
CLINICAL INSIGHTS

Utilization and Cost of Expensive Diabetes Medications Keeps Increasing – What is Behind this Change?

As recently as 2018, established guidelines for management of diabetes (American Diabetes Association, ADA, and American Association of Clinical Endocrinology, AACE) had no specific preference of therapy choice outside of metformin for A1c lowering. However, in the last few years, several studies have been conducted that have driven guideline changes for preferential initial or adjunctive therapies in diabetes.

National treatment guidelines are typically slow to evolve as new agents must have strong supporting evidence not only for HbA1C lowering but also improved overall health outcomes or reduction in risk for comorbid conditions. Since 2018 there has been multiple published studies supporting the benefits of two classes of diabetes medications, Sodium-Glucose Cotransporter 2 (SGLT2) Inhibitors (eg Farxiga and Jardiance) and Glucagon-Like Peptide-1 (GLP-1) Receptor Agonists (eg Ozempic and Trulicity). Both classes of medications represent new and novel mechanisms of action that have proven to produce potent blood sugar and HbA1C lowering.

Why are these medications recommended over less expensive medications?

While prior classes of antidiabetic medications will always have a place in therapy for additional A1c lowering, they do not (outside metformin) carry benefits to improve or reduce risk of comorbid conditions or complications that diabetes can cause. An overview of these conditions include:

- **Obesity**
 - Obesity-related costs were nearly \$173 billion to the US health system in 2019

- Weight loss can help slow the progression from prediabetes to type 2 diabetes
- Weight loss is also beneficial in treatment of type 2 diabetes in helping lower blood sugar and reducing medication needs

- **Cardiovascular Disease**
 - Atherosclerotic cardiovascular disease (ASCVD) is the leading cause of complications and death in diabetes
 - ASCVD includes coronary heart disease, cerebrovascular disease, and peripheral arterial disease—or the buildup of blockage in blood vessels that can lead to heart attack, stroke, and lowered circulation to the hands and feet
 - Diabetes alone is a risk factor for developing ASCVD, as are common comorbid conditions of high blood pressure and high cholesterol
 - An estimated \$37.3 billion is spent on cardiovascular-related concerns associated with diabetes

- **Heart Failure**
 - Heart failure is a major cause of complications and death from cardiovascular disease
 - Rates of hospitalization from heart failure complications are doubled in patients with diabetes than patients without

- **Chronic Kidney Disease**
 - Occurs in 20-40% of patients with diabetes
 - In patients with diabetes, CKD increases the ASCVD risk and causes increase in healthcare costs
 - Progression of CKD can lead to need for dialysis or kidney transplant

The SGLT2 Inhibitors and GLP-1 Agonists have become preferred medications as they have shown the ability to reduce the occurrence or progression of these conditions and improve outcomes for patients with diabetes.

GLP-1 Agonists:

This class of medications includes injectables Adlyxin, Byetta, Ozempic, Trulicity, and Victoza and oral Rybelsus, and work through a few ways to lower blood sugar, one of

which includes weight loss. Weight loss is seen as an added benefit for many patients with type 2 diabetes. Studies have also shown a reduced risk of cardiovascular events with Ozempic, Trulicity, and Victoza. The ADA recommends GLP-1 therapy as an initial therapy option in patients with diabetes who already have or are at high risk for heart disease.

SGLT2 Inhibitors:

SGLT2 Inhibitors include Farxiga, Invokana, Jardiance, and Steglatro. In addition to their blood sugar and HbA1C lowering benefits, SGLT2 Inhibitors have also been approved by the FDA for treatment of chronic kidney disease and heart failure. Studies have also found reduced risks of cardiovascular events and progression of kidney disease in people with diabetes. Because of these benefits, SGLT2 Inhibitors are recommended as an initial therapy option in patients who have or at high risk for chronic kidney disease, heart failure, and cardiovascular disease. Additionally, in patients with kidney disease or heart failure, these medications are often prescribed outside of a diabetes diagnosis due to their benefits of delaying progression of these conditions.

Family	Medications	Benefits in Addition to A1c Lowering
GLP-1 Agonists	Adlyxin (lixisenatide) Byetta (exenatide) Ozempic, Rybelsus (semaglutide) Trulicity (dulaglutide) Victoza (liraglutide)	<ul style="list-style-type: none"> • Cardiovascular Disease* • Weight loss <p>*Only Ozempic, Trulicity, and Victoza showed benefit for cardiovascular disease</p>
SGLT2 Inhibitors	Farxiga (dapagliflozin) Invokana (canagliflozin) Jardiance (empagliflozin) Steglatro (ertugliflozin)	<ul style="list-style-type: none"> • Cardiovascular Disease • Chronic Kidney Disease • Heart Failure

A New Way to Achieve Potent Blood Sugar and HbA1C Lowering

Despite the increase in costs for both the health plan and the patient, these medications are recommended for early treatment in patients who are at high risk or already diagnosed with comorbid conditions. Treatment with these medications could help patients avoid certain complications entirely or help slow progression of these conditions to both more costly and more symptomatic stages of disease, in addition to their A1c-

lowering benefits. By reducing the risk of diabetes complications, the pharmacy expenditures will likely be offset by a reduction in medical costs for cardiovascular events and kidney disease.

Resources:

- American Diabetes Association Professional Practice Committee. Standards of Medical Care in Diabetes—2022. *Diabetes Care* 2022;45 (Suppl. 1):S8-S264.
- CDC. Adult Obesity Facts. <https://www.cdc.gov/obesity/data/adult.html>. Sep 2022.