Assessing Appropriate Utilization of SGLT2 Inhibitors in Type II Diabetic Patients

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Background

- Type 2 diabetes mellitus (T2DM) is the leading cause of kidney failure.[1]
- According to the Centers for Disease Control and Prevention (CDC) as well as the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), 1 in 3 adults with diabetes has chronic kidney disease.[1,2].
- Sodium-glucose cotransporter 2 inhibitors (SGLT2i) improve glycemic control in type 2 diabetics by inhibiting glucose reuptake in the proximal tubule of the kidney, which induces urinary glucose secretion.[3]
- The ADA recommends patients with heart failure or chronic kidney disease with an eGFR of 30-60 ml/min/1.73 m^2 to be started on an SGLT2i because it has been shown to have cardiovascular and renal protective properties.[4]

Objective

The purpose of this study is to determine if SGLT2 inhibitors were used appropriately in type II diabetic patients at El Rio Health Center per current guideline recommendations.

Methods

- Retrospective cohort study, conducted at El Rio Health Center in which a de-identified list of patients with type II diabetes on SGLT2 inhibitors was evaluated. Data was collected from July 2019-July 2020.
- Subjects included type II diabetic patients of El Rio Health Center that were 18 years and older on SGLT2 inhibitors.
- Data was analyzed using a Chi-Square Test to evaluate the categorical data.

Results

Of the 234 patients evaluated, the average age of the subjects was 69 years of age with 54% being of Caucasian descent. Of the patients evaluated, 47.8% were female and 52.2% were male.

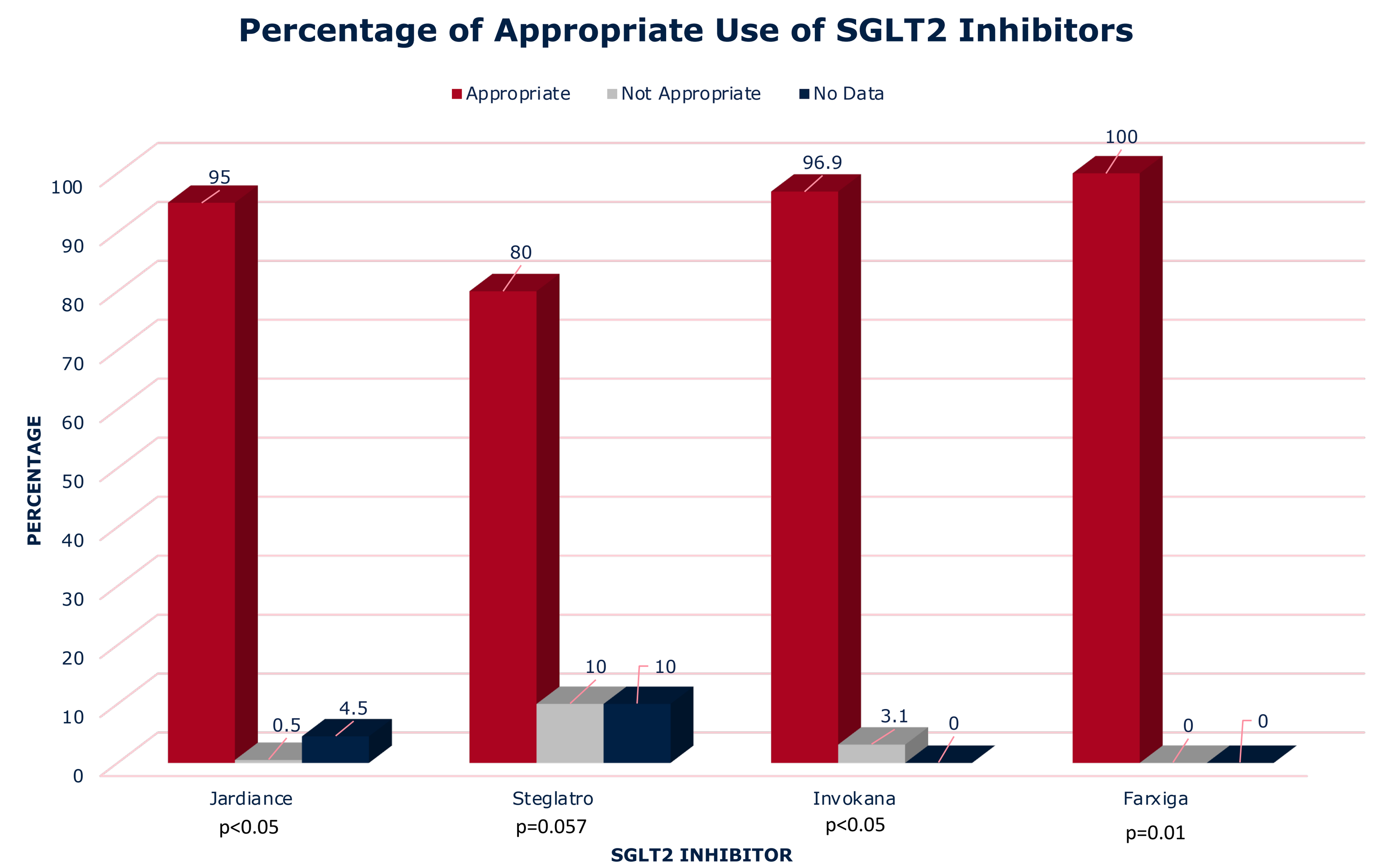
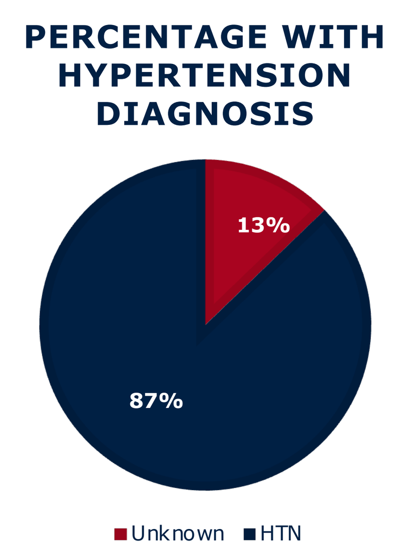
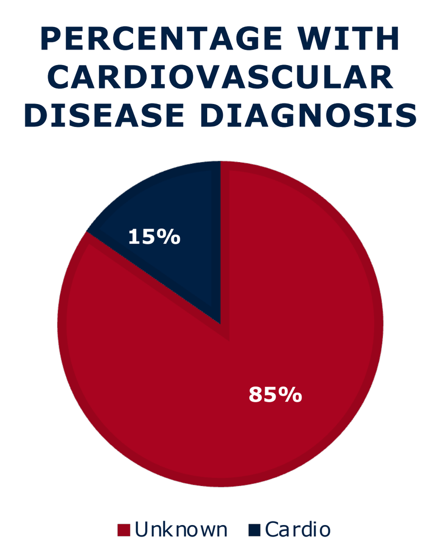


Chart 1: Appropriate SGLT2 inhibitor use





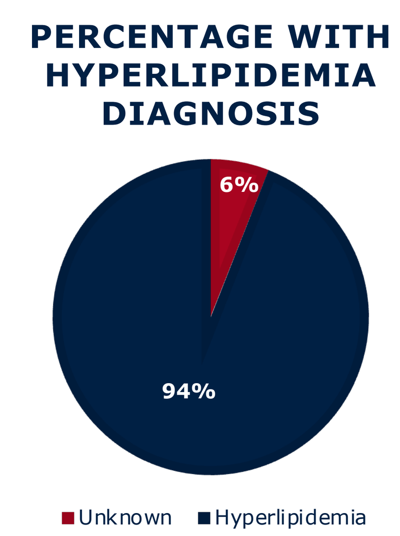


Chart 2: Prevalence of Hypertension

Chart 3: Prevalence of Cardiovascular Disease

Chart 4: Prevalence of Hyperlipidemia

Conclusions

- In type II diabetic patients at El Rio Health Center, majority of patients were appropriately prescribed SGLT2 inhibitors based on current dosing guideline recommendations.
- From this data, it can be inferred that El Rio appropriately follows evidence-based guideline recommendations for renal function when prescribing SGLT2 inhibitors.
- Based on our results, for future studies the evaluation of change in eGFR from initiation of therapy to present day via a pre and post analysis would be clinically significant. Our initial proposal illustrated current studies evaluating similar outcomes.

Limitations

- One major limitation was that since only patients from El Rio Health Center were analyzed, our study results lack generalizability.
- eGFR was not analyzed throughout the patient's entire duration of medication therapy.
- With the data here were many unknown or missing data points which may have influenced the findings.
- Regarding the type of cardiovascular disease (i.e., heart failure), given that SGLT2 inhibitors have cardioprotective benefits, it remained undifferentiated if this disease state was a parameter considered when initiating therapy.

References

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3. Standards of Care (PDF). *Diabetes Care*. Published online February 28, 2021. Accessed March 3, 2021.
4. Practice Guidelines Resources | American Diabetes Association. Accessed March 27, 2020.