Prescribing patterns of SGLT-2 inhibitors and GLP-1 agonist in patients with both DM and ASCVD

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Background

- The National Diabetes Statistics Report for 2015 showed that approximately 30.2 million people were estimated to have diabetes mellitus with about 7.2 million not knowing they have the condition.[1] Diabetes mellitus (DM) is a risk factor for Atherosclerotic Cardiovascular Disease (ASCVD) causing an overlap in these patients.[2]
- According to the 2019 ADA Standards of Medical Care for Diabetes, the next pharmacotherapy step after Metformin for patients with ASCVD is a GLP-1 agonist or SGLT-2 inhibitor.[3]
- This recommendation comes from recent trials such as Liraglutide and Cardiovascular Outcomes in Type 2 Diabetes (LEADER), which showed patients on liraglutide versus placebo had a lower rate of first ASCVD event in patients with T2DM.[4] The trial Empagliflozin, Cardiovascular Outcomes, and Mortality in Type 2 Diabetes (EMPA-REG) showed patients with T2DM and ASCVD risk, those receiving empagliflozin vs placebo had lower rates of primary composite cardiovascular outcome supporting SGLT-2 use.[5]
- The current agents that have shown ASCVD benefit of GLP-1 agonists are liraglutide, exenatide, dulaglutide and of SGLT-2 inhibitors are empagliflozin and canagliflozin.

OBJECTIVE

- Determine the number of patients with DM/ASCVD overlap who are not on a GLP-1 agonist and/or SGLT-2 inhibitor within five Cone Health Group Clinics.
- Develop background information on this population to be used for an intervention-based study in the future to add or switch to one of the prospective agents if able.
- Educate prescribers about how many patients with DM/ASCVD overlap are not on ADA 2019 Standards of Care guideline-directed therapy.

Disclosures

None of the authors involved in this study have financial or other conflicts of interest to disclose.

METHODS

- Electronic medical record (EMR) reports were run with inclusion criteria including age >/= 18 years old, current patients with a primary care physician within one of the five designated Cone Health Medical group clinics (Internal Medicine, Family Medicine, Community Health and Wellness, Patient Care Center, and Lebauer Heart Care). The first reports ran with criteria just for T2DM patients. Criteria was selected based off current ICD-10 codes for type T2DM. Next reports were run to include only patients with the overlap of DM and ASCVD (examples: TIA, MI, CAD, PVD, etc).
- Final reports were run to exclude patients who were currently already on a SGLT-2 inhibitors or GLP-1 agonist between 05/31/2017-05/31/2019. This was done by excluding medications by class and by specific names within the EMR report criteria.
- Filtering was done with different SGLT-2 inhibitors and GLP-1 agonists available in the United States and for the agents either individually and in combination with other diabetes agents such as metformin and insulin.
- To account for crossover between the different clinics, a patient list was developed in the EMR that all patients pulled from the reports were then added. As patients were added, any duplicate patients were filtered so that they would not appear more than once on this list.

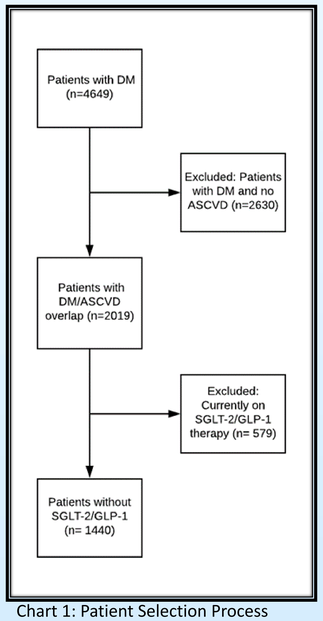

Chart 1: Patient Selection Process

RESULTS/OUTCOMES

- 4649 patients in the five clinics had DM alone. Of these patients, 2019 patients were determined to have the DM/ASCVD overlap. A total of 1440 patients did not currently have a SGLT-2 inhibitor or GLP-1 agonist on their medication list 71.3%).
- The breakdown includes 225 at Internal Medicine, 261 at Family Medicine, 309 at Cone Health and Wellness, 766 at Lebauer Heart Care, and 110 at Patient Care Center.
- There was some crossover between the patients of the clinics resulting in n=1671 before this consideration and n=1440 after the list were filtered for crossover.
- Of these patients 759 (52.7%) were female and 681 (47.3%) were male.
- There are approximately 563 patients with an A1c > 7.5 (This value was evaluated since less stringent values can be selected for patients based off comorbidities).

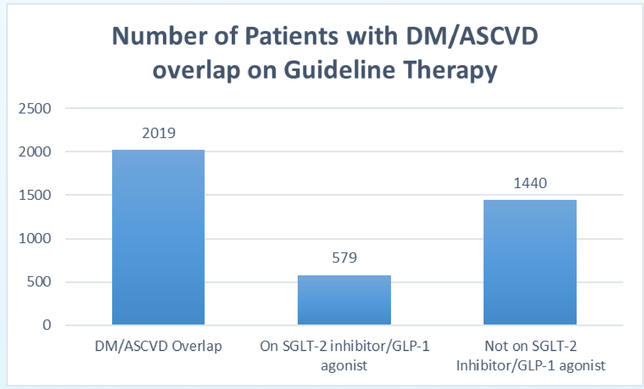

Chart 2: Number of patients who are or are not on guideline therapy

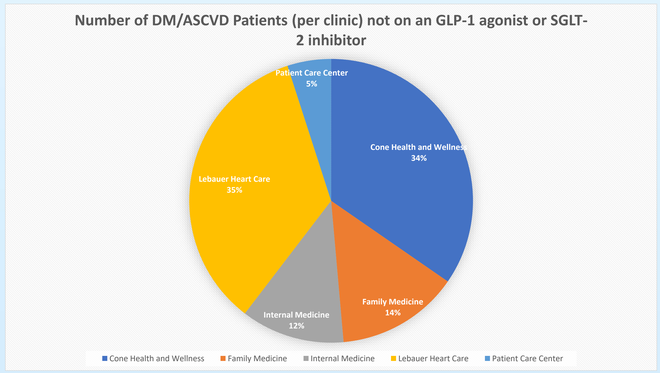

Chart 3: Breakdown of patients not on GLP-1 agonist/SGLT-2inhibitor by clinic

DISCUSSION

- Based on studies showing a clinical benefit for SGLT-2 inhibitors and GLP-1 agonist in the DM/ASCVD overlap patients, there is room for improvement in evaluating if these therapies are appropriate for the overlap patients in order to help lower their risk for CV events.
- This data will help to support the start of a Pharmacy Resident run initiative to assess and initiate a GLP-1 agonist or SGLT-2 inhibitor in the DM/ASCVD overlap patients if the therapy is appropriate.

Limitations

- Limitations to the study include that the patients not on SGLT-2 inhibitors or GLP-1 agonist were not screened to determine if they had any current or past contraindications to one of the therapy option. They were not looked at to see if they had previously tried and stopped one of these agents for any reason before the two year selection period.
- There was not a breakdown of the patients based off of their clinical ASCVD factors.

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