Dapagliflozin in Black and White Patients With Heart Failure

A patient-level pooled meta-analysis of DAPA-HF and DELIVER

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On behalf of the DAPA-HF and DELIVER Committees and Investigators

Disclosures

- Advisory board honoraria: Bayer
- Consultant honoraria: AstraZeneca; Novartis
- Travel grants: AstraZeneca

Introduction: Race and heart failure

- Black patients with HF have been reported to have worse clinical outcomes than other patients with HF
- Black individuals may respond differently to certain HF treatments than others, e.g., RASi, certain BBs, and hydralazine
- Black individuals are under-represented in individual HF trials, which makes it difficult to obtain a robust estimate of the effect of a therapy and to ensure generalizability of the results to this high-risk population

Objective

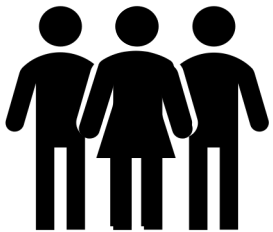
To examine the efficacy and safety of dapagliflozin, compared with placebo, in Black and White patients across the range of LVEF

DAPA-HF and DELIVER trial designs

DAPA-HF	DELIVER
LVEF ≤ 40%	LVEF > 40%
NYHA II-IV	NYHA II-IV
Elevated NT-proBNP	Elevated NT-proBNP
Guideline-recommended therapy	Structural heart disease

N=11,007

Double-blind treatment period

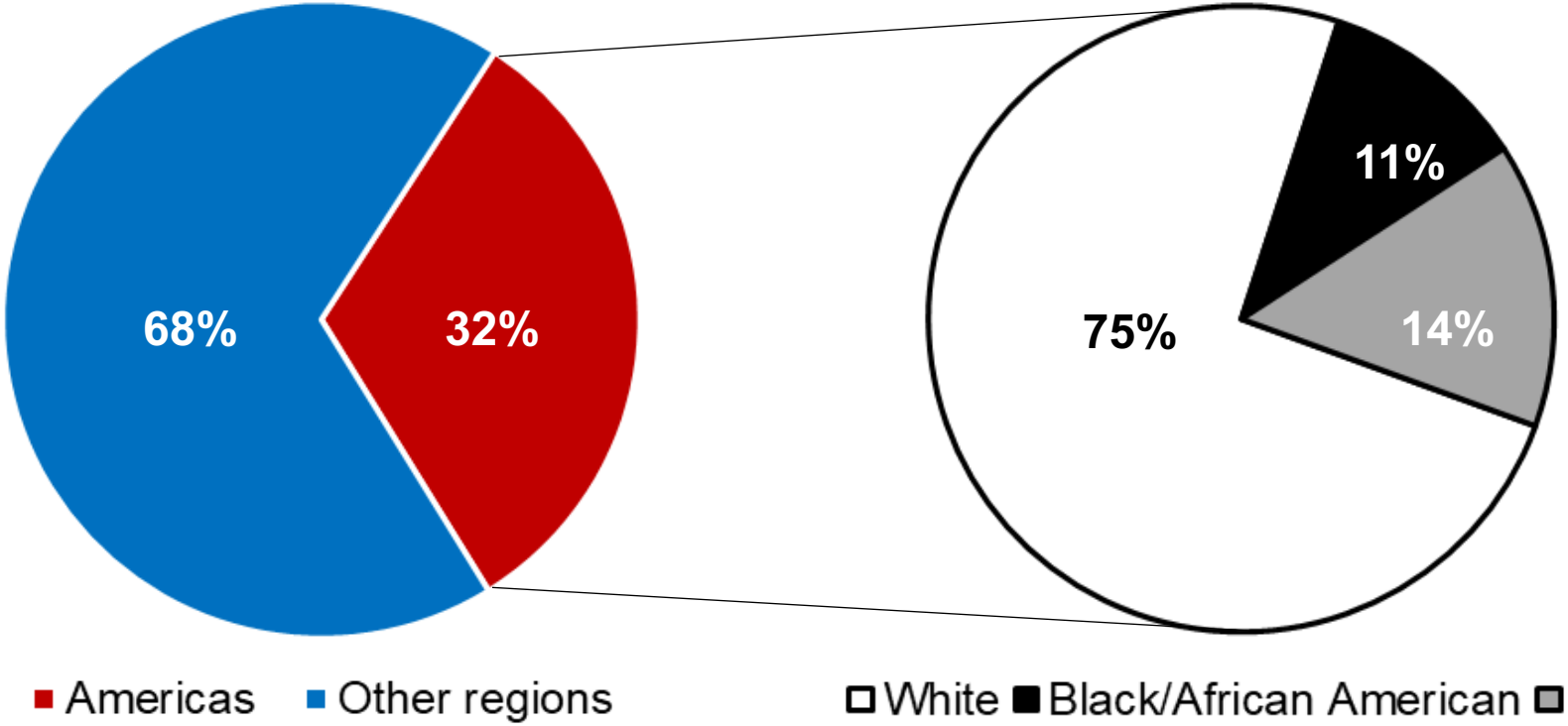


Dapagliflozin 10 mg once daily

Placebo

Primary outcome: Worsening HF or cardiovascular death

Self-identified race



Black and White patients enrolled in the Americas are included in this analysis

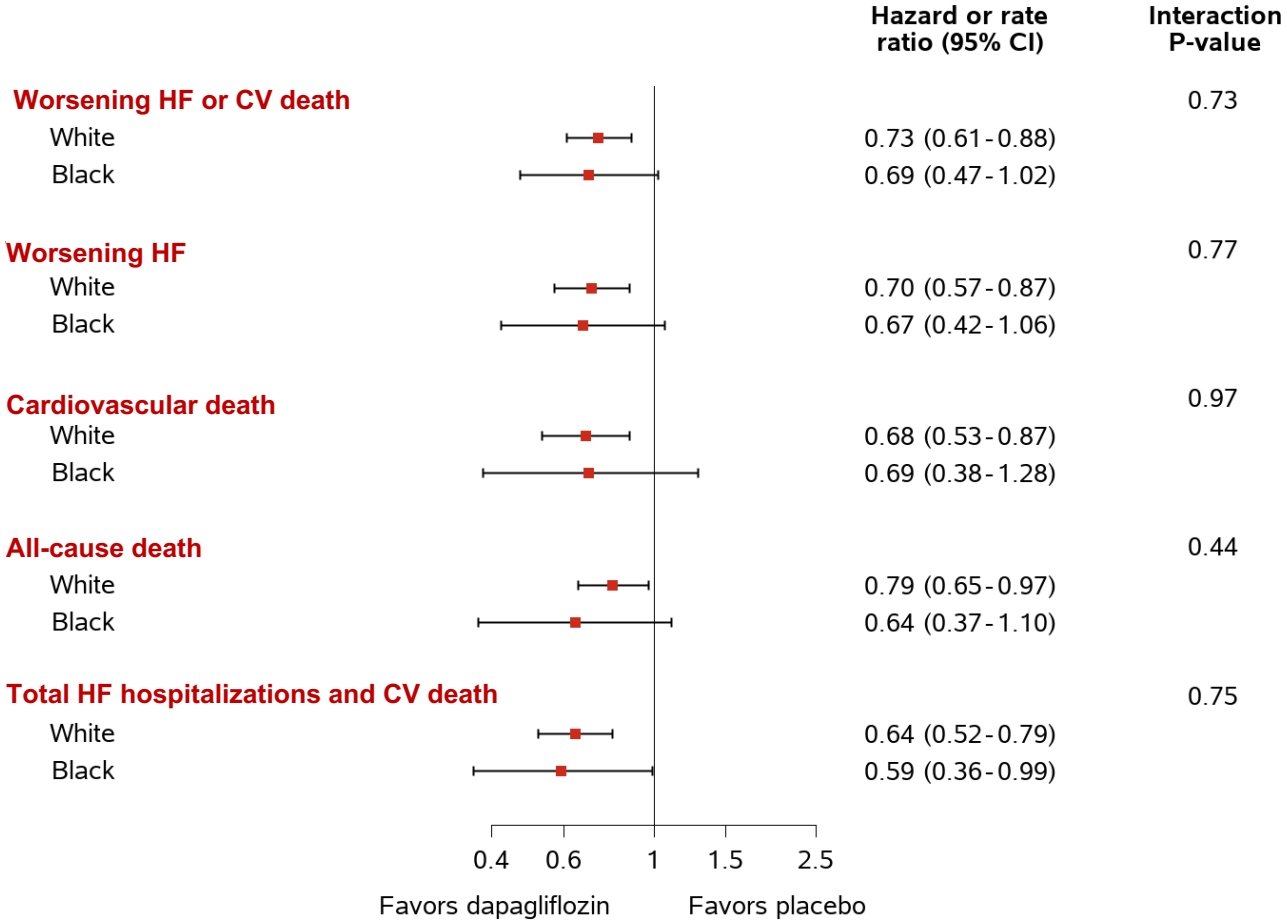
Selected baseline characteristics by race

	White N=2626	Black N=381	P-value
Age (years), mean	70	64	<0.001
Female sex, %	34	40	0.02
Systolic blood pressure (mmHg), mean	124	127	0.001
KCCQ-TSS, mean	69	64	<0.001
NYHA class III/IV, %	23	28	0.03
LVEF (%), mean	44	39	<0.001
NT-proBNP (pg/mL), median	1184	1296	0.27
eGFR (mL/min/1.73m^2), mean	65	61	<0.001
Type 2 diabetes, %	46	53	0.01
Atrial fibrillation, %	43	28	<0.001
Myocardial infarction, %	34	26	0.002

Baseline medication by race

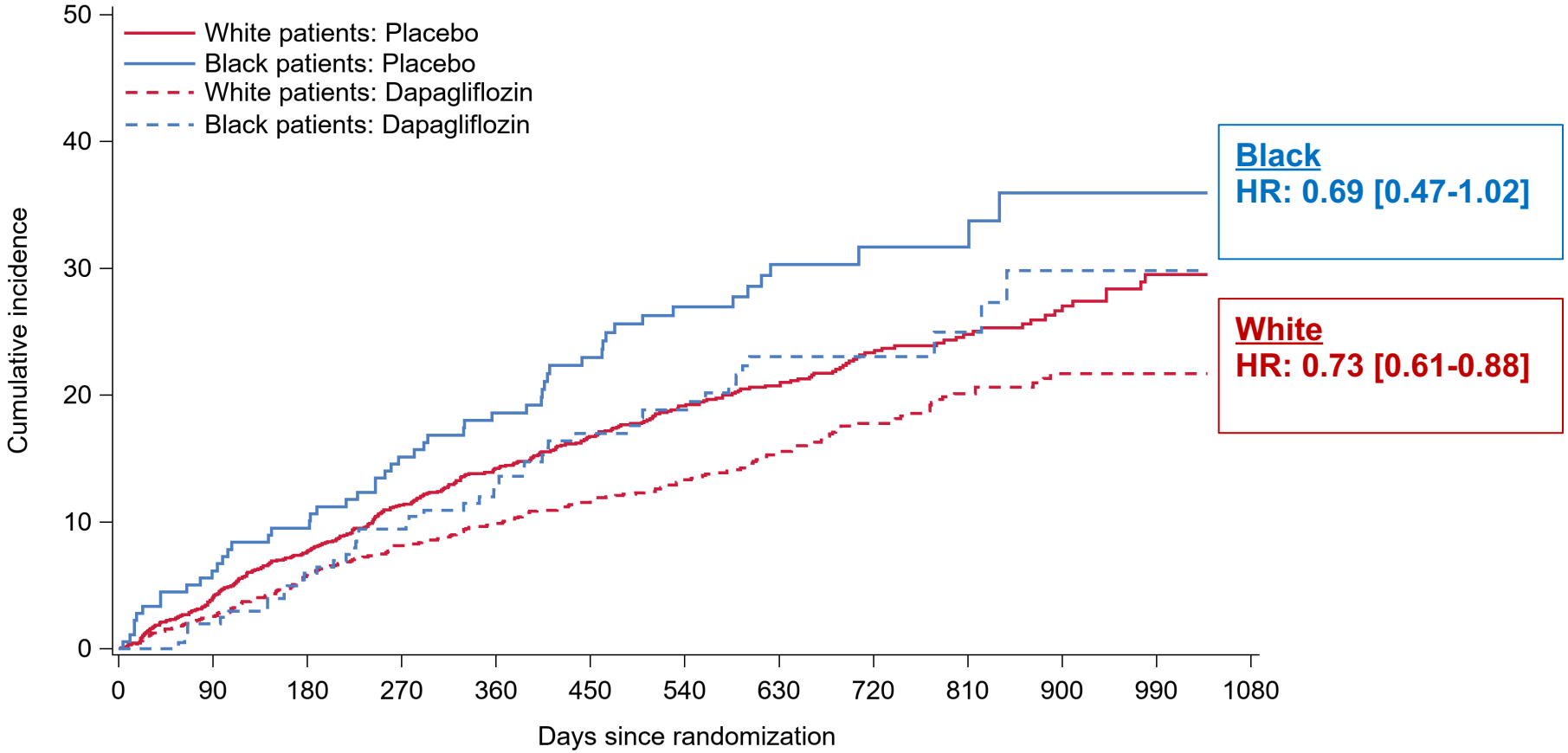
	White N=2626	Black N=381	P-value
ACEi/ARB, %	73	74	0.62
ARNI, %	11	14	0.17
Beta-blocker, %	89	93	0.04
MRA, %	48	52	0.14
Hydralazine, %	5	22	<0.001
Loop diuretic, %	76	87	<0.001
ICD/CRT-D, %	17	23	0.002

Treatment effect by race: Clinical outcomes



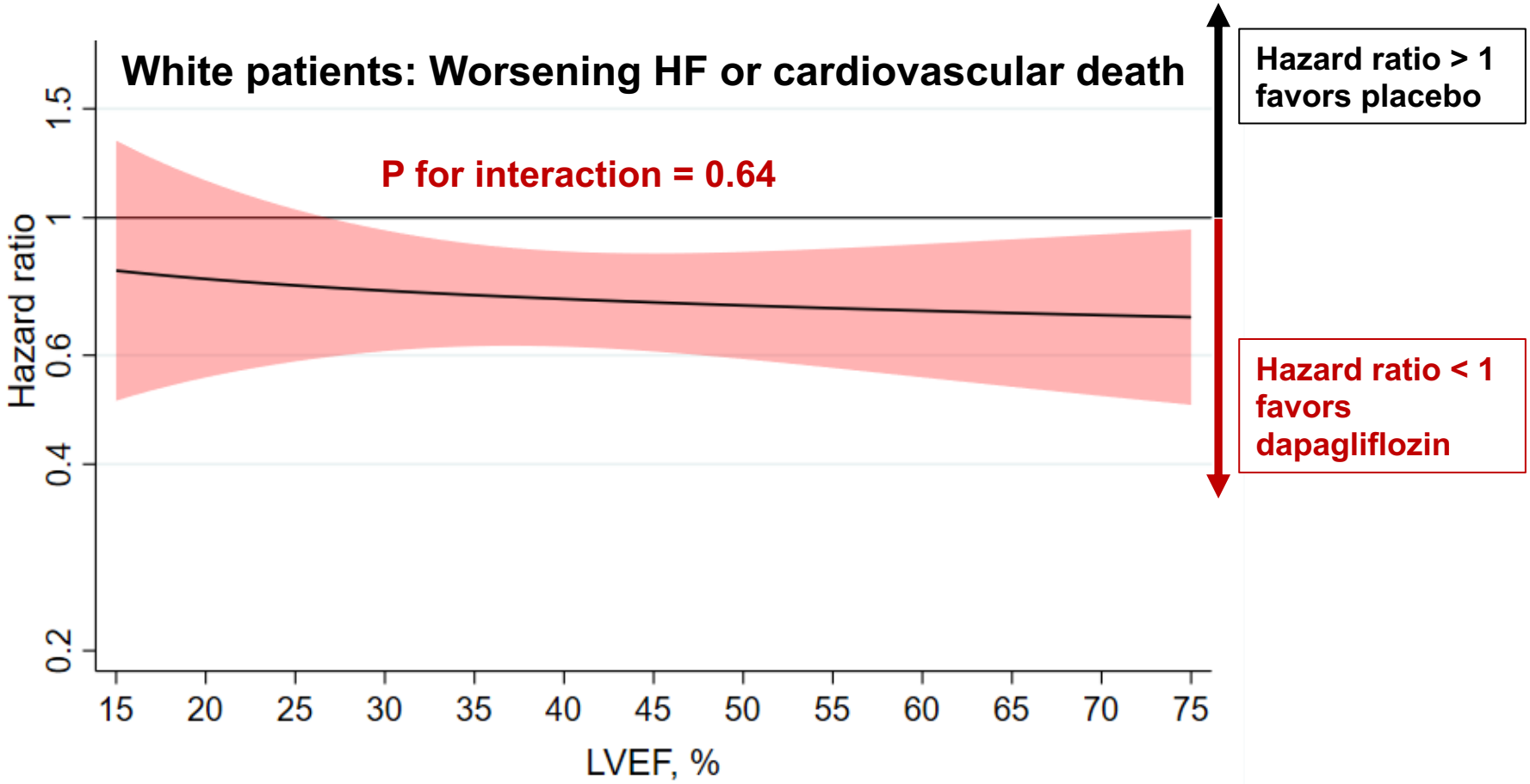
Undetermined causes of death were considered cardiovascular death; worsening HF was defined as an unplanned HF hospitalization or an urgent HF visit requiring intravenous diuretics.

Treatment effect by race: Primary outcome



NNT: Number of patients needed to treat with dapagliflozin to prevent one event over the median follow-up

Treatment effect by race and LVEF



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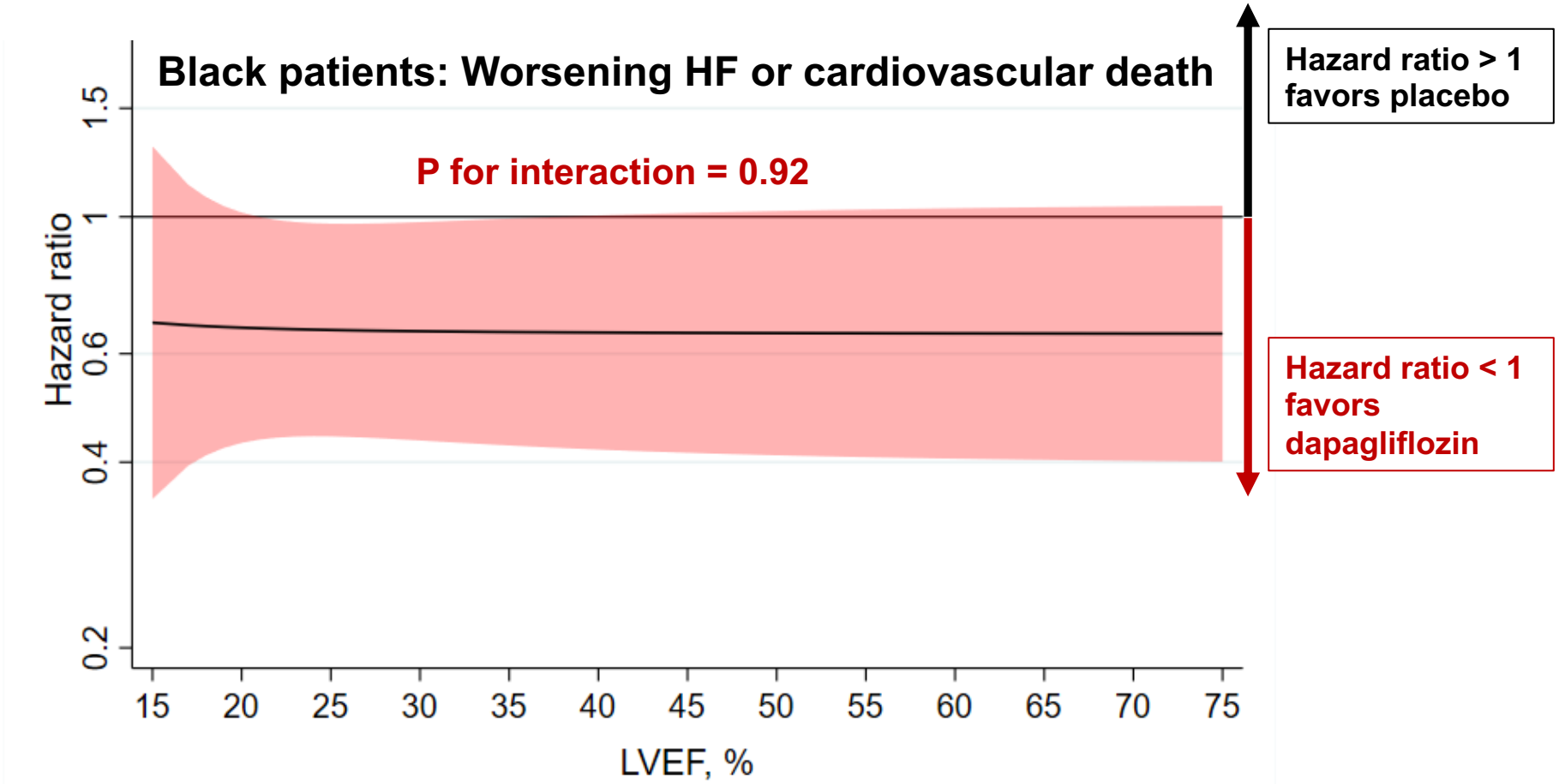
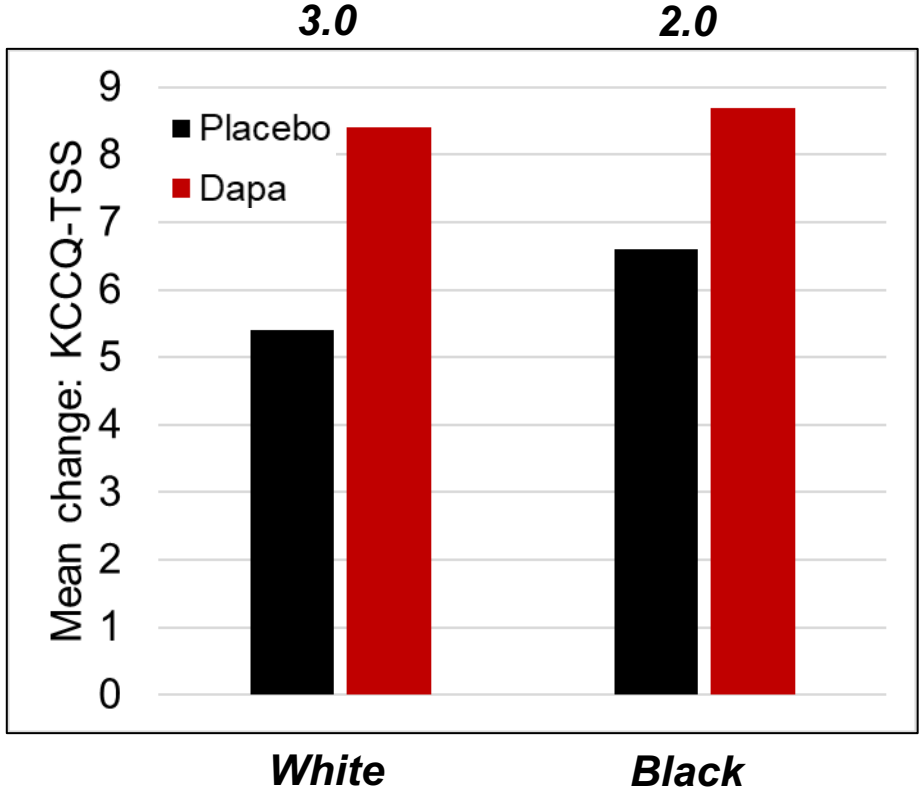
Treatment effect by race and LVEF



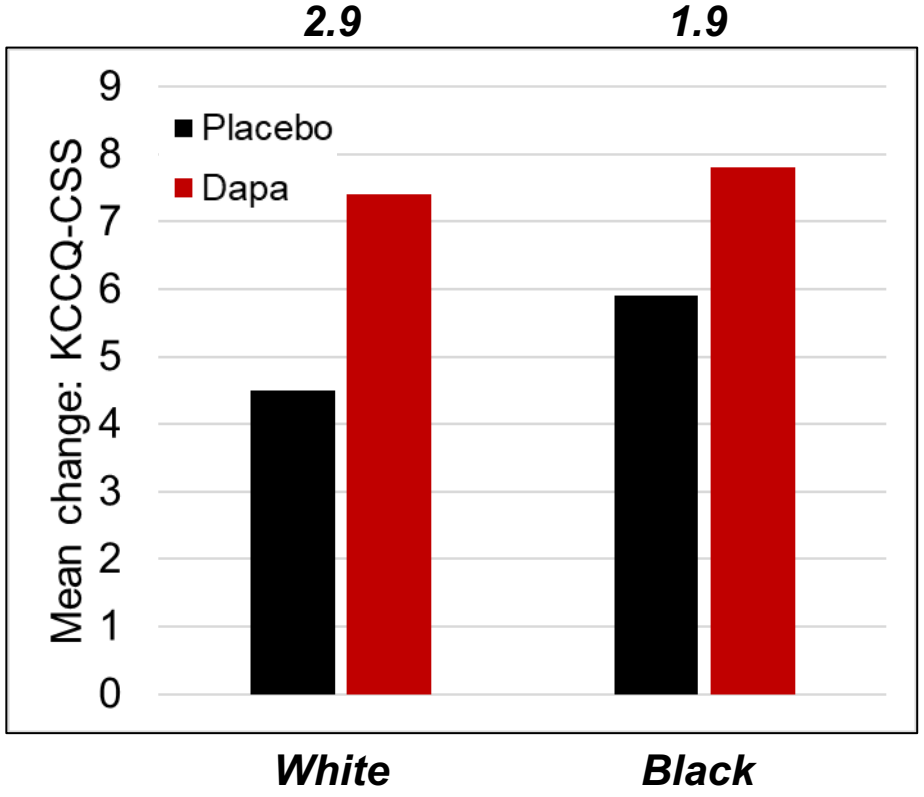
Undetermined causes of death were considered cardiovascular death; worsening HF was defined as an unplanned HF hospitalization or an urgent HF visit requiring intravenous diuretics.

Treatment effect by race: Health status and symptoms

Mean change in KCCQ-TSS from randomization to 8 months (P_{int}=0.22)



Mean change in KCCQ-CSS from randomization to 8 months (P_{int}=0.29)



Treatment discontinuation and adverse events

% of patients	White		Black		P-value*
	Placebo N=1332	Dapa N=1291	Placebo N=179	Dapa N=202	
Discontinuation for any reason	13.4	12.2	12.8	17.8	0.11
Discontinuation due to adverse event	6.5	4.6	6.1	5.4	0.62
Volume depletion**	5.6	6.8	8.4	6.4	0.24
Renal adverse event**	6.9	6.0	9.5	13.4	0.14
Amputation	0.8	0.7	0.6	0.5	0.97
Major hypoglycemia	0.3	0.3	1.1	1.0	0.90
Diabetic ketoacidosis	0.0	0.1	0.0	0.0	N/A

**P-value is for interaction between race and treatment effect on the occurrence of adverse events.*
***Any serious adverse event or adverse event that led to discontinuation in DELIVER.*

Conclusions: Dapagliflozin in Black and White Patients

- Dapagliflozin reduced the risk of worsening HF, CV death, and all-cause death, across the range of LVEF to a similar extent in Black and White patients
- Dapagliflozin improved symptoms and quality of life in both Black and White patients
- Dapagliflozin was safe and well-tolerated irrespective of Black and White race
- Treatment of patients with proven therapies in high-risk populations can further reduce pre-existing healthcare disparities