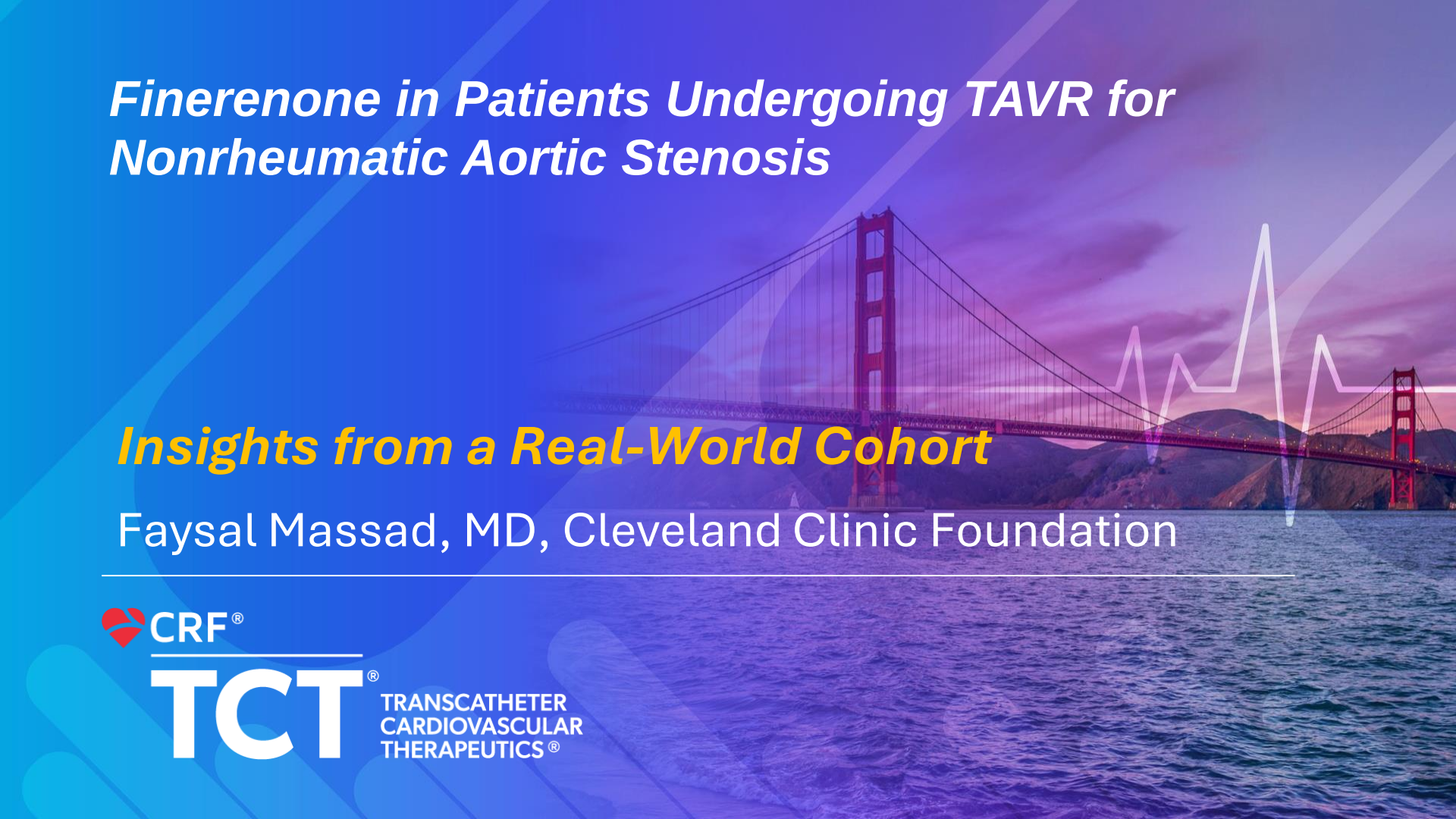
Finerenone in Patients Undergoing TAVR for Nonrheumatic Aortic Stenosis

Insights from a Real-World Cohort

Faysal Massad, MD, Cleveland Clinic Foundation



CRF®

TCT® TRANSCATHETER CARDIOVASCULAR THERAPEUTICS®

Disclosure of Relevant Financial Relationships

I, Faysal Massad DO NOT have any financial relationships to disclose.

Acknowledgment

- We would like to express our sincere gratitude to all co-authors and collaborators for their contributions to this work:
- **Co-authors**
  Osamah Badwan, MD, Akiva Rosenzveig, MD, Fawzi Zghyer, MD, Zaid Shahrori, MD, Taha Hatab, MD, Radwan Alkhatib, MD, Abdullah Alqatarneh, Samir Kapadia, MD
- **Institutional Support**
  Heart, Vascular & Thoracic Institute
  Cleveland Clinic, Cleveland, OH, USA

Background

- TAVR is the standard treatment for *severe nonrheumatic aortic stenosis (AS)* in older adults
- TAVR patients often have coexisting comorbidities, including heart failure, chronic kidney disease and type 2 diabetes
- TAVR patients are often receiving mineralocorticoid receptor antagonists (MRAs) as part of the medical therapy

Background

- Finerenone is a newer nonsteroidal MRA with high receptor selectivity and fewer hormonal side effects compared to spironolactone or eplerenone
- Large RCTs (FIDELIO-DKD, FIGARO-DKD, FINEHEARTS-HF) demonstrated cardiovascular and renal benefits, *but excluded patients with significant valvular disease or recent TAVR*

Study objective

- To evaluate *real-world outcomes* of finerenone vs. other traiditional MRAs in patients undergoing TAVR for nonrheumatic AS

Study Design

- Data Source: Trinetx U.S. Collaborative Network - deidentified electronic health records from *103 healthcare organizations.*
- Study period: 2010-2025
- Population: Adults with nonrheumatic AS undergoing TAVR
- Two exposure groups
  - Finerenone group: n=67
  - Steroidal MRA group (spironolactone or eplerenone): n=12,379

Study Design

- Propensity Score Matching was performed:
- 1:1 nearest-neighbor matching for demographics, comorbidities, labs, and medications.
- Final matched cohorts: **62 patients per group**.
- Baseline characteristics well balanced (age ≈ 80 years, ~60 % White, high prevalence of HF and CKD).

Outcomes

- Primary**:** all-cause mortality, heart-failure (HF) exacerbation, all-cause hospitalization.
- Secondary: acute myocardial infarction.
- Follow-up at 1 year and 3 years post-TAVR.
- Cox proportional-hazards models to estimate hazard ratios (HR) and p-values.
- Sensitivity analysis: excluded deaths within 30 days after TAVR to account for early procedural mortality.

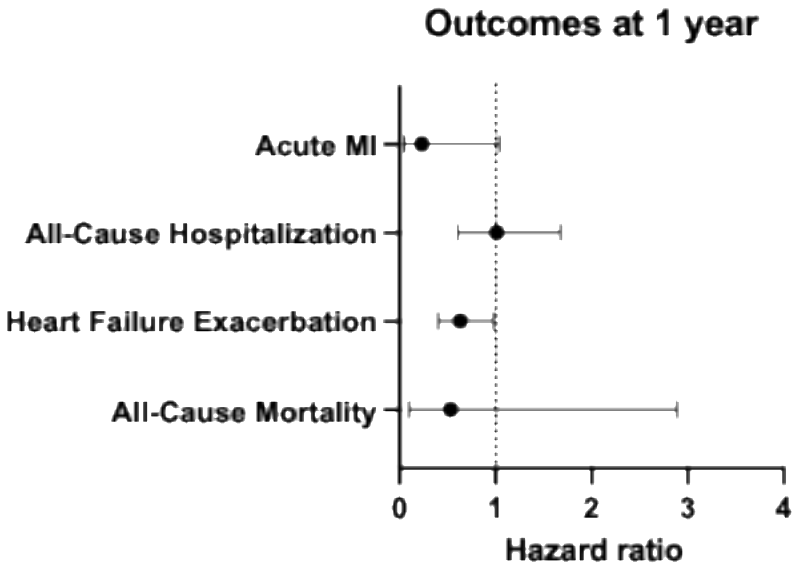
Population characterstics

Variable	Finerenone (Before, n = 67)	Other MRAs (Before, n = 12 379)	P value (Before)	Finerenone (After, n = 62)	Other MRAs (After, n = 62)	P value (After)	SMD (After)
Demographics							
Age (years, mean ± SD)	79.6 ± 6.6	80.7 ± 8.8	0.32	79.9 ± 6.6	80.7 ± 8.0	0.55	0.11
Female, n (%)	21 (31.3)	5169 (41.8)	0.09	21 (33.9)	25 (40.3)	0.46	0.13
White, n (%)	38 (56.7)	10 347 (83.6)	<0.001	37 (59.7)	37 (59.7)	1.00	<0.01
Comorbidities							
Hypertension, n (%)	58 (86.6)	10 136 (81.9)	0.32	53 (85.5)	54 (87.1)	0.79	0.05
Diabetes mellitus, n (%)	59 (88.1)	5889 (47.6)	<0.001	55 (88.7)	55 (88.7)	1.00	<0.01
Heart failure, n (%)	52 (77.6)	11 192 (90.4)	<0.001	49 (79.0)	47 (75.8)	0.67	0.08
Chronic kidney disease, n (%)	54 (80.6)	5630 (45.5)	<0.001	49 (79.0)	50 (80.6)	0.82	0.04
Ischemic heart disease, n (%)	21 (31.3)	2771 (22.4)	0.08	21 (33.9)	22 (35.5)	0.57	0.05
Peripheral vascular disease, n (%)	20 (29.9)	2624 (21.2)	0.08	21 (33.9)	16 (25.8)	0.56	0.20
Atrial fibrillation, n (%)	19 (28.4)	5829 (47.1)	0.002	18 (29.0)	20 (32.3)	0.70	0.07
Presence of coronary angioplasty, n (%)	21 (31.3)	2771 (22.4)	0.08	19 (30.6)	22 (35.5)	0.33	0.18
Obstructive sleep apnea, n (%)	19 (28.4)	3501 (28.3)	0.989	18 (29.0)	25 (40.3)	0.19	0.24

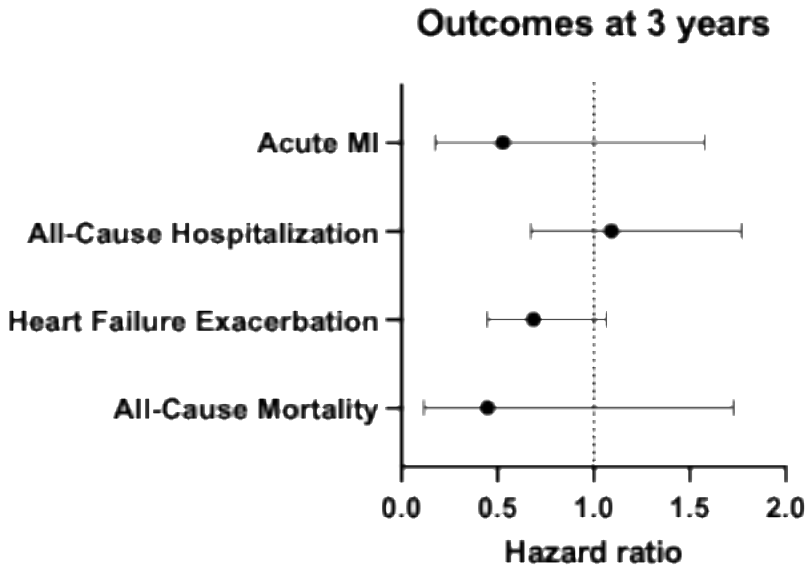
Population characterstics

Variable	Finerenone (Before, n = 67)	Other MRAs (Before, n = 12 379)	P value (Before)	Finerenone (After, n = 62)	Other MRAs (After, n = 62)	P value (After)	SMD (After)
Medications							
Beta blockers, n (%)	59 (88.1)	10 410 (84.1)	0.38	54 (87.1)	56 (90.3)	0.57	0.09
Diuretics, n (%)	66 (98.5)	12 018 (97.1)	0.49	61 (98.4)	62 (100.0)	0.32	0.10
SGLT2 inhibitors, n (%)	37 (55.2)	2326 (18.8)	<0.001	33 (53.2)	31 (50.0)	0.72	0.07
GLP-1 receptor agonists, n (%)	22 (32.8)	569 (4.6)	<0.001	20 (32.3)	18 (29.0)	0.70	0.09
Angiotensin II inhibitors / ARBs, n (%)	45 (67.2)	5223 (42.2)	<0.001	41 (66.1)	42 (67.7)	0.85	0.05
Metformin, n (%)	17 (25.4)	2026 (16.4)	0.05	17 (27.4)	16 (25.8)	0.84	0.04
Laboratory values (mean ± SD)							
Creatinine (mg/dL)	1.8 ± 1.1	1.2 ± 0.8	<0.001	1.8 ± 1.1	1.4 ± 0.8	0.38	0.06
Hemoglobin (g/dL)	11.7 ± 2.3	11.2 ± 2.2	0.06	11.6 ± 2.2	11.5 ± 2.2	0.73	0.06
Hemoglobin A1c (%)	6.5 ± 1.1	6.3 ± 1.4	0.15	6.5 ± 1.1	6.6 ± 1.0	0.54	0.05
LVEF (%)	64.3 ± 9.9	51.2 ± 16.6	0.01	64.3 ± 9.9	54.5 ± 14.0	0.09	0.36
BMI (kg/m²)	29.0 ± 6.6	30.0 ± 7.2	0.41	29.2 ± 6.6	31.0 ± 8.6	0.33	0.15

Outcomes



Finerenone better



No difference

Limitations

- Retrospective cohort study; potential for residual confounding despite propensity score matching.
- Causality cannot be inferred — results are hypothesis-generating only.

Limitations

- TriNetX uses deidentified EHR data, which may include coding inaccuracies and incomplete clinical details.
- Medication adherence and post-TAVR management strategies could not be confirmed.
- Outcomes (e.g., HF exacerbation) rely on diagnostic codes and may capture both inpatient and outpatient events.

Limitations

- Small finerenone cohort (n=67; matched n=62) limits statistical power, especially for long-term outcomes.
- Three-year outcomes may be affected by loss to follow-up and under-ascertainment of deaths occurring outside participating health systems.
- Results apply primarily to U.S. TAVR patients with high comorbidity burden; generalizability to other populations is uncertain.

Take-home Message

- In a real-world, multicenter TriNetX cohort of patients undergoing TAVR for nonrheumatic aortic stenosis, finerenone use was associated with a lower risk of heart-failure exacerbation at 1 year compared with steroidal MRAs.
- The early benefit did not persist at 3 years, and there were no differences in all-cause mortality, hospitalization, myocardial infarction

Take-home Message

- The observed short-term benefit aligns with prior finerenone trials (FIDELIO-DKD, FIGARO-DKD, FINEARTS-HF) showing reduced HF events, but this is the first analysis to explore outcomes after TAVR.
- Findings are hypothesis-generating and do not support initiating finerenone solely for post-TAVR care, but suggest potential incremental benefit in patients who already have approved indications (CKD with diabetes or HFpEF/HFmrEF)

Next Steps

- Prospective studies are needed to confirm whether finerenone improves outcomes in this structural heart disease population.