Predictors of Persistent Medication Use in Diabetic Kidney Disease (DKD)

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Abstract: TH-PO255

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- **CATEGORY:** CKD (Non-Dialysis)

Background/Objective

- Chronic kidney disease (CKD) affects 37 million individuals in the United States, and 850 million people worldwide
- By 2045, 784 million individuals worldwide will be affected by diabetes
- >40% of patients with CKD have diabetic kidney disease (DKD)
- KDIGO and the ADA recommend the use of guideline directed medical therapy (GDMT; ACE inhibitors/ARB, SGLT2 inhibitors, GLP 1 receptor agonists) to reduce the risk of kidney and cardiovascular disease in these patients
- The current study aimed to identify predictors of persistent GDMT use, according to prescribing rates for patients with diabetes and CKD

2020 KDIGO *Kidney Int*. 2020;98:S1-S115.
2022 KDIGO *Kidney Int*. 2022
Draznin B, et al. *Diab Care* 2022;45:S125-S43.

Methods and Materials

Study design	Retrospective study of real world data
Population	CURE-CKD Registry of >3.9 million adults and children with and/or at-risk for CKD in Western US, 2006-2020 Adults ≥18 years with diabetes, CKD, and eGFR >15 mL/min/1.73 m^2, 2015-2020
Data	Laboratory, demographics, prescription and administrative diagnostic data At baseline period: from entry through 365 days Followed up: until the last medication management associated encounter in 2019-2020
Data analysis	Multivariable, binary, logistic regression to identify predictors of persistent GDMTs Sensitivity analysis for subset of patients with UACR/UPCR data at baseline
Outcome	Persistence of prescribing GDMTs for ≥90 *cumulative* days

Tuttle KR, et al. *JAMA Netw Open*. 2019;2(12); Norris KC, et al. *BMC Nephrol*. 2019;20(1):416.

Characteristics of patients with diabetes and CKD, N=39,158

Demographics at entry	
Sex, n (%)	
Men	19,743 (50.4)
Women	19,415 (49.6)
Race and ethnicity, n (%)	
American Indian or Alaska Native	352 (0.9)
Asian	3,210 (8.2)
Black	2,266 (5.8)
Hispanic or Latino(a)	1,596 (4.1)
Native Hawaiian or Pacific Islander	484 (1.2)
White	25,142 (64.2)
Other[a]	4,546 (11.6)
Not Reported	1,562 (4.0)
Age, y, mean, SD	70, 14
Primary health insurance, n (%)	
Medicare	22,169 (56.6)
Medicaid	2,455 (6.3)
Commercial	9,313 (23.8)
Uninsured	4,041 (10.3)
Unknown	1,180 (3.0)

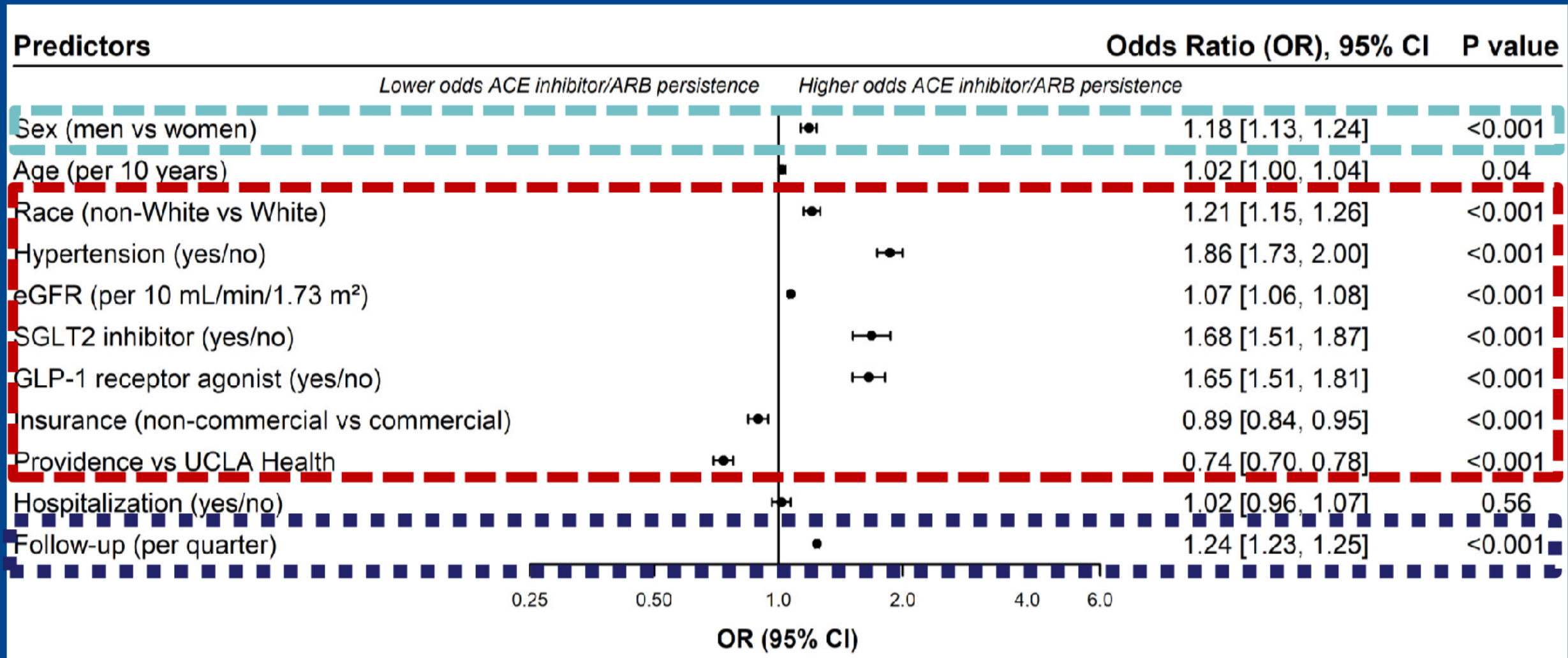
Clinical characteristics at baseline	
Follow, quarters, median (IQR)	6.5 (3.8-7.7)
Hypertension, n (%)	34,000 (86.8)
eGFR, mL/min/1.73 m²	
n (%)	39,158 (100.0)
mean, SD	57.5, 23.0
SBP, mm Hg	
n (%)	36,994 (94.5)
mean, SD	133, 17
HbA1c, %	
n (%)	25,798 (65.9)
median (IQR)	6.9 (6.3-8.0)
UACR, mg/g	
n (%)	17,783 (45.4)
median (IQR)	57.5 (31.7-158.2)
UPCR, g/g	
n (%)	2,025 (5.2)
median (IQR)	0.5 (0.2-1.7)

PRESCRIBED MEDICATIONS

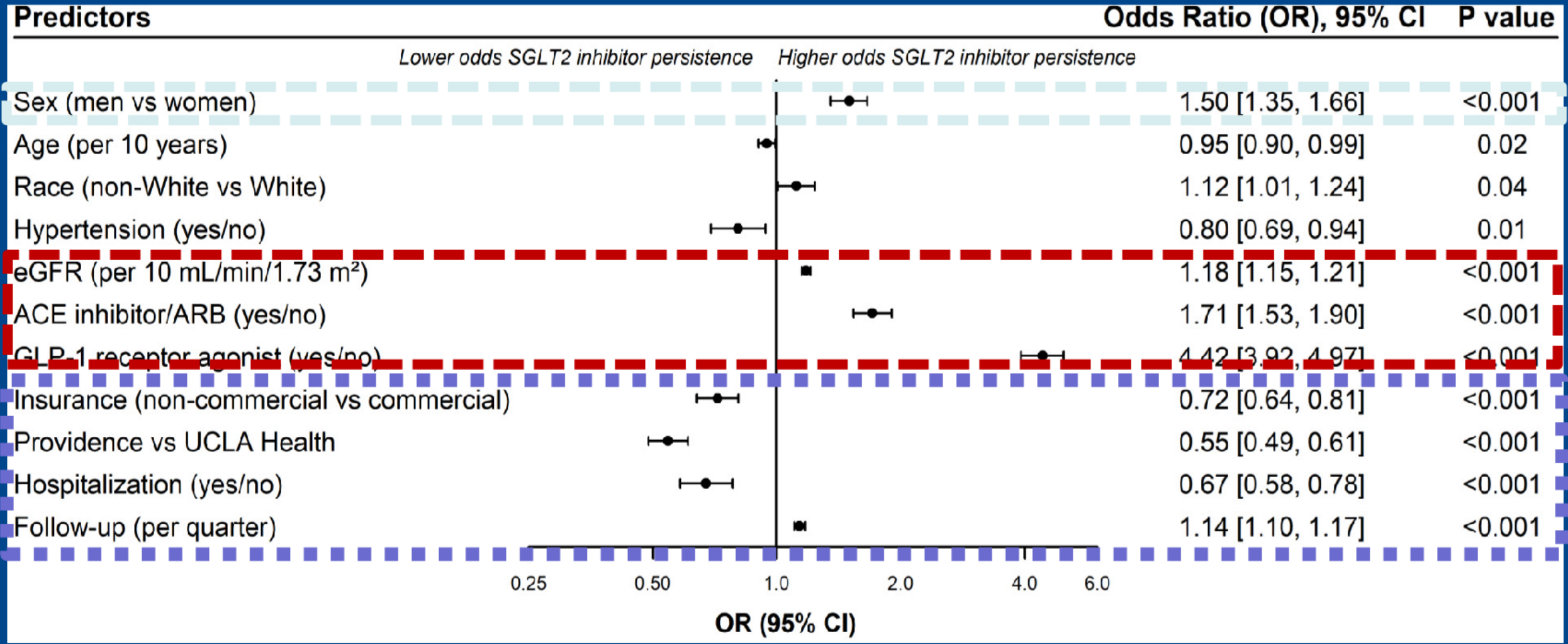
Medications at baseline n (%)	
ACE inhibitor/ARB	27,690 (70.7)
SGLT2 inhibitor	2,228 (5.7)
GLP-1 receptor agonist	2,663 (6.8)
MRA	3,870 (9.8)
NSAID	14,773 (37.7)
PPI	15,991 (40.8)

Guideline directed medical therapy persistence n (%)	
ACE inhibitor/ARB	15,806 (40.4)
SGLT2 inhibitor	1,831 (4.7)
GLP-1 receptor agonist	2,477 (6.3)

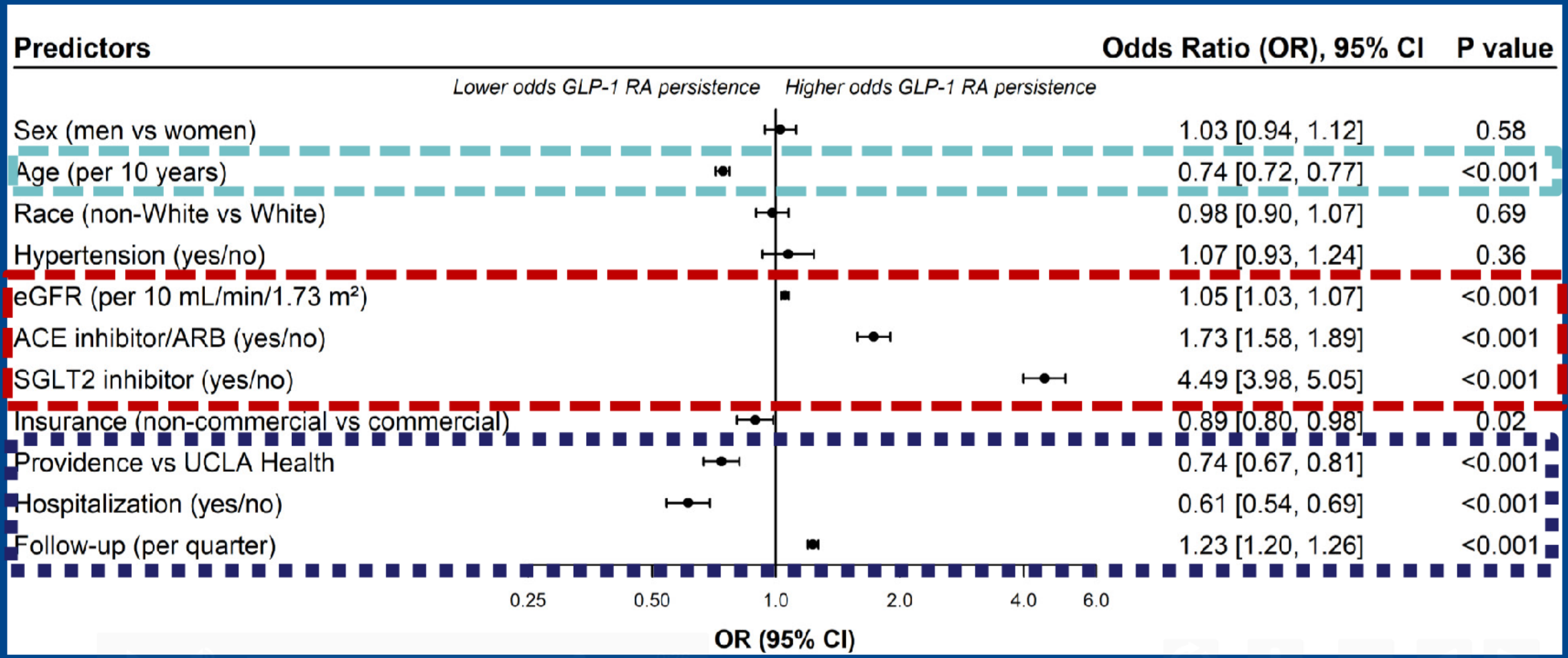
Predictors of persistent ACE Inhibitor/ARBs in patients with diabetes and CKD



Predictors of Persistent SGLT2 Inhibitors in Patients with Diabetes and CKD



Predictors of persistent GLP-1 receptor agonists in patients with diabetes and CKD



SENSITIVITY ANALYSIS

- Severely elevated albuminuria (UACR >300 mg/g) or proteinuria (UPCR >0.5 g/g) predicted persistent use of GDMTs:
  - ACE inhibitors/ARBs prescriptions (OR=1.29, 95%CI=1.19-1.40) p<0.001,
  - or GLP 1 receptor agonists (OR=1.18, 95% CI=1.04-1.34) p=0.01
  - with overall model stability (data not shown)

Conclusion

- Prescribing GDMT in patients with diabetes and CKD was suboptimal at baseline and waned quickly
- Lack of commercial health insurance and the health system predicted under-prescribing and lower persistent use of GDMT
- The study suggests: adequate insurance coverage and equitable access to care are important targets to optimize persistent use of GDMTs in patients with diabetes and CKD

References

- 2020 KDIGO *Kidney Int*. 2020;98:S1-S115
- 2022 KDIGO *Kidney Int*. 2022
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