Comparison Between Antidiabetic Weight Loss Medication

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Abstract- The increasing global prevalence of type 2 diabetes mellitus (T2DM) and obesity requires therapeutic strategies that can ensure both glycemic control and weight management. The purpose of this review article is a comparative study of the agents used in the treatment of T2DM that can cause intentional weight loss, with the main focus on GLP-1 RAs, SGLT2is, and newer combination therapies: the efficacy, safety, mechanisms of action, and long-term metabolic alternatives afforded by these drugs. Available clinical trial and real-world evidence suggests that GLP-1 RA can have a more profound weight loss effect accompanied by glycemic improvement, most prominently with semaglutide and liraglutide. Conversely, SGLT2is bring modest weight loss and concomitant cardiovascular and renal benefits. In contrast, the role of emerging dual agonists and combination therapies is examined for optimizing treatment outcomes for their metabolo-centric therapy. The intent of this comparison is to help clinicians in the individualized management of patients by aligning choice of therapy according to metabolic targets and comorbidity profiles.

Indexed Terms- type 2 diabetes, weight loss, anti-diabetic drugs, body composition, diabesity

I. INTRODUCTION

Almost parallel with the surge in obesity rates, type 2 diabetes mellitus (T2DM) has achieved epidemic proportions worldwide. Each of these diseases shares overlapping pathophysiological mechanisms, such as insulin resistance, chronic inflammation, and dysregulation of lipid metabolism. Obesity further complicates managing glycemic levels in T2DM patients and adds to the risk of cardiovascular diseases, renal damage, and quality of life detriments. Hence, the therapeutic approach started considering pharmacotherapy for glycemic control and long-term weight loss in diabetes management.

Traditional antidiabetics such as sulfonylureas and insulin compromise body weight in their functioning while combating hyperglycemia-a counterproductive effect toward the long-term metabolic health of a patient. The paradox of weight gain by some older antidiabetic agents is lessened by the favorable effect of newer agents on weight, over and above their action on glycemic control. Glucagon-like peptide-1 receptor agonists and sodium-glucose cotransporter-2 inhibitors, however, are probably the most studied for and known to have a dual effect on weight and glycemic control. Moreover, the introduction of dual and triple agonists primed to interact with multiple incretin pathways offer some exciting prospects for weight loss along with diabetes outcomes.

This paper focuses on the comparative evaluation of antidiabetic medications with weight-reducing abilities. It first covers the pharmacological mechanisms that induce weight loss in antidiabetic therapy but then turns to compare GLP-1 RAs, SGLT2is, and newer ones before shedding light onto clinical trials and real-world data on efficacy, safety, and long-term advantage. Its intended orientation is to enable evidence-based decision-making into clinical practice, thereby aligning therapeutic choice with patient parameter needs, mostly concerning obese T2DM.

II. BACKGROUND AND PATHOPHYSIOLOGY

2.1 Overview of Type 2 Diabetes Mellitus and Its Link to Obesity (Diabesity)

Type 2 diabetes mellitus (T2DM) is a chronic metabolic abnormality characterized by a persistent hyperglycemia owing to insulin resistance and progressive β-cell dysfunction. Unlike type 1 diabetes, which is an autoimmune destruction of pancreatic β-cells, T2DM has an insidious onset, mainly in the setting of metabolic syndrome and excess body fat. Obesity, notably central or visceral obesity, is a major risk factor and causal factor for T2DM. The term "diabesity" has since evolved to convey the strong epidemiological and pathophysiological link between the two.

About 80 to 90% of people with T2DM are overweight or obese, indicating that the two conditions co-exist with each other. Inflammation due to obesity, lipotoxicity, and hormonal dysregulation lead to the progression of insulin resistance, reduced glucose uptake, and β-cell stress. The combination makes the management difficult cosmetical risk for cardiovascular diseases, stroke, nephropathy, and other diabetes-related complications.

.2.2 Metabolic Mechanisms Contributing to Insulin Resistance and Weight Gain

The pathophysiology of T2DM and obesity is intertwined through several metabolic disturbances:

- Insulin Resistance: In obese individuals, particularly those with excess visceral adipose tissue, there is increased release of free fatty acids (FFAs) and pro-inflammatory cytokines such as TNF-α and IL-6. These disrupt insulin signaling pathways, reducing glucose uptake in skeletal muscle and promoting hepatic gluconeogenesis.

- Adipokine Imbalance: Obesity alters the secretion of adipokines—hormones released by fat tissue. Leptin resistance, reduced adiponectin levels, and increased resistin levels promote insulin resistance and metabolic dysfunction.

- Mitochondrial Dysfunction: Obesity and T2DM are associated with reduced mitochondrial oxidative capacity, leading to inefficient glucose and lipid metabolism.

- Chronic Low-Grade Inflammation: Adipose tissue expansion is accompanied by macrophage infiltration, triggering a pro-inflammatory state that exacerbates insulin resistance.

- Gut Microbiota Dysbiosis: Emerging evidence indicates that obesity-associated changes in gut microbiota may impair glucose metabolism and energy homeostasis, contributing to both weight gain and insulin resistance.

- Central Nervous System Regulation: The hypothalamus plays a central role in energy homeostasis. In obesity, hypothalamic leptin and insulin signaling is disrupted, impairing appetite regulation and promoting hyperphagia.

2.3 Rationale for Integrated Glycemic and Weight Management in T2DM

Weight loss remains the corner stone of managing a patient with type 2 diabetes. Weight loss even by 5–10% improves insulin sensitivity, lowers HbA1c, and decreases cardiovascular risk. Many other metabolic conditions coexist with excess weight and worsened glycemic control. Excess weight also increases the medication burden and medication-related side effects risk. The relationship between many antidiabetic agents and weight gain, especially insulin and sulfonylureas, has been well documented, heralding a change in pharmacologic agent selection to those that decrease glucose and induce clinically meaningful weight loss. Modern antidiabetics such as GLP-1 receptor agonists and SGLT2 inhibitors are capable of intervening on both pathophysiologic pathways by increasing insulin sensitivity and decreasing weight through mechanisms such as appetite suppression and increased urinary glucose excretion.An integrated approach to management involving lifestyle modification and pharmacologic agents with weight-lowering propensity has now been presented as the standard by clinical practice guidelines, which ensures a further enhancement of metabolic outcome while reducing complications and improving the quality of life of the patients.

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Approximately 80–90% of individuals with T2DM are overweight or obese, highlighting the interdependence of these conditions. Obesity-induced inflammation, lipid toxicity, and hormonal dysregulation contribute directly to the development of insulin resistance, impaired glucose uptake, and β-cell stress. This coexistence complicates disease management and increases the risk for cardiovascular disease, stroke, nephropathy, and other diabetes-related complications.

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3.3 Rationale for Integrated Glycemic and Weight Management in T2DM

Given the bidirectional relationship between obesity and T2DM, addressing both glycemic control and weight reduction is essential for effective disease management. Weight loss of even 5–10% has been shown to improve insulin sensitivity, reduce HbA1c levels, and lower the risk of cardiovascular events. Moreover, excess weight not only worsens glycemic control but also increases the medication burden and risk of treatment-related side effects.

Historically, many antidiabetic therapies (e.g., insulin, sulfonylureas) have been associated with weight gain, which undermines long-term metabolic outcomes. This has prompted a shift toward pharmacologic strategies that not only lower blood glucose but also induce clinically meaningful weight loss. Modern agents such as GLP-1 receptor agonists and SGLT2 inhibitors target both pathophysiologic pathways, improving insulin sensitivity and promoting weight reduction through mechanisms like appetite suppression and increased urinary glucose excretion.

An integrated approach to managing T2DM—one that includes lifestyle interventions and pharmacologic agents with weight-lowering potential—is now recognized as the gold standard in clinical practice guidelines. This paradigm shift aims to optimize metabolic outcomes, minimize complications, and enhance overall patient quality of life.

IV. PHARMACOLOGICAL OVERVIEW OF ANTIDIABETIC MEDICATIONS

Though the last two decades have been marked by a revolution in the antidiabetic structure, historically drugs sought only glycemic control. Hence, these days, therapeutic measures carry a dual goal: to reduce blood glucose and to control body weight. The pathophysiological mechanism behind the shift in the paradigm has been the mutual predisposition between obesity and insulin resistance. This section reviews traditional antidiabetic drugs as well as novel routes, with special regard to their effect on body weight, considered pertinent in the treatment of T2DM with concurrent obesity.

4.1 Traditional Antidiabetic Drugs

4.1.1 Insulin

Exogenous insulin therapy is a major treatment for the advanced T2DM cases. Though the most powerful tool in lowering elevated blood glucose levels, insulin can cause one of the major problems of weight gain in human beings-it causes build-up in muscles and stores fats in adipocytes, and also prevents glucosuria-and weight gain in obese individuals can be counterproductive in improving their condition; therefore, the problem of weight gain by insulin puts the patient and the drug in a paradoxical situation.

4.1.2 Sulfonylureas

These are drugs that give a stimulus to pancreatic β-cells to secrete insulin. They are strong and cheap but promote weight gain and thereby hypoglycemia. With elevation of insulin concentrations, fat storage gets promoted, making sulfonylureas an unfavorable choice in obese patients undergoing treatment for T2DM.

4.1.3 Thiazolidinediones (TZDs)

Thiazolidinediones, such as pioglitazone, mechanism is by increasing insulin sensitivity in adipose tissue, muscle, and liver. The TZDs, though beneficial in reducing insulin resistance, come with fluid retention and weight gain, as the latter is a result of adipogenesis and sodium retention. Concerns regarding the risk of heart failure and bone fractures further restrict their use.

4.2 Modern Weight-Reducing Antidiabetic Classes

4.2.1 GLP-1 Receptor Agonists (GLP-1 RAs)

Agonism of the glucagon-like peptide-1 receptors (such as with liraglutide and semaglutide) mimic incretin hormones that boost insulin secretion in a glucose-dependent manner, inhibit glucagon release, slow gastric emptying, and reduce appetite. They have given considerable effects on both glycemic control and weight loss. Average body-weight reductions of between 5 and 12 percent were evidenced in clinical trials, with the highest efficacy shown by semaglutide. Furthermore, several GLP-1 RA have been associated with cardiovascular benefits, which makes them an attractive option for patients with T2DM and at high cardiometabolic risk.

4.2.2 SGLT2 Inhibitors (SGLT2is)

Sodium-glucose cotransporter-2 inhibitors (such as empagliflozin and dapagliflozin) reduce blood glucose by obstructing the reabsorption of glucose in the kidneys, which causes excretion of glucose in the urine. Notably, with this mechanism comes weight loss of about 2% to 4% and a mild diuretic response. Besides glycemic control, SGLT2is possess major cardiovascular and renal protective attributes; thus, given their safety and weight-lowering touch, their scope has been broadened to non-diabetic candidates as well.

4.2.3 Dual and Triple Agonists

Emerging therapies such as tirzepatide (a dual GIP and GLP-1 receptor agonist) represent a new frontier in the treatment of diabesity. Such agents stimulate multiple hormone pathways to augment incretin action and thus marry insulin sensitivity and satiety. Tirzepatide has achieved groundbreaking results in clinical trials, with the average weight loss nearing or exceeding 15%. Triple agonists presently under development intend to make further advances on these by stimulating the glucagon receptor alongside the GLP-1 and GIP receptors.

4.3 Summary

Even though conventional agents treat hyperglycemia well, they usually cause weight gain and offer few health benefits apart from that. On the other hand, with the introduction of new-age agents such as GLP-1 RAs, SGLT2is, and dual agonists, treatment of T2DM has shifted towards treating concomitant obesity and its metabolic results of obesity. These medications compliment the present notion of comprehensive risk reduction in diabetes care, offering benefits that extend beyond HbA1c reduction.

V. COMPARATIVE ANALYSIS OF ANTIDIABETIC WEIGHT LOSS MEDICATIONS

Pharmacologic therapy choice for persons with type 2 diabetes mellitus (T2DM) and obesity should be not only based on efficacy in lowering glucose but also on the ability of the medication to affect body weight, cardiovascular outcomes, tolerability, and safety. The following will compare the three classes of antidiabetic agents with the greatest money-making potential for treatment of obesity: GLP-1 receptor agonists, SGLT2 inhibitors, and dual incretin receptor agonists (tirzepatide is an example).

The comparison is placed on their mechanism of action, glycemic efficacy, average amount of weight loss, adverse effects, and cardiovascular or renal benefits, wherever applicable, supported by data from pivotal trials and meta-analyses.

Medication Class	Example Drugs	Mechanism of Action	HbA1c Reduction	Average Weight Loss	Common Side Effects	Cardiovascular/Renal Benefits
GLP-1 RAs	Liraglutide, Semaglutide	Incretin mimetic; enhances insulin, suppresses glucagon, delays gastric emptying	1.0–1.5%	5–12%	Nausea, vomiting, diarrhea	Proven CV benefit (LEADER, SUSTAIN-6)
SGLT2 Inhibitors	Empagliflozin, Dapagliflozin	Promotes urinary glucose excretion via renal inhibition of SGLT2	0.5–1.0%	2–4%	Genital infections, polyuria	CV & renal benefit (EMPA-REG, DAPA-HF)
Dual Incretin Agonists	Tirzepatide	GIP + GLP-1 receptor agonist; enhances insulin release, suppresses appetite	1.5–2.5%	Up to 15%	Nausea, vomiting, fatigue	Emerging strong CV benefit (SURPASS)

5.2 Glycemic and Weight Loss Efficacy

- GLP-1 RAs: Highly effective in reducing both HbA1c and body weight. Semaglutide, in particular, has demonstrated weight loss comparable to that seen in bariatric surgery in some patients (up to 15% in higher doses).
- SGLT2is: Moderate glucose-lowering effect and modest but consistent weight loss, primarily via caloric loss in the urine and mild diuresis.
- Dual Agonists: Tirzepatide has shown superior performance over both GLP-1 RAs and insulin in clinical trials, offering substantial glycemic and weight loss benefits.

5.3 Safety and Tolerability

- GLP-1 RAs are generally well tolerated but frequently cause gastrointestinal discomfort, especially during dose escalation. These side effects often diminish over time.
- SGLT2 Inhibitors carry a risk of genitourinary infections and, rarely, euglycemic diabetic ketoacidosis. However, their safety in heart failure and chronic kidney disease (CKD) populations makes them valuable in high-risk patients.
- Tirzepatide and other dual agonists show similar GI side effects to GLP-1 RAs but may have slightly higher discontinuation rates due to nausea.

5.4 Cardiovascular and Renal Outcomes

- GLP-1 RAs have demonstrated reductions in major adverse cardiovascular events (MACE) in patients with established cardiovascular disease (e.g., LEADER, SUSTAIN-6 trials).
- SGLT2is are proven to reduce heart failure hospitalizations and slow the progression of diabetic kidney disease, even in non-diabetic populations (e.g., DAPA-HF, EMPA-REG OUTCOME).
- Tirzepatide is currently being evaluated in ongoing cardiovascular outcome trials (e.g., SURPASS-CVOT), but preliminary data suggest strong cardiometabolic benefits.

5.5 Clinical Implications

The data suggest a paradigm shift in favor of agents that provide both glycemic and weight benefits. The selection of therapy should be individualized, taking into account patient comorbidities, therapeutic goals, tolerability, and cost. For example:

- A patient with established cardiovascular disease may benefit most from GLP-1 RAs.
- Those with heart failure or CKD may benefit more from SGLT2is.
- Patients needing intensive weight reduction could be ideal candidates for dual agonist therapy.

VI. CLINICAL TRIAL EVIDENCE

In a nutshell, clinical trials endorse the concomitant action of many antidiabetic agents in controlling glycemia and causing weight loss. Furthermore, a few antidiabetic drugs are capable of aiding in protection against major CV incidents and kidney damage. Let's take a look at some of the biggest clinical trials that established the therapeutic efficacy of GLP-1 receptor agonists (GLP1RAs), SGLT2 inhibitors, and dual incretin agonists, looking at their effects on HbA1c, weight loss, CV protection, and safety.

6.1 GLP-1 Receptor Agonists

6.1.1 LEADER Trial (Liraglutide)

- Design: Multinational, randomized, placebo-controlled CV outcome trial (n = 9,340).
- Population: T2DM patients at high cardiovascular risk.
- Results:
  - HbA1c reduction: ~1.0%
  - Weight loss: ~2.3 kg vs placebo
  - CV outcomes: 13% relative risk reduction in major adverse cardiovascular events (MACE)
  - Safety: Well tolerated; primary side effects were gastrointestinal (nausea, diarrhea)
- Conclusion: Liraglutide reduced the risk of cardiovascular death and improved glycemic control with modest weight loss.

6.1.2 STEP Trials (Semaglutide)

- Design: Series of global phase 3 trials examining semaglutide (2.4 mg weekly) in obese individuals, with or without T2DM.
- STEP 2 (T2DM subgroup):
  - HbA1c reduction: 1.6%
  - Weight loss: Up to 9.6% of body weight
- STEP 1 (non-diabetic obese adults):
  - Weight loss: ~14.9% (superior to all existing obesity drugs)

- Safety: Gastrointestinal events most common; low hypoglycemia risk.
- Conclusion: Semaglutide provides substantial weight loss and glycemic control, outperforming older GLP-1 RAs.

6.2 SGLT2 Inhibitors

6.2.1 EMPA-REG OUTCOME (Empagliflozin)

- Design: CV outcome trial involving 7,020 patients with T2DM and established CV disease.
- Results:
  - HbA1c reduction: ~0.7%
  - Weight loss: ~2–3 kg
  - CV outcomes: 14% reduction in MACE; 38% reduction in CV death
  - Safety: Increased risk of genital infections; no significant increase in hypoglycemia
- Conclusion: Empagliflozin significantly reduces CV mortality and provides modest weight loss benefits.

6.2.2 DAPA-HF (Dapagliflozin)

- Design: Randomized trial assessing dapagliflozin in heart failure patients with reduced ejection fraction, including non-diabetic individuals.
- Findings:
  - Reduced risk of worsening heart failure and CV death
  - Demonstrated benefits independent of baseline HbA1c
  - Reinforced role of SGLT2is in cardio-renal protection

6.2.3 CANVAS Program (Canagliflozin)

- Design: Combined data from two CV outcome trials (n = 10,142)
- Results:
  - HbA1c reduction: ~0.8%
  - Weight loss: ~2–4 kg
  - CV outcomes: 14% MACE reduction
  - Safety: Higher risk of lower-limb amputation noted; led to updated label warnings
- Conclusion: Canagliflozin offers CV benefits and weight reduction but requires careful monitoring.

6.3 Dual Incretin Agonists

6.3.1 SURPASS Trials (Tirzepatide)

- Design: Series of global phase 3 trials comparing tirzepatide to placebo and active comparators (insulin, GLP-1 RAs).
- SURPASS-2:
  - Compared with semaglutide (1 mg) in T2DM
  - HbA1c reduction: Up to 2.46%
  - Weight loss: Up to 12.4 kg (~13.1% body weight)
- SURPASS-4:

- Cardiovascular safety in high-risk patients
- Outcome: Neutral on MACE, but trend toward benefit; long-term CV data pending

- Safety: GI side effects (nausea, vomiting) dose-dependent; low hypoglycemia risk
- Conclusion: Tirzepatide shows superior efficacy for both glucose control and weight loss, potentially redefining treatment goals for diabesity.

Trial	Medication	HbA1c Reduction	Weight Loss	CV/Other Benefits	Key Safety Issues
LEADER	Liraglutide	~1.0%	~2.3 kg	↓ CV death, ↓ MACE	GI symptoms
STEP 2	Semaglutide	~1.6%	~9.6% body weight	↓ BP, improved QoL	GI effects, dose titration needed
EMPA-REG	Empagliflozin	~0.7%	~2–3 kg	↓ CV death (38%), ↓ HF hospitalization	Genital infections
DAPA-HF	Dapagliflozin	N/A (HF patients)	N/A	↓ HF events, ↓ CV death	Genitourinary risk
CANVAS	Canagliflozin	~0.8%	~2–4 kg	↓ MACE	↑ Risk of amputation
SURPASS-2	Tirzepatide	Up to 2.5%	Up to 13.1% body weight	Promising CV trends; pending long-term data	GI effects, emerging therapy

VII. FUTURE DIRECTIONS AND EMERGING THERAPIES

As the rate of T2DM and obesity worldwide increments, more focus is being shifted on new pharmacological and precision-based approaches beyond mere glycemic control. These therapies aim to work in multiple metabolic pathways, build-in better patient compliance, and facilitate individualized care. Dual and triple receptor agonists, oral GLP-1 formulations, gene-targeting approaches, and personalized medicine approaches represent major advances.

7.1 Dual and Triple Agonists: Beyond GLP-1 Monotherapy

Building on the success of GLP-1 receptor agonists and acknowledging increasingly complex metabolic perturbations, agents targeting additional metabolic hormones have been developed. Tirzepatide, a first-in-class dual GIP/GLP-1 receptor agonist, has shown inconceivable levels of weight loss and glycemic control during the SURPASS trials, even superseding those of insulin and semaglutide. This mechanism of action synergizes with the activities of GIP (glucose-dependent insulinotropic polypeptide) and GLP-1 in the promotion of satiety, insulin secretion, and energy utilization.

Triple agonists (GLP-1/GIP/glucagon receptor agonists) are entering early clinical trials with even greater promise: through stimulating glucagon receptors, the agents might increase energy expenditure and fat oxidation. The initial results seem to weigh in favor of triple agonists in reducing body weight and liver fat when compared to GLP-1 or dual agonists alone. These drugs bring hope for treating refractory obesity and T2D.

7.2 Oral GLP-1 Analogues

Whereas today most GLP-1 RAs are injectable, oral semaglutide (Rybelsus) has become the first-ever oral GLP-1 formulation to be in the market, a very important advance in patient convenience and adherence. Trials such as PIONEER have shown it to be non-inferior in glycemic control to some of its injectable counterparts, but it causes slightly less weight loss as compared with high-dose injectable semaglutide.

Further advancements in oral peptide delivery, including nanoparticle- and micelle-based carriers, will ensure better bioavailability and lesser gastrointestinal side effects. Oral GLP-1 analogs will eventually be the first-choice agents for patients who dislike injections.

7.3 Gene-Targeted and Gut Microbiome Therapies

Progress in genomics and molecular biology are paving the way for gene-targeted therapies for diabetes. Through genome-wide association studies (GWAS), many gene polymorphisms have been identified, which are associated with T2DM pathogenesis, including variants of TCF7L2, FTO, and PPARG. Using CRISPR/Cas9 gene-editing technology, it could be possible at some time in the future to correct genetic defects causing β-cell dysfunction or insulin resistance, though this technology is in the preclinical stage.

Meanwhile, the increasing interest in the gut microbiome has spawned investigations into how its composition influences obesity and glycemic control. Manipulating the gut microbiota through probiotics, prebiotics, or fecal microbiota transplantation (FMT) is a research area with therapeutic promise, especially for insulin resistance.

7.4 Personalized Medicine in T2DM Management

Personalized or precision medicine is a rapidly advancing concept in T2DM management, focusing on individual variability in genetics, lifestyle, microbiome, and metabolic phenotype. Rather than a one-size-fits-all approach, future diabetes care will likely incorporate:

- Pharmacogenomics: Identifying optimal drug types and dosages based on genetic markers.
- Digital biomarkers: Using wearable technology and continuous glucose monitors (CGMs) to guide real-time interventions.
- Machine learning models: Predicting disease progression and treatment responses through AI-based data analysis.

The goal is to tailor antidiabetic therapy based on the patient’s unique biological profile, thereby maximizing efficacy and minimizing side effects.

7.5 Summary and Outlook

Panorama of multifunctional medicine; non-invasive delivery system; highly individualized care pathways characterize the future of antidiabetic weight loss therapy. While agents such as tirzepatide make a giant leap, biotechnology, digital health, and genomic medicine falling into convergence may well change how we treat diabesity. Lastly, continued investment in long-term safety trials and accessibility initiatives will carry the great innovations forward to widespread clinical benefit.

CONCLUSION

Twenty decades ago, the sterilization approach to diabetes mellitus (DM) entailed control of glycemia; it is now known that an integrated approach to the care of patients with T2DM includes enhanced prominence of weight management, cardiovascular protection, and individualization of care. This is critical in the diabesity context, aggression created by the coalescence of obesity and diabetes as it worsens insulin resistance, cardiovascular risk, and the appearance of long-term complications. The latest pharmacological advancements have witnessed the advent of antidiabetic agents in favor of the dual action of maintaining glycemia and management of bodyweight. Among these, GLP-1 receptor agonists, SGLT2 inhibitors, and the newer dual incretin agonists such as tirzepatide are notable for their various clinically relevant applications. These agents and interventions were represented in clinical trials, including LEADER, STEP, EMPA-REG OUTCOME, and SURPASS. These drugs appeared to produce not only the best glycemic effect but also very good effects in reducing cardiovascular events, promoting sustained weight loss, and improving the quality of life.The future of diabesity treatment is such a promising one. Newer oral GLP-1 analogues, triple receptor agonists, gene-based therapies, and precision medicine frameworks are in the process of reshaping therapeutic paradigms. Considering thus all of these factors, therapy must be individualized so that it best fits the patient--with a concurrent consideration of genetic, metabolic, and behavioral aspects. In conclusion, metabolic, cardiovascular, and weight-management goals have merged into one, and this amalgamation is now mandatory in T2DM management.Moreover, since all other therapeutic goals are ultimately subjacent to glycaemic control, the latter remains a paramount consideration before treatment induction. Because the remit of the disease is so broad, the ability of treatment to keep glycaemic control should be seen not in isolation but rather alongside management of dyslipidaemia, hypertension, and other comorbid states, all designed to decrease the risk of long-term complications of essential diabetes. According to existing treatment guidelines, blood pressure control and reduction of LDL cholesterol must be considered alongside glycaemic control. Where education and lifestyle interventions do not help reduce blood glucose and blood pressure levels, medicines must be used.

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