

OFF-LABEL USE OF TIRZEPATIDE (MOUNJARO®) FOR WEIGHT LOSS: HEALTH BENEFITS AND RISKS

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Abstract

The study analyzed the *off-label* use of tirzepatide (Mounjaro®) for weight loss in individuals without formal clinical indication, addressing its benefits, risks, and clinical, ethical, and regulatory implications. The research sought to understand the available scientific evidence regarding the efficacy and safety of this use outside the approved indications. A narrative literature review was conducted, with a structured search in the PubMed database using MeSH descriptors, free terms, and Boolean operators. The strategy identified 32 publications, of which 14 studies were selected after applying eligibility criteria. The analysis showed that tirzepatide has significant potential for reducing body weight and improving metabolic outcomes; however, use without formal indication involves risks related to adverse events, lack of proper monitoring, and limitations of the available evidence. The study contributes to expanding the understanding of the rational use of tirzepatide and reinforces the need for therapeutic decisions based on scientific evidence, patient safety, and individualized assessment.

Keywords: Drug-related side effects and adverse reactions, Incretin receptor agonists, Obesity, Weight loss, *Off-label* use.

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INTRODUCTION

Obesity is one of the foremost challenges facing global public health. Its high prevalence increases the incidence of chronic diseases and reduces the population's quality of life. This situation has driven the search for more effective therapeutic strategies to manage body weight. Among these strategies, pharmacological treatment has gained greater prominence in recent years. Incretin receptor agonists have assumed a leading role because of the results achieved in reducing weight and improving metabolic parameters. Within this context, tirzepatide stands out for its innovative mechanism of action and promising clinical outcomes in individuals with obesity and type 2 diabetes mellitus (Abdelrahman et al., 2025; Rodriguez; Hartmann, 2025).

Tirzepatide is a dual agonist of the glucose-dependent insulintropic polypeptide (GIP) and glucagon-like peptide-1 (GLP-1) receptors. This characteristic distinguishes it from conventional GLP-1 receptor agonists. Through different physiological mechanisms, the drug improves glycemic control and significantly reduces body weight. These mechanisms include increased satiety, delayed gastric emptying, and reduced food intake. Tirzepatide was initially developed to treat type 2 diabetes mellitus. Subsequently, clinical studies demonstrated consistent benefits in the treatment of obesity, broadening its therapeutic potential (Thiriveedi et al., 2026; Rodriguez; Hartmann, 2025).

The clinical performance of tirzepatide has attracted growing interest among healthcare professionals and patients. This interest has extended beyond officially approved indications. Consequently, its off-label use for weight loss has increased considerably in several countries. Extensive exposure on social media, the sharing of experiences by digital influencers, and the emphasis placed on aesthetic standards have contributed to this phenomenon. In addition, the high demand for the drug has encouraged new forms of access and broadened the debate on the rational use of this therapy (Han et al., 2023; Turnock et al., 2025; Jackson et al., 2026).

Although clinical studies have demonstrated substantial reductions in body weight, the indiscriminate use of tirzepatide raises significant concerns. The literature describes relevant metabolic

benefits, particularly in individuals with overweight or obesity. However, it also reports adverse events that may compromise treatment safety. These complications notably include muscular manifestations, fluid and electrolyte disturbances, and other potentially serious effects. These findings reinforce the need for appropriate clinical monitoring and careful assessment of the risk-benefit balance, particularly when the drug is used outside its approved indications (Rodriguez et al., 2024; Snell-Bergeon et al., 2025; Bodanowitz et al., 2025; Shah et al., 2025).

Despite the increasing number of publications on incretin receptor agonists, gaps remain regarding the off-label use of tirzepatide for weight loss. Most studies focus on the drug's efficacy in populations with a formal clinical indication. By contrast, studies that comprehensively discuss the benefits, risks, ethical considerations, and regulatory implications of its use in individuals without an established indication are less common. This limitation highlights the need to compile and critically analyze the available scientific knowledge to provide a broader understanding of the subject (Abdelrahman et al., 2025; Maqsood et al., 2026).

Against this background, the present study aims to critically analyze the available scientific evidence regarding the off-label use of tirzepatide (Mounjaro®) for weight loss in individuals without a formal clinical indication. It seeks to discuss the pharmacological mechanisms associated with weight loss, clinical benefits, major health risks, limitations reported in the literature, relevant ethical and regulatory considerations, and future prospects for the rational use of this drug. In this way, the study intends to contribute to a critical understanding of the available evidence and support clinical decisions grounded in the best scientific knowledge available.

METHODOLOGY

The present study consisted of a literature review conducted as a narrative review. This design made it possible to compile, analyze, and critically interpret the available scientific evidence on the off-label use of tirzepatide (Mounjaro®) for weight loss. The narrative review approach was selected because

it allows for a broad examination of the subject. This method facilitated the integration of different types of evidence, concepts, clinical applications, pharmacological considerations, limitations, controversies, and future perspectives related to the object of study.

The review was guided by the following research question: What scientific evidence is available regarding the benefits, risks, and implications of the off-label use of tirzepatide for weight loss in individuals without a formal clinical indication? The PICO framework was used to assist in organizing the search strategy. The population consisted of individuals without a formal clinical indication for tirzepatide. The intervention was the off-label use of the drug for weight loss. The comparison included use in accordance with a clinical indication, other pharmacological strategies, or no treatment, when addressed by the selected studies. The outcomes encompassed weight-loss benefits, health risks, adverse events, clinical implications, ethical considerations, and regulatory issues.

The literature survey was conducted through a structured search of the PubMed database. The search strategy used controlled Medical Subject Headings (MeSH), free-text terms searched in the title and abstract fields, synonyms related to the subject, and the Boolean operators AND and OR. Three complementary search strategies were developed. The first prioritized high sensitivity to increase the retrieval of potentially relevant studies. The second prioritized greater specificity. The third combined MeSH terms and free-text terms to maximize the scope and precision of the results.

Predefined inclusion criteria were established. Studies were considered eligible if they addressed the off-label use of tirzepatide for weight loss, its pharmacological mechanisms, clinical applications, benefits, risks, safety, effectiveness, ethical considerations, or regulatory aspects. Publications involving individuals with overweight or obesity, or individuals who used tirzepatide for weight loss regardless of a formal clinical indication, were also included. Different methodological designs were accepted, including cohort, case-control, cross-sectional, and longitudinal studies; clinical trials; observational studies; qualitative research; mixed-methods studies; systematic reviews; meta-analyses; doctoral theses; master's dissertations; experience reports; and case studies considered relevant to the subject. The time frame

encompassed publications from 2005 to 2025. Only studies available in full text and in the languages specified by the researcher were considered.

Exclusion criteria were also defined. Studies without a direct relationship to the off-label use of tirzepatide for weight loss were excluded. Publications addressing only obesity, diabetes mellitus, or other GLP-1 receptor agonists, without specific discussion of tirzepatide or off-label use relevant to the purpose of this review, were likewise excluded. Exclusively laboratory-based, experimental, or pharmaceuticals studies were excluded when they did not present a relevant clinical discussion. Editorials, letters to the editor, commentaries, opinion pieces, conference abstracts, studies duplicated across the databases consulted, publications outside the established period, studies without full-text availability, and works with insufficient methodological descriptions or that did not address the proposed research question were also excluded.

Application of the search strategies initially identified 32 publications. The studies were then assessed against the predefined eligibility criteria. Titles and abstracts were reviewed, followed by the full texts. This stage made it possible to determine the relevance of each publication to the objectives of the review. At the end of the selection process, 14 articles showed the closest alignment with the subject and were included in the analysis.

The studies were analyzed through critical reading and qualitative interpretation of the available evidence. The selected articles were organized according to thematic affinity. The synthesis addressed the pharmacological mechanisms of tirzepatide, clinical benefits, adverse events, limitations of off-label use, ethical and regulatory issues, and gaps identified in the literature. Procedures specific to systematic reviews, such as formal risk-of-bias assessment, meta-analysis, or standardized data extraction, were not performed. The interpretation of the results prioritized the critical integration of evidence in accordance with the methodological principles of a narrative review.

LITERATURE REVIEW

OBESITY AND THE EVOLUTION OF PHARMACOLOGICAL TREATMENT

Obesity is a chronic, multifactorial disease with a high prevalence worldwide. This condition results from the interaction of genetic, metabolic, environmental, and behavioral factors. Excess adipose tissue contributes to the development of several chronic noncommunicable diseases. These notably include type 2 diabetes mellitus, cardiovascular diseases, arterial hypertension, and metabolic dysfunction-associated steatotic liver disease. These conditions increase morbidity and mortality in the population. This situation reinforces the need for therapeutic strategies capable of promoting sustained weight loss and improving the metabolic profile. In recent years, the treatment of obesity has received greater attention because of the consistent increase in its prevalence and the economic impact of its associated complications (Abdelrahman et al., 2025; Rodriguez; Hartmann, 2025).

For many years, obesity treatment was based primarily on lifestyle interventions. Caloric restriction, regular physical activity, and multidisciplinary monitoring constituted the pillars of clinical management. However, many patients experienced difficulty maintaining weight loss over the long term. Partial or complete regain of lost weight frequently occurred after interventions were discontinued. In addition, previously available medications had limited efficacy or an unfavorable safety profile in some patients. These limitations encouraged the development of new pharmacotherapies with greater effectiveness and better clinical tolerability (Rodriguez; Hartmann, 2025).

Advances in knowledge of incretin physiology brought about an important change in the pharmacological treatment of obesity. Glucagon-like peptide-1 receptor agonists assumed a prominent role because of their ability to reduce appetite and promote weight loss. These drugs also improved glycemic control and reduced cardiometabolic risk factors in different patient groups. The results obtained in clinical studies expanded scientific interest in therapies that act on multiple metabolic pathways. This development established incretin receptor agonists as one of the principal pharmacological alternatives for treating obesity and associated metabolic diseases (Abdelrahman et al., 2025).

The development of dual agonists represented a further advance in this therapeutic field.

Tirzepatide emerged as the first drug capable of simultaneously activating GIP and GLP-1 receptors. This characteristic broadened the therapeutic potential observed with conventional GLP-1 receptor agonists. Studies demonstrated substantial reductions in body weight, improved glycemic control, and favorable effects on different metabolic parameters. These results strengthened clinical interest in the use of tirzepatide for both type 2 diabetes mellitus and obesity. Consequently, the drug assumed a prominent position in research on next-generation anti-obesity therapies (Thiriveedi et al., 2026).

TIRZEPATIDE: DEVELOPMENT, PHARMACOLOGICAL MECHANISM, AND APPROVED APPLICATIONS

Tirzepatide represents an important advance in the pharmacological treatment of metabolic diseases. The drug was initially developed to improve glycemic control in individuals with type 2 diabetes mellitus. Its development resulted from the search for therapies capable of acting on different physiological mechanisms involved in energy homeostasis. This strategy made it possible to enhance the effects observed with traditional GLP-1 receptor agonists. Clinical studies demonstrated that tirzepatide was highly effective in reducing blood glucose and body weight. These results facilitated its rapid incorporation into the therapeutic options available for treating metabolic diseases (Thiriveedi et al., 2026).

The principal distinguishing feature of tirzepatide is its dual mechanism of action. The drug acts simultaneously on the glucose-dependent insulinitropic polypeptide and glucagon-like peptide-1 receptors. This combined action enhances glucose-dependent insulin secretion and reduces glucagon release. In addition, the drug delays gastric emptying and increases satiety. These effects reduce food intake and promote a negative energy balance. The concurrent activation of these two metabolic pathways partly explains the high efficacy of tirzepatide in reducing body weight observed in clinical studies (Abdelrahman et al., 2025; Thiriveedi et al., 2026).

The metabolic effects of tirzepatide extend beyond weight loss. The drug improves glycemic control by reducing fasting blood glucose and glycated hemoglobin levels. Treatment also improves insulin sensitivity and contributes to a reduction in insulin resistance. Some studies have observed additional benefits in cardiovascular and hepatic parameters, particularly among individuals with obesity and metabolic syndrome. These findings have broadened interest in using tirzepatide for different clinical conditions associated with excess weight. Nevertheless, its indication should remain grounded in the available scientific evidence and current regulatory recommendations (Rodriguez; Hartmann, 2025).

Tirzepatide first received regulatory approval for the treatment of type 2 diabetes mellitus. Subsequently, new clinical trials demonstrated consistent benefits in reducing body weight among individuals with obesity or overweight associated with comorbidities. These results supported the expansion of the drug's therapeutic indications in different countries. Despite this expansion, the use of tirzepatide remains subject to the indications approved by the respective regulatory agencies. Use in circumstances other than those specified in the prescribing information constitutes off-label prescribing and requires individualized clinical assessment (Rodriguez; Hartmann, 2025).

Comparative studies have reinforced tirzepatide's therapeutic potential in the treatment of obesity. Research conducted by Rodriguez et al. (2024) demonstrated that tirzepatide produced a greater reduction in body weight than semaglutide in adults with overweight or obesity. The authors also observed high clinical effectiveness during participant follow-up. These results strengthened scientific interest in the drug and expanded its use in clinical practice. Nevertheless, the findings themselves underscore that therapeutic indications should take into account individual patient characteristics, the available evidence, and appropriate medical monitoring, particularly given the growing interest in using the drug for aesthetic purposes and outside formally approved indications (Rodriguez et al., 2024).

OFF-LABEL MEDICATION USE AND REGULATORY CONSIDERATIONS

Off-label use refers to prescribing a drug under conditions that differ from those approved by regulatory authorities. This practice may involve different therapeutic indications, doses, routes of administration, or populations not covered by the prescribing information. Off-label use does not, in itself, constitute inappropriate or unlawful practice. In several circumstances, it is supported by scientific evidence and accumulated clinical experience. Nevertheless, its adoption requires careful assessment of the risks, benefits, and clinical circumstances of each patient. This decision should also consider the availability of evidence supporting the proposed indication (Maqsood et al., 2026).

Off-label prescribing may represent a therapeutic alternative when no approved treatments exist for a particular clinical condition or when evidence demonstrates relevant benefits in specific circumstances. In such cases, clinical judgment plays a fundamental role in decision-making. Healthcare professionals must carefully assess the relationship among efficacy, safety, and therapeutic need. In addition, patients must receive clear information about the nature of the prescription and the potential limitations of the available evidence. This process strengthens patient autonomy and supports shared decision-making between physicians and medication users (Maqsood et al., 2026).

The growing demand for weight-loss drugs has created new challenges for regulatory authorities and healthcare systems. Increased demand for GLP-1 receptor agonists and tirzepatide has encouraged the emergence of different marketing strategies. These notably include the supply of compounded formulations and direct-to-consumer sales through digital platforms. This situation has heightened concerns regarding quality control, product safety, and the traceability of medications supplied outside conventional distribution channels. These factors reinforce the need for greater regulatory surveillance and appropriate market oversight (DiStefano et al., 2025).

The availability of compounded formulations and products marketed outside official manufacturers also raises concerns about treatment safety. The composition, stability, and quality of these products may vary according to the manufacturing process and the controls adopted by suppliers. These

differences may compromise therapeutic efficacy and increase the risk of adverse events. Furthermore, ease of purchase may facilitate use without appropriate medical supervision. This context highlights the importance of regulatory policies capable of protecting patients and ensuring the rational use of these drugs (DiStefano et al., 2025).

Ethical considerations also occupy a central place in the discussion of the off-label use of tirzepatide for weight loss. The increasing use of the drug for aesthetic purposes intensifies questions concerning the appropriate prioritization of healthcare resources and access to treatment among patients with a formal clinical indication. At the same time, online communities and social networks share information, personal experiences, and usage strategies that are not always supported by scientific evidence. This phenomenon may influence therapeutic decisions and encourage potentially unsafe practices. Accordingly, the off-label use of tirzepatide requires not only careful clinical evaluation but also ongoing ethical and regulatory reflection to ensure patient safety and the responsible use of this therapeutic technology (Turnock et al., 2025; Maqsood et al., 2026).

EXPANSION OF TIRZEPATIDE USE FOR WEIGHT LOSS

The development of tirzepatide generated substantial interest within the scientific community and among the general population. The significant results obtained in clinical studies increased its visibility. This interest intensified following reports of weight loss exceeding that observed with other drugs used to treat obesity. As a result, tirzepatide became widely associated with rapid weight loss. This situation favored the expansion of its use beyond formally approved clinical indications. Growing demand demonstrates that the reported benefits strongly influenced public perceptions of tirzepatide's therapeutic potential (Han et al., 2023).

Social media and search engines played an important role in this process of popularization. The sharing of personal accounts, content produced by digital influencers, and news about weight loss increased interest in the drug. Han et al. (2023) identified a substantial increase in searches related to the

use of GLP-1 receptor agonists for cosmetic weight loss. Similarly, Jackson et al. (2026) observed growing public interest in using these drugs for weight loss. These findings demonstrate that the dissemination of information in digital environments significantly influenced demand for weight-loss pharmacotherapies.

Increased demand fostered the use of tirzepatide by individuals without a formal clinical indication. In many cases, the primary objective became the achievement of short-term aesthetic results. This behavior changed the traditional profile of users of these medications. Turnock et al. (2025) observed that online communities began sharing information on administration regimens, dose adjustments, and strategies for minimizing adverse effects. The authors emphasized that many of these recommendations were based on personal experience rather than established scientific evidence. This situation increases the risk of inappropriate use and unnecessary exposure to adverse events.

Growing interest in tirzepatide has also changed the epidemiological profile of potential users. Jackson et al. (2026) found an increase in both the use of and intention to use GLP-1 receptor agonists for weight loss among the general population. This phenomenon involved individuals with different clinical characteristics and varying degrees of excess weight. In some cases, the drug was sought by individuals without established obesity or a formal medical indication. These findings demonstrate that the expansion of tirzepatide use extends beyond the strictly clinical context and encompasses social, cultural, and behavioral factors. This situation reinforces the need for professional guidance, health education, and stronger policies promoting the rational use of medicines (Jackson et al., 2026; Turnock et al., 2025).

RESULTS AND DISCUSSION

RESULTS

The literature search strategy initially identified 32 publications potentially relevant to the subject. These studies were assessed against the predefined inclusion and exclusion criteria. The next stage consisted of reviewing the titles, abstracts, and full texts. This process made it possible to determine how

closely each publication aligned with the objectives of the review. At the end of the selection process, 14 articles were found to have the greatest scientific relevance and were included in the critical analysis. These studies formed the basis of the present narrative review.

The selected studies were published between 2023 and 2026. This period demonstrates that scientific production on the subject is recent and rapidly expanding. Most publications were concentrated between 2025 and 2026. This finding reflects the growing clinical and scientific interest in tirzepatide following the publication of studies demonstrating its high efficacy in reducing body weight. The body of publications also reflects increasing debate concerning the off-label use of incretin receptor agonists for weight loss (Han et al., 2023; Rodriguez et al., 2024; Abdelrahman et al., 2025; Maqsood et al., 2026).

The articles employed different methodological designs. The sample included clinical trials, observational studies, effectiveness studies, population analyses, narrative reviews, literature reviews, pharmaceutical policy studies, case reports, and research on user behavior. This methodological diversity broadened the understanding of the phenomenon under investigation. The different designs made it possible to analyze both the clinical efficacy of tirzepatide and considerations related to its safety, off-label use, ethical implications, and regulatory issues (Rodriguez et al., 2024; Turnock et al., 2025; DiStefano et al., 2025; Thiriveedi et al., 2026).

The thematic analysis of the studies identified five major areas of investigation. The first addressed the pharmacological mechanisms and therapeutic potential of tirzepatide. The second focused on its clinical efficacy in reducing body weight. The third comprised studies on adverse events and treatment safety. The fourth discussed the growth of off-label use, its regulatory aspects, and its ethical implications. The fifth highlighted gaps in knowledge and prospects for future research. This organization facilitated an integrated analysis of the evidence and made it possible to understand the subject from different scientific perspectives (Abdelrahman et al., 2025; Rodriguez; Hartmann, 2025; Maqsood et al., 2026).

The distribution of publications also revealed differences in the focus of the studies. Some focused on the efficacy and clinical effectiveness of tirzepatide in individuals with overweight, obesity, or type 2 diabetes mellitus (Rodriguez et al., 2024; Snell-Bergeon et al., 2025). Others prioritized the assessment of rare adverse events and treatment-related complications (Bodanowitz et al., 2025; Shah et al., 2025; Hindi et al., 2026). Part of the literature analyzed user behavior, growing public interest, and the regulatory challenges arising from the expansion of use for aesthetic purposes (Han et al., 2023; Jackson et al., 2026; Turnock et al., 2025; DiStefano et al., 2025). This body of evidence demonstrates that the off-label use of tirzepatide is a multidimensional subject. It encompasses pharmacological, clinical, epidemiological, social, ethical, and regulatory considerations. These results provide the basis for the discussions presented in the following subsections of this review.

DISCUSSION

The literature analyzed demonstrates that tirzepatide represents one of the foremost recent advances in the pharmacological treatment of obesity and metabolic diseases. The studies included in this review presented consistent findings regarding its efficacy in reducing body weight and improving metabolic parameters. However, most of this evidence was produced in individuals with a formal clinical indication for the drug. This limits the direct extrapolation of the results to individuals who use tirzepatide exclusively for aesthetic purposes or without an established medical indication. This distinction must be considered when interpreting the benefits described in the literature (Rodriguez et al., 2024; Rodriguez; Hartmann, 2025; Thiriveedi et al., 2026).

Clinical studies have demonstrated that tirzepatide produces greater weight loss than other incretin receptor agonists. Rodriguez et al. (2024) found a greater reduction in body weight when comparing tirzepatide with semaglutide in adults with overweight or obesity. This result reinforces the therapeutic potential of the dual GIP and GLP-1 receptor agonist. In addition to weight loss, studies have also identified improvements in glycemic control and other metabolic parameters. These findings justify the

growing interest in the drug among healthcare professionals and patients (Rodriguez et al., 2024; Thiriveedi et al., 2026).

The observed benefits can be explained by tirzepatide's pharmacological mechanism. The simultaneous activation of GIP and GLP-1 receptors enhances glucose-dependent insulin secretion. The drug also reduces glucagon secretion, delays gastric emptying, and increases satiety. These effects promote lower food intake and better metabolic control. Abdelrahman et al. (2025) emphasize that this combination of mechanisms distinguishes tirzepatide from conventional GLP-1 receptor agonists. This characteristic may explain its high clinical efficacy in reducing body weight.

Despite the demonstrated benefits, the literature also highlights important treatment-related risks. Gastrointestinal adverse events are among the most common manifestations. However, some studies have reported less common and potentially serious complications. Bodanowitz et al. (2025) described a case of rhabdomyolysis following the initiation of tirzepatide therapy. Shah et al. (2025) reported syndrome of inappropriate antidiuretic hormone secretion associated with seizures. Hindi et al. (2026) also identified psychiatric events and difficulties related to the administration of GLP-1 receptor agonists used for weight loss. These findings demonstrate that treatment safety still requires continuous monitoring.

The risks associated with off-label use become even more relevant when the drug is used without appropriate medical supervision. Maqsood et al. (2026) emphasize that indiscriminate use may increase exposure to adverse events and hinder the early identification of complications. Turnock et al. (2025) observed that many users share usage protocols in online communities without scientific support. This behavior encourages inappropriate administration practices, empirical dose adjustments, and improper discontinuation of treatment. These situations increase the likelihood of unsatisfactory outcomes and compromise patient safety.

Another relevant consideration concerns the influence of social media on the popularization of tirzepatide. Han et al. (2023) identified increased public interest in GLP-1 receptor agonists intended for cosmetic weight loss. Jackson et al. (2026) also found growing intention to use these medications among

the general population. These results suggest that social and cultural factors have begun to influence demand for treatment as much as clinical indications do. This situation heightens the need for health education and guidance based on scientific evidence.

The review also highlights significant regulatory challenges. DiStefano et al. (2025) demonstrated that the growth of the compounded formulation market and direct-to-consumer sales increases concerns about the quality and safety of the products supplied. This phenomenon may facilitate the use of drugs without adequate assurance of their origin or proper health surveillance. Furthermore, high demand may compromise access to treatment for patients with a formal clinical indication. These factors reinforce the importance of strengthening oversight policies and promoting the rational use of medicines.

Another issue concerns the limitations of the evidence currently available. Most studies focus on individuals with obesity or type 2 diabetes mellitus. Few studies specifically address the off-label use of tirzepatide among individuals without a formal clinical indication. Studies assessing long-term safety in this population are also scarce. This limitation reduces the ability to draw definitive conclusions regarding the benefit-risk profile of indiscriminate use of the drug (Maqsood et al., 2026; Thiriveedi et al., 2026).

Overall, the studies analyzed converge on tirzepatide's considerable therapeutic potential. However, they also demonstrate consensus regarding the need for caution when it is used outside approved indications. The efficacy observed in clinical trials does not eliminate the need for individualized patient assessment. Medical monitoring remains indispensable throughout treatment. Further research should clarify long-term effects, establish more precise criteria for clinical indication, and broaden knowledge regarding the safety of off-label use. This information may contribute to safer therapeutic decisions grounded in scientific evidence.

FINAL CONSIDERATIONS

The present narrative review demonstrated that tirzepatide has considerable therapeutic potential for reducing body weight and managing metabolic abnormalities associated with obesity. The studies

analyzed indicated important benefits related to weight loss, improved glycemic control, and modulation of the physiological mechanisms involved in energy balance. These results explain the growing interest in the drug in both clinical practice and the general population. Nevertheless, the use of tirzepatide for weight loss outside approved indications requires careful assessment.

The analysis of the literature showed that the off-label use of tirzepatide is a complex phenomenon. It encompasses pharmacological, clinical, social, ethical, and regulatory considerations. The drug has demonstrated relevant efficacy in populations with an established clinical indication. However, applying these results to individuals without a formal indication remains subject to scientific limitations. The absence of evidence specific to this group reduces the certainty of conclusions concerning indiscriminate use for exclusively aesthetic purposes.

The observed benefits do not eliminate the risks associated with treatment. Tirzepatide may cause adverse events ranging from common manifestations to less frequent and potentially serious complications. Use without professional supervision may increase exposure to these risks. Individualized assessment remains essential to determine whether the drug is genuinely necessary. Rational use must consider clinical characteristics, therapeutic objectives, contraindications, and appropriate monitoring.

The popularization of tirzepatide has also revealed challenges related to access, the dissemination of inaccurate information, and use motivated by aesthetic standards. Social media has increased demand for the drug and influenced consumer decisions. This situation reinforces the importance of health education and responsible scientific communication. Prescribing should remain evidence-based rather than being driven solely by social trends or expectations of rapid results.

The present review had limitations associated with the availability and characteristics of the studies identified. The current literature is more heavily concentrated on patients with obesity or type 2 diabetes mellitus. Studies specifically addressing individuals without a formal clinical indication remain limited. In addition, long-term studies assessing safety, maintenance of results, and the effects of prolonged use outside approved indications are lacking.

Further research should expand knowledge concerning the effectiveness and safety of tirzepatide in different populations. Future studies should evaluate more precise criteria for indication, clinical monitoring, and risk prevention. The production of robust evidence may contribute to safer therapeutic decisions. Tirzepatide may thereby be used responsibly, with due consideration for its proven benefits and the limitations of the scientific evidence.

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