Medications for type 2 diabetes, weight loss and kidney health not always provided as needed

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More recent medications for Type 2 diabetes and weight loss shown to have positive effects on cardiovascular and kidney health were not

always prescribed or accessible to people who could benefit from them.

Trends in how these medications have been prescribed and provided to patients are the focus of three new, preliminary studies to be presented at the American Heart Association's Epidemiology and Prevention, Lifestyle and Cardiometabolic Scientific Sessions 2024, held March 18–21, in Chicago. The meeting offers the latest science on population-based health and wellness and implications for lifestyle.

Sodium-glucose cotransporter-2 inhibitors, or SGLT2 inhibitors, are medications that lower blood sugar in adults with Type 2 diabetes. The medications have been proven to help reduce heart failure hospitalizations, recurrent cardiovascular events and chronic kidney disease progression, and are FDA-approved for people with Type 2 diabetes, chronic kidney disease and heart failure.

More recent pharmaceutical treatments for both Type 2 diabetes and weight loss include liraglutide and semaglutide (glucagon-like peptide-1 receptor agonists, GLP1-RA), plus tirzepatide, which is a dual GLP1/glucose-dependent insulinotropic polypeptide receptor agonist (GIP-RA).

All three medications are effective for people with Type 2 diabetes for lowering blood glucose levels and have been recently approved by the FDA for weight loss in people with obesity. They work with hormones within the body with effects on multiple organs, including causing food to move more slowly through from the stomach to the small intestine, leading to longer periods of feeling full and less hungry, and losing weight.

"The indications for prescribing two classes of medications, SGLT2 inhibitors and GLP-1 receptor agonists—originally designed and approved for the treatment of people with Type 2 diabetes—have now

been extended to people living with obesity, heart failure and chronic kidney disease.

"The good news is that these medications are now being prescribed more frequently, however, three new pieces of research indicate that there is work to be done in terms of access and equity to these treatments," said Robert H. Eckel, M.D., FAHA, a past president (2005–2006) of the American Heart Association, who was not involved in the study.

Eckel is also a professor emeritus of medicine in the Division of Endocrinology, Metabolism and Diabetes and the Division of Cardiology and the Charles A. Boettcher Endowed Chair in Atherosclerosis at the University of Colorado Anschutz Medical Campus.

"There is no question that the cost of these medications is high, yet when issues go beyond coverage and include sociodemographic and racial differences that influence treatment, these major issues need to be evaluated and addressed," said Eckel.

The first study, "Factors Associated With Obesity Pharmacotherapy Prescription Among Ambulatory Patients With Excess Weight," focused on adults in the U.S. with health insurance and investigated barriers to prescription access that may be impacting use of weight loss medications.

Researchers analyzed health records for more than 18,000 patients with obesity (body mass index ≥30 kg/m^2); who had health insurance covering anti-obesity medications semaglutide, tirzepatide and liraglutide; and who had received care at a Johns Hopkins outpatient clinic from January 2023 to September 2023.

The researchers found the likelihood of insured patients being prescribed obesity medications differed by demographic factors and

depending on other existing medical conditions. The analysis found:

- Only about 2.3% of eligible adults were prescribed weight-loss medications semaglutide, tirzepatide or liraglutide, though the likelihood of prescription was higher for those with severe obesity (BMI ≥35).
- Compared to white adults, the likelihood of prescription was lower among Black adults and Asian adults, independent of age, sex, body mass index (BMI), economic factors and cardiometabolic risk factors.
- Black adults were more likely to have severe obesity, hypertension and/or Type 2 diabetes despite having a lower likelihood of receiving these specific medications.
- Men of all ages and all adults younger than age 40 and older than age 50 had a lower likelihood of being prescribed the medications.
- Living in a neighborhood with a lower average income level or higher Area Deprivation Index (ADI) was not independently associated with the likelihood of receiving a prescription for these medications. Area Deprivation Index (ADI) is a multidimensional ranking of neighborhoods based on income, education employment and housing quality.
- Adults with Type 2 diabetes and hypertension were more likely to be prescribed one of the three anti-obesity medications.

"These results have important implications for obesity management and for advancing cardiometabolic health equity," said lead study author Meron Haile, B.S., a second-year medical student at Johns Hopkins University School of Medicine in Baltimore.

"While prescription rates for new obesity therapies are low among the overall population, we saw pronounced lower accessibility among Black adults, who exhibit a higher burden of severe obesity, hypertension and

Type 2 diabetes. There is a crucial need for understanding prescription practices for obesity medications, and to facilitate similar access among people in all races and ethnic groups."

Study background and details:

- The average age of the 18,164 study participants was 51 years, and their average body mass index was 36 kg/m^2, which is considered severe obesity.
- 64% self-identified as female, and 36% self-identified as male.
- 54% of participants were recorded as white adults; 35% as Black adults; 6% as adults of other race; and 5% were Asian adults.

The study's limitations included that it was a study with patients receiving care in only one hospital/health system, which might mean the results may not be the same in individuals seen at other medical facilities or hospital systems. In addition, the study was only able to evaluate prescription data, without access to information about whether the prescriptions were filled and picked up; and the study authors were unable to assess factors like co-pays/out-of-pocket costs, which may impact the use of these medications.

Also, the researchers note that neighborhood average income and ADI scores were based on ZIP codes, which may not be as accurate as social variables measured at the individual level.

A second study, "Evaluation of Race and Ethnicity and Pharmacy Dispensing of Sodium-Glucose Cotransporter 2 Inhibitors and Glucagon-Like Peptide 1 Receptor Agonists in Patients with Type 2 Diabetes," examined pharmacy dispensing patterns by race and ethnicity of patients in an attempt to better understand use of the SGLT2 inhibitors and GLP-1 receptor agonist medications.

An analysis of electronic health records for almost 700,000 adults with Type 2 diabetes, treated at six different health care systems from 2014 to 2022, found:

- Overall, the rate of annual pharmacy dispensing of SGLT2 inhibitors increased from 0.1% to 12.2% between 2014 and 2022, respectively, and the rate of pharmacy dispensing of GLP-1 receptor agonist medications increased from 0.3% to 3.8% between 2014 and 2022, respectively.
- The number of prescriptions dispensed for both types of medications differed among people from diverse racial/ethnic groups.
- American Indian/Alaska Native, Black and Hispanic patients were less likely to be dispensed a SGLT2i than white patients.
- American Indian/Alaska Native, Hispanic, Asian, Black, and Hawaiian or Pacific Islander patients were less likely to be dispensed a GLP1-RA in comparison to white patients.
- These racial inequities persisted even after the researchers accounted for demographics, Type 2 diabetes management and duration, visits to specialists and the presence of cerebrovascular disease, chronic kidney disease, congestive heart failure, myocardial infarction, peripheral vascular disease, dyslipidemia and hypertension.

"This study highlights the need for health care clinicians and health systems to look at whether all of their patients are equally likely to use these new medications," said lead study author Luis A. Rodriguez, Ph.D., a research scientist at Kaiser Permanente's Northern California Division of Research.

"Our findings also highlight the need for studies that can identify the best approaches to increasing use of these new medications in patients with Type 2 diabetes particularly among people in diverse racial and

ethnic groups. These medications have been shown to reduce heart and kidney complications, so ensuring all patients are equally likely to receive them is one way to improve health equity."

Study background and details:

- A total of 687,165 patients were included in the study. 46.4% of the patients were female, and 53.6% were male. The median age of patients was 60 years old.
- The six health care systems were Geisinger in Pennsylvania; HealthPartners in Minnesota and Wisconsin; Henry Ford Health in Michigan; Kaiser Permanente Northern California; Kaiser Permanente Southern California; and Kaiser Permanente Hawaii.
- The race/ethnicity of each participant was noted from their health records: 36.4% of the participants self-identified as white adults; 31% as Hispanic adults; 16.6% as Asian adults; 10.5% as Black adults; 3.8% as multi-racial or other/unknown adults; 1.4% as Hawaiian or Pacific Islander adults; and 0.3% American Indian or Alaska Native adults.

There were several limitations to the study, including that it lacked data for the out-of-pocket costs of medications; it did not evaluate patient preferences, particularly for the use of injectable medications, which the researchers noted could explain some of the racial and ethnic differences.

In addition, it was unclear whether disparities were patient-, provider-, or health system-related, or a combination of these factors. The researchers also noted that more research is needed to better understand patient preferences, at which levels the disparities occur, and what may be causing or influencing the disparities.

In addition to treating Type 2 diabetes, the 2022 joint guideline from the

American College of Cardiology, the American Heart Association and the Heart Failure Society of America recommends SGLT2i therapy as a treatment option for people with heart failure, regardless of Type 2 diabetes status. The third study, "Patterns of Sodium Glucose Cotransporter-2 Inhibitor Prescription by Indication in Patients With and Without Diabetes in the US Health System," explored how often prescribing recommendations for SGLT2i are followed.

Researchers analyzed health records for more than 700,000 adults with Type 2 diabetes and 2.5 million people without Type 2 diabetes, who received care at 28 U.S. health systems from 2022 to 2023.

The study found:

- The rate of prescriptions of SGLT2i was low, even among people with health conditions for which SGLT2i are the first-line, guideline-recommended treatment.
- Among people with Type 2 diabetes recommended for first-line SGLT2i treatment, only 11.9% received a prescription for an SGLT2i, and there was no significant difference in prescription between people who met the criteria for first-line SGLT2i treatment versus people who did not meet the criteria for first-line SGLT2i treatment.
- Among people without Type 2 diabetes, SGLT2i prescription was substantially lower, with only 3.1% of people with conditions that are guideline-recommended for SGLT2i receiving a prescription.
- Notably, SGLT2i prescription rates varied across health care systems, however, less than 30% of people who met guideline criteria received a SGLT2i prescription across all health systems in the study.
- Please note: The data are updated and do not match the data in the abstract, which were confirmed by the researchers.

"This research suggests better-targeted prescription of SGLT2i therapy is critical to realizing the heart and kidney disease benefits in the U.S. population. Interventions are needed to increase uptake of guideline recommendations for SGLT2i use," said lead author Jung-Im Shin, M.D., Ph.D., an assistant professor in the department of epidemiology at Johns Hopkins Bloomberg School of Public Health in Baltimore.

Study background and details:

- The study included 716,387 patients with Type 2 diabetes and 2,473,440 patients without Type 2 diabetes.
- 59% of patients self-identified as women, and 41% of patients self-identified as men.
- 75% of patients self-identified as white adults, 10% as Black adults, 5% as Hispanic adults, and 10% were self-identified as adults of another race or ethnicity.

The study had several limitations, including a lack of information about whether or not prescriptions were filled. In addition, the study did not investigate or address if patients had access to SGLT2i medications, such as insurance coverage or out-of-pocket costs.

All findings are considered preliminary until published as a full manuscript in a peer-reviewed scientific journal.

More information: Factors Associated With Obesity Pharmacotherapy Prescription Among Ambulatory Patients With Excess Weight (Abstract 52). www.abstractsonline.com/pp8/#! … 343/presentation/210

Evaluation of Race and Ethnicity and Pharmacy Dispensing of Sodium-

Glucose Cotransporter 2 Inhibitors and Glucagon-Like Peptide 1 Receptor Agonists in Patients with Type 2 Diabetes (Abstract MP36). www.abstractsonline.com/pp8/#! … 343/presentation/214

Patterns of Sodium Glucose Cotransporter-2 Inhibitor Prescription by Indication in Patients With and Without Diabetes in the US Health System (Abstract P499). www.abstractsonline.com/pp8/#! … 343/presentation/686

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