Gaps in guideline-indicated prescribing of GLP1RA/SGLT2i in patients with T2DM and cardiorenal disease according to ADA Standards of Care

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Aim

Evaluate the treatment gap in prescribing guideline-directed therapies in patients with T2D and cardiorenal disease using EHR data from a large academic medical center (UT Southwestern Medical Center, Dallas, Texas, USA).

Introduction

- Treatment guidelines from major societies recommend the preferential use of glucagon-like peptide-1 receptor agonists (GLP-1 RA) and sodium glucose co-transporter-2 inhibitors (SGLT2i) in patients with T2D and certain metabolic co-morbidities as they have been shown to:
- ✓ GLP1 RA → reduce major cardiovascular events (MACE) in people with T2D and pre-existent (or at high risk for) cardiovascular disease (CVD) and reduce albuminuria. They are also preferentially recommended in those with advanced chronic kidney disease (CKD) and unable to use SGLT2i.
- ✓ SGLT2i → reduce MACE in those with pre-existent CVD, the risk of heart failure hospitalizations in those with CVD or prior HF, and the risk of CKD progression in those with CKD.

Methods

- ❑ An EHR based registry was created to identify patients with T2D and CVD, heart failure, and/or renal disease and data pertaining to demographics, lab and imaging results, ICD-9/10 diagnoses, prescriptions since 2006, encounter location, and insurance coverage was extracted.
- ❑ Key inclusion criteria:
  - Age ≥ 18 years
  - T2D defined using the SNOMED code 44054006
  - ≥ 1 eligible (primary care, endocrinology, nephrology, cardiology, clinics) encounter after Jan 1, 2019 to the date of data extraction, November 2022.
- ❑ Subgroups of population with indication for treatment with (1) SGLT2i only, (2) SGLT2 primary, (3) SGLT2i or GLP1RA, (4) GLP-1 RA only were defined using the recommendations contained in the ADA 2022 Standards of Care (Figure 1).
- ❑ The registry was created in the UT Southwestern Medical Center Epic EHR.

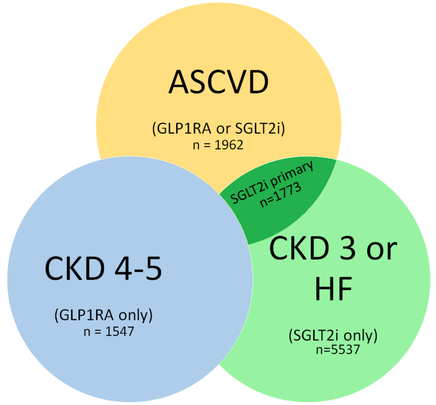

Figure 1: Venn diagram showing patients with type 2 diabetes and cardiorenal disease (n=10,819) by eligibility category (not drawn to scale)

Results

- ❑ The treatment gap for patients (N=10,819) *ever* prescribed the guideline-recommended medications ranged from 45.5% for those who should have been prescribed either an SGLT2i or GLP1RA to 72% for those eligible for GLP1RA only (Figure 3, Panel A).
- ❑ The treatment gap for patients *currently* prescribed the guideline-recommended medication was >20% higher than the patients that were *ever* prescribed across all subgroups, ranging from 73.5% to 92% across the subgroups (Figure 3, Panel B).
- ❑ Of the eligible patients with ASCVD who should have been treated with an SGLT2i or GLP-1RA, 45.5% *never* received a prescription, while 73.5% did not have a *current* prescription on file.
- ❑ Of the eligible patients with ASCVD and either HF or CKD stage 3, who should have been treated with an SGLT2i, 54% *never* received a prescription, while 79% did not have a *current* prescription on file.
- ❑ Of the eligible patients with HFrEF or HFpEF or CKD stage 3, who should have been treated with an SGLT2i, 63% *never* received a prescription, while 83% did not have a *current* prescription on file.
- ❑ Of the eligible patients with advanced CKD, who should have been treated with a GLP-1 RA, 72% *never* received a prescription, while 92% did not have a *current* prescription on file.
- ❑ Patients who were females, older, had Medicare coverage, or had advanced CKD were less likely to be prescribed while patients with ASCVD and higher BMI were more likely to be prescribed SGLT2i or GLP1RA according to the guidelines.

	Not prescribed (n=6448)	Prescribed (n=4371)
Mean age, y	69	65
Sex, Female, (n)	50% (3226)	42% (1836)
Ethnicity		
Hispanic/Latino, (n)	17.4% (1123)	16.3% (714)
Non-Hispanic/Latino, (n)	76.6% (4941)	78.7% (3440)
Unknown	6% (384)	5% (217)
Race		
Asian, (n)	4.6% (295)	5% (219)
Black, (n)	26.1% (1680)	23.6% (1030)
White, (n)	53.4% (3442)	56.6% (2474)
Other, (n)	6% (390)	6% (263)
Unknown, (n)	9.9% (641)	8.8% (385)
BMI		
Mean, kg/m2	32.8	33.8
Third Party Payor		
Medicare, (n)	63% (4062)	52.7% (2302)
Commercial, (n)	27.8% (1791)	39.8% (1738)
Other, (n)	9.2% (595)	7.6% (331)
Co-morbidities		
Hypertension, (n)	80.7% (5204)	83% (3628)
ASCVD, (n)	36.6% (2357)	47.1% (2058)
HFrEF/HFpEF, (n)	22.7% (1461)	28% (1223)
CKD 3-5, (n)	52.5% (3383)	41.1% (1796)

Figure 2: Baseline characteristics of patients that were included in the registry classified by at least one prescription of cardiorenal agents during the study period (n=10,819)

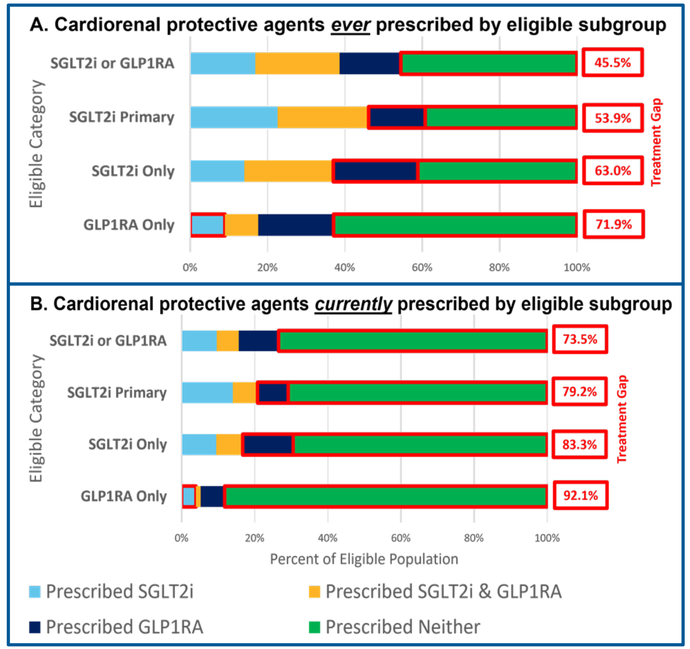

Figure 3: Cardiorenal protective agents (A) ever and (B) currently prescribed to patients with type 2 diabetes and cardiorenal disease (n=10,819) by eligibility category

Discussion

- ➢ Large treatment gaps exist in prescribing guideline-directed cardiorenal protective agents in high-risk patients with type 2 diabetes.
- ➢ While all subgroups were sub-optimally treated, those with CKD stage 4/5 had the largest treatment gap.
- ➢ These findings will inform multi-faceted interventions geared to improve the care of such high-risk patients including addressing reasons behind sub-optimal prescription rates with a possible EHR based best practice advisory.

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