Abstract

Introduction

Type 2 diabetes mellitus represents a major challenge in contemporary medicine due to its rising global prevalence, chronic nature, and strong association with cardiovascular and metabolic complications. In recent years, novel classes of glucose-lowering agents with well-documented cardiometabolic benefits have been incorporated into clinical practice. However, the extent to which these therapies are utilized in routine outpatient care in Poland has not yet been comprehensively evaluated.

Objective

This study aimed to assess temporal trends in the pharmacological management of type 2 diabetes, with a particular focus on the use of SGLT-2 inhibitors and GLP-1 receptor agonists, in the Polish ambulatory care setting from 2011 to 2024. Additionally, it sought to evaluate the degree of concordance between real-world prescribing patterns and the clinical practice guidelines issued by the Polish Diabetes Association.

Materials and Methods

A retrospective cohort study was conducted using anonymized data derived from the electronic health records of the LUX MED network, comprising 300 outpatient clinics across Poland. Adult patients diagnosed with type 2 diabetes were included, provided that relevant anthropometric, pharmacotherapeutic, and clinical data were available. The study population was stratified by sex, age, BMI, and the presence of atherosclerotic cardiovascular disease.

Results

Among the 34,139 patients analyzed, a high prevalence of cardiovascular risk factors was observed. Over the study period, the use of statins and modern antidiabetic agents—particularly SGLT-2 inhibitors and GLP-1 receptor agonists—steadily increased. These antihyperglycemic medications were more frequently prescribed to individuals with obesity, and their use varied according to age, glycemic control, and cardiovascular comorbidities. A moderate improvement in metabolic parameters was noted, especially in terms of body weight, BMI, and lipid profile. A decline in eGFR was observed, particularly in high-risk cardiovascular subgroups.

Conclusions

Throughout the study period, a notable increase in the use of modern glucose-lowering therapies was observed, particularly among patients with cardiovascular comorbidities. These agents were associated with clinically meaningful benefits, including weight reduction and

attenuation of renal function decline. Nevertheless, the overall adherence to the Polish Diabetes Association guidelines remained suboptimal, indicating a need for improved implementation in routine clinical practice.

Key words: type 2 diabetes, pharmacotherapy, cardiovascular risk, clinical guidelines