Abstract 16

Title: Internal Medicine Residents' Use of Non-Insulin Diabetes Medications

Background:
The landscape for treatment of type 2 diabetes has changed dramatically over the last decade. With the emergence of glucagon-like peptide 1 receptor agonists (GLP1-RA) and Sodium-Glucose Cotransporter-2 inhibitors (SGLT2i), the medical community now has two new tools to combat type 2 diabetes. Data now shows these agents improve mortality, cardiovascular outcomes, and possibly microvascular outcomes such as nephropathy.(1–4) As a result, the American Association of Clinical Endocrinology/American College of Endocrinology (AACE/ACE) published an updated algorithm for the treatment of type 2 diabetes that placed a heavier emphasis on the use of these new agents.(5) Despite this, internal medicine residents report barriers to prescribing these newer agents. Unpublished date from a cross-sectional quantitative analysis of new prescriptions for non-insulin type 2 diabetes medications show that residents' prescribing habits at our institution have not changed significantly from 2015-2018.

Objectives:
To use a survey instrument to evaluate residents' prescribing patterns and knowledge about non-insulin type 2 DM medications, and to determine whether distribution of a pocket card reference and an educational podcast will increase the use of newer agents in resident continuity clinics.

Methods:
Approval was obtained from the Wake Forest University Institutional Review Board. A 15-item survey was developed and reviewed by experts in both content and survey design. The survey was designed to measure self-reported prescribing habits, and knowledge about the most common non-insulin type 2 diabetes medications. The survey utilizes both a Likert-type scale for subjective responses, as well as multiple choice questions with single best answers. This survey will be distributed to categorical internal medicine residents. Following the survey, the residents will be provided with a pocket card reference on the most commonly used diabetes medications and a link to a short educational podcast. The pocket card and podcast will be developed by content experts. The podcast will be part of the "Wake Up To Medicine" podcast series through the Wake Forest Department of Internal Medicine.

Evaluation Plan:
We will repeat the survey 6 months after distribution of the pocket cards and analyze data using parametric tests. Using our electronic health record, we will retrospectively analyze the number of new prescriptions for each class of diabetes medications ordered by the residents in the 6 months prior to the pocket cards, and 3 and 6 months after the pocket cards.

Conclusions:
Completion rate of the initial survey was 64% (56/88). Based on the results of the initial survey, we have identified knowledge gaps and areas for improvement among internal medicine residents in regards to prescribing type 2 diabetes medications. We have also identified areas for improvement in survey design and administration.

References:

1. Marso SP, Daniels GH, Brown-Frandsen K, Kristensen P, Mann JFE, Nauck MA, et al. Liraglutide and Cardiovascular Outcomes in Type 2 Diabetes. New England Journal of Medicine. 2016 Jul 28;375(4):311–22.

2. Zinman B, Wanner C, Lachin JM, Fitchett D, Bluhmki E, Hantel S, et al. Empagliflozin, Cardiovascular Outcomes, and Mortality in Type 2 Diabetes. New England Journal of Medicine. 2015 Nov 26;373(22):2117–28.
3. Neal B, Perkovic V, Mahaffey KW, de Zeeuw D, Fulcher G, Erondu N, et al. Canagliflozin and Cardiovascular and Renal Events in Type 2 Diabetes. New England Journal of Medicine. 2017 Aug 17;377(7):644–57.
4. Empagliflozin and Progression of Kidney Disease in Type 2 Diabetes | NEJM [Internet]. [cited 2018 Jun 1]. Available from: https://www-nejm-org.go.libproxy.wakehealth.edu/doi/10.1056/NEJMoa1515920?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%3dwww-ncbi-nlm-nih-gov.go.libproxy.wakehealth.edu
5. Garber AJ, Abrahamson MJ, Barzilay JI, Blonde L, Bloomgarden ZT, Bush MA, et al. AACE/ACE comprehensive diabetes management algorithm 2015. Endocr Pract. 2015 Apr;21(4):438–47.

Questions, Challenges, Obstacles

-What degree of survey validation is recommended for this type of survey (cognitive interviewing, pilot testing)? Is a measure of internal validity required (Crohnbach alpha, test/retest, etc)?

-There were fairly high item non-response rates due to mostly technical design flaws and printing errors. Would it be better to simply repeat the survey, or try and analyze the data as is?

-What is the most common approach to statistical analysis of survey results? What institutional assistance is there for help with statistical analysis and data management?

-What recommendation do you have for warehousing both the pocket card and podcast for use in future residency classes?

-Given concerns about other factors that could influence prescribing patterns and introduce bias (other curriculum changes, industry-sponsored advertising, formulary changes), would it be more impactful to fully validate the survey and convert it to a regional or national multi-center study without an educational intervention?