 In a large and diverse real-world EHR dataset, we found no significant difference in time to composite MI, stroke, or hospitalization for heart failure between patients with T2DM first initiated on treatment with SGLT2i vs. metformin. However, those initiated on SGLT2i were less likely to achieve normal A1c and experienced smaller A1c reductions by 12 months.

**METHODS**

**DATA**

- A subset of real-world EHR data from the Truveta platform, which aggregates and normalizes de-identified EHR data from >25 US health care systems (HCS) comprising >20,000 clinics and 700 hospitals.
- Data included conditions, medications requests (e.g., prescriptions), laboratory values, and demographics.

**POPULATION**

- New-user study of treatment-naive adult patients with T2DM, newly prescribed SGLT2i or metformin as monotherapy between 2016 and 2022 and who received regular care at a Truveta HCS
- Excluded patients with history of gestational diabetes, organ transplant, ESRD, or HIV and those missing age or gender

**OUTCOMES**

- Patients were followed over time for clinical and biomarker (A1C) outcomes:
  1. Time to composite cardiovascular event (myocardial infarction, ischemic stroke, hospitalization for heart failure)
  2. Time to normal (<7%) A1C (among those with elevated A1C at baseline)
  3. Change in 12-month A1C
- Patients censored at the first of 5 years, administrative end of data (12/31/22), discontinuation, or initiation of the comparator treatment.

**TREATMENT EFFECT ESTIMATION**

- 1:1 nearest neighbors propensity score matching to balance populations on baseline characteristics
- Matched Cox proportional hazards model, adjusted for residual confounding, for time to event outcomes
- Matched linear regression to compare changes 12-month A1C

**RESULTS**

**POPULATION CHARACTERISTICS**

- N = 135,729 patients met our study criteria: N = 12,848 remained after 1:1 propensity score matching.

**CARDIOVASCULAR OUTCOMES**

- Composite cardiovascular outcomes did not differ significantly between those on an SGLT2i and metformin (hazard ratio: 1.035 [95% CI: 0.991, 1.066])
- Individual cardiovascular endpoints did not differ significantly between those on an SGLT2i vs. metformin

**A1C OUTCOMES**

- Among those with elevated baseline A1c (>7), those initiating SGLT2i (vs metformin) were less likely to achieve normal A1c (hazard ratio: 0.68 [95% CI: 0.64, 0.72])
- Among those with baseline and 12-month A1c values available (n = 5,472), SGLT2i use was associated with a smaller absolute decrease in A1c by 0.25% (0.19% - 0.32%)

**CONCLUSIONS**

- Patients initiated on an SGLT2i had similar risk of cardiovascular events to those initiated on metformin, but experienced a smaller 12-month reduction in A1c and were less likely to achieve normal A1c.
- Future work is needed to compare the relative benefits among those with vs. without an indication for initiation with SGLT2i.

**Disclosure:** PJR, SG, RL, SG, PS, and NS are employees of Truveta Inc.