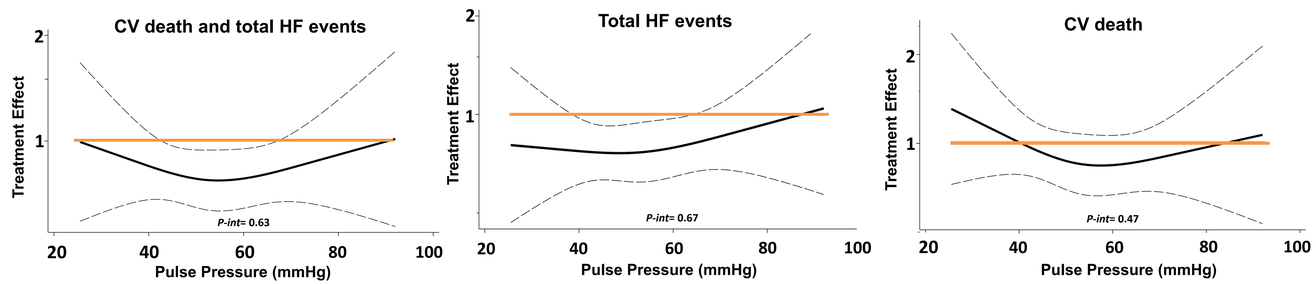
Higher PP groups (≥40 mmHg) vs <40 mmHg
- Older age, higher BMI
- Lower eGFR, lower NT-proBNP, higher LVEF
- ↑ Diabetes and stroke
- ↓ Atrial fibrillation and prior HF hospitalization
- ↑ ACEi/ARB use, ↓ SGLT2i use

Baseline PP levels and the Predicted Rate of the Primary Endpoint

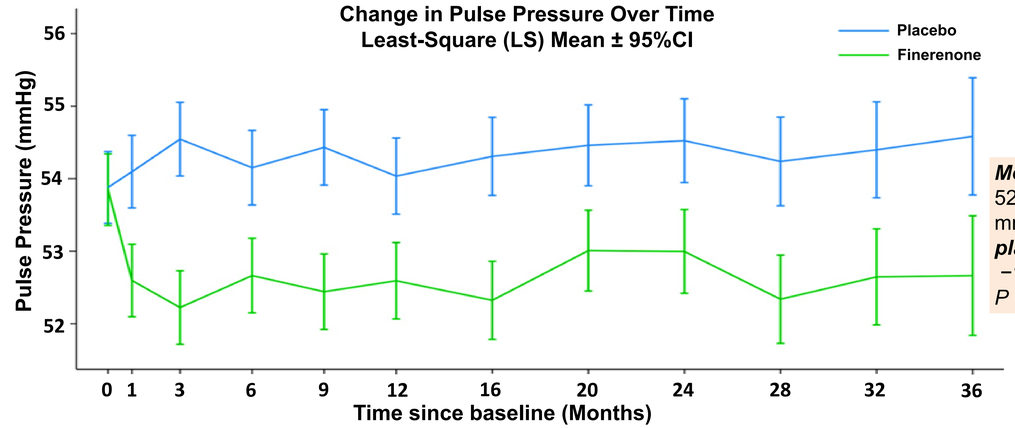


Adjusted for: age, sex, NYHA class, BMI, race, heart rate, eGFR, LVEF, log NT-proBNP, prior MI, diabetes, AF, hypertension, stroke, smoking, prior HF hospitalization, ACEi/ARB/ARNI, SGLT2i, β-blockers, calcium channel blockers, and study drug.

Treatment Effect (Ratio) of Finerenone vs. Placebo on CV Outcomes across PP levels at baseline



Treatment Effects of Finerenone vs. Placebo on Change in PP over 36 months



Month 36 LS mean PP:
52.7 mmHg (finerenone) vs 54.6 mmHg (placebo);
placebo-adjusted difference:
−1.9 mmHg (95% CI −3.1 to −0.8), *P* = 0.001.

Serious Adverse Events (SAE)

Pulse Pressure Category	Treatment Arm	SAE n (%)
<40 mmHg	Finerenone	162 (38.1%)
	Placebo	157 (36.7%)
40-55mmHg	Finerenone	518 (39.7%)
	Placebo	462 (36.2%)
>55 mmHg	Finerenone	533 (42.2%)
	Placebo	538 (41.8%)

CONCLUSION

Baseline PP showed a J-shaped relationship with CV risk in patients with HFmrEF/HFpEF, with the lowest risk observed at 40 to 55 mmHg. Finerenone was safe, modestly reduced PP over time, and consistently improved CV outcomes across the PP spectrum.

DISCLOSURE: The FINEARTS-HF trial was funded by Bayer.

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