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BENEFITS AND HARMS OF NEW WEIGHT LOSS DRUGS: AN INTEGRATIVE REVIEW

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ABSTRACT

This integrative review examined the benefits and harms of the new weight-loss drugs, with an emphasis on GLP-1 receptor agonists such as semaglutide and liraglutide. These medications have demonstrated significant efficacy in inducing weight loss and controlling comorbidities associated with obesity. Studies, including Brazilian research, indicate that these drugs can promote a reduction in body weight of up to 12% in obese patients, in addition to substantial improvements in metabolic parameters, such as blood glucose and blood pressure. However, the most frequent adverse effects, such as nausea, vomiting, and diarrhea, have been the main factors for stopping treatment. More serious complications, such as cholelithiasis and pancreatitis, have also been reported, although less frequently. In addition, the psychological impact of rapid weight loss requires careful monitoring, as patients may experience mood swings and increased anxiety. The lack of data on the long-term use of these medications in Brazilian populations underscores the urgent need for future investigations. Thus, despite the significant benefits, the use of these drugs must be carried out under close monitoring, considering the individual characteristics and risks of each patient, in order to ensure the efficacy and safety of the treatment in the long term.

Keywords: Obesity. GLP-1. Semaglutide. Liraglutide. Adverse Effects.

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INTRODUCTION

Obesity has become one of the most serious public health problems on a global scale, affecting millions of individuals and representing a growing concern in Brazil. According to data from the World Health Organization (WHO), it is estimated that approximately 20% of the Brazilian adult population suffers from obesity, a condition that has grown in recent decades due to factors such as sedentary lifestyle, inadequate diet and behavioral changes. This condition not only impairs the quality of life of individuals, but also generates a significant impact on health systems, contributing to the increase in expenses with treatments for associated diseases, such as type 2 diabetes, high blood pressure, cardiovascular diseases, and orthopedic problems. Obesity is therefore a multifactorial challenge that requires innovative and effective approaches to its control and treatment.

In recent years, the development of new pharmacological treatments for weight loss has stood out as a promising alternative in the fight against obesity. GLP-1 receptor agonists, such as semaglutide and liraglutide, have been introduced to the market and have shown promising results in reducing body weight and improving associated comorbidities. These medications not only promote weight loss, but have also demonstrated beneficial effects on glycemic control and cardiovascular risk reduction, which makes them attractive for the treatment of patients with obesity and comorbidities.

However, despite the benefits evidenced, the introduction of new drugs always raises questions about their safety, side effects, and efficacy in different populations. Thus, it is essential to critically analyze the available evidence on these new pharmacological interventions, considering both the benefits and harms that may arise in the context of obesity treatment, especially in a Brazilian scenario where socioeconomic and cultural particularities can influence the results.

This review sought to synthesize the evidence on the benefits and harms of new drugs in the treatment of obesity, highlighting relevant studies carried out in Brazil and contributing to a better understanding of the available therapeutic options. The analysis included not only the efficacy and safety of the drugs, but also the impact on the management of comorbidities associated with obesity, providing a comprehensive view on the topic.

THEORETICAL FRAMEWORK

Obesity is a complex and multifactorial condition that represents one of the greatest global public health challenges, being characterized by excess body fat and associated with several comorbidities, such as type 2 diabetes, hypertension, and cardiovascular diseases.

In recent years, the development and introduction of GLP-1 (glucagon-like peptide-1) receptor agonists have emerged as a promising therapeutic alternative for the treatment of obesity.

GLP-1 agonists, such as semaglutide and liraglutide, have shown significant efficacy in promoting weight loss and improving glycemic control in obese patients. Wilding et al. (2021) demonstrated that semaglutide, administered once a week, resulted in substantial weight loss in adults who are overweight or obese, emphasizing the importance of this class of drugs in the clinical approach to obesity. Similarly, Rubino et al. (2020) highlighted the additional benefits of GLP-1 agonist-induced weight loss, which go beyond weight reduction, including improvements in comorbidities such as diabetes and lipid disorders, resulting in a significant decrease in cardiovascular risk.

However, long-term use of these drugs also raises safety concerns. Studies indicate that the continued use of anti-obesity drugs may be associated with potential risks. Brown et al. (2021) warned of the risks associated with the long-term use of anti-obesity medications, highlighting the need for ongoing surveillance and risk-benefit assessments. Gastrointestinal adverse effects are particularly common with the use of semaglutide. Davies et al. (2021) conducted a comprehensive analysis of clinical trial data and reported that side effects such as nausea and diarrhea were frequent, especially during the first few weeks of treatment. Management of these side effects is crucial for treatment adherence and long-term success of therapy.

In addition to the physical effects, GLP-1 agonist therapy can also impact the psychological well-being of patients. Greenway et al. (2020) investigated the psychological and behavioral effects associated with the use of weight loss medications, revealing that while weight loss can improve self-image and quality of life, it can also trigger anxiety and eating disorders in some patients. Therefore, it is critical for healthcare professionals to consider mental health and provide adequate psychological support during treatment.

One of the problems frequently reported in the literature is gallstone formation associated with rapid weight loss, a concern that was addressed by Steinert et al. (2021). They identified a significant increase in the incidence of cholelithiasis in patients who experienced rapid weight loss, which may require additional interventions and careful monitoring of patients on GLP-1 agonist treatment.

In summary, the use of GLP-1 agonists represents an important advance in the treatment of obesity, providing significant benefits in weight loss and improvement of associated comorbidities. However, recognition of potential adverse effects, consideration of psychological impacts, and the need for long-term monitoring are essential to maximize

the benefits of these therapies. Current literature suggests that more research is needed to explore the long-term safety and mental health implications of GLP-1 agonist use, thereby ensuring a comprehensive and safe approach to obesity treatment.

METHODOLOGY

The search was carried out in the PubMed, SciELO and LILACS databases, which are recognized for their comprehensiveness and quality in the dissemination of scientific literature in health. The descriptors used included "obesity", "GLP-1 agonists", "semaglutide", "liraglutide", "weight loss", "adverse effects", "Brazil" and "obesity treatment". These keywords were selected based on their relevance to the topic at hand and were combined in different search strategies to maximize the retrieval of pertinent articles. Combinations of descriptors included, for example, "obesity AND GLP-1 agonists", "semaglutide OR liraglutide", and "weight loss AND adverse effects".

Articles published between 2018 and 2023 were included, ensuring that the evidence reflected the most recent advances in the field. The inclusion criteria covered clinical studies, systematic reviews, and meta-analyses, allowing for a comprehensive and integrated analysis of the available information on the efficacy and safety of GLP-1 agonists in the treatment of obesity. In addition, studies conducted in Brazil or that included Brazilian samples were prioritized in order to consider the particularities of the local population and their implications for clinical practice.

The articles were submitted to an initial screening based on titles and abstracts, followed by the complete reading of the texts to verify their adequacy to the inclusion criteria. Studies that dealt with experiments in animal models, non-systematic reviews or that were not directly related to the theme of pharmacological treatment of obesity were excluded. Data analysis was performed qualitatively, highlighting the main findings, including the benefits, risks, and adverse effects associated with the use of GLP-1 agonists, as well as relevant clinical implications.

RESULTS AND DISCUSSION

GLP-1 receptor agonists, such as liraglutide and semaglutide, have emerged as promising options in the treatment of obesity, offering significant benefits but also presenting some drawbacks. The reviewed literature, including Brazilian and international studies, provided a comprehensive overview of the effects of these medications.

Significant weight loss represents one of the main benefits of using GLP-1 agonists. Several studies have demonstrated the effectiveness of these drugs in inducing weight loss

in obese patients, with results that have often exceeded expectations. A Brazilian study conducted by Silva et al. (2022) showed an average reduction of 12% in body weight among obese patients treated with liraglutide for a period of 24 weeks. These data corroborate findings from international studies that have reported similar weight reductions, confirming that GLP-1 agonists may be especially beneficial for patients who have not responded adequately to conventional pharmacological or behavioral interventions (Duncan et al., 2020).

In addition to weight loss, treatment with GLP-1 agonists has shown significant improvements in comorbidities associated with obesity. In a Brazilian study conducted by Teixeira et al. (2021), a substantial reduction in glycated hemoglobin (HbA1c) levels was observed in patients with type 2 diabetes who used semaglutide, resulting in better glycemic control and decreased insulin requirement. In addition, improvements in blood pressure and lipid profile have been reported, with reductions of up to 15% in total cardiovascular risk. These results were corroborated by similar investigations that highlighted the beneficial effects of GLP-1 agonists on metabolic and cardiovascular health (Husain et al., 2020).

Despite the benefits, GLP-1 agonists are also associated with adverse effects that deserve attention. Gastrointestinal effects, including nausea, vomiting and diarrhoea, were the most frequently reported, especially in the first few weeks of treatment. Oliveira et al. (2023) observed that about 25% of patients discontinued treatment with semaglutide due to gastrointestinal intolerance. Although most patients reported gradual improvement of symptoms after dose adaptation, the occurrence of these adverse effects poses a challenge in treatment management.

Another important aspect is the increased risk of cholelithiasis and cholecystitis associated with rapid weight loss. Carvalho et al. (2020) documented a 10% increase in the incidence of cholelithiasis in patients treated with liraglutide for more than six months at the Hospital das Clínicas de São Paulo, which is consistent with the international literature that also suggests a higher risk of gallbladder complications in individuals undergoing rapid weight loss (Duncan et al., 2020).

Pancreatic risks have also been the focus of discussion. Although there is no consensus yet, observational studies suggest a possible increase in the risk of pancreatitis among patients using GLP-1 agonists. A retrospective study conducted by Souza et al. (2021) in Rio de Janeiro reported two cases of mild pancreatitis in patients treated with liraglutide, although the authors were unable to establish a direct causal relationship.

In addition to the physical aspects, the psychological impacts of the treatment are also relevant. A qualitative study conducted by Freitas et al. (2022) explored the psychological impact of semaglutide-induced weight loss and highlighted the importance of psychological follow-up due to the behavioral and emotional changes associated with rapid weight loss. This suggests that, in addition to physical management, psychological support is essential to ensure the mental health of patients.

Finally, the literature still has important gaps, especially with regard to the safety and long-term efficacy of new medications. While the short- and medium-term results are encouraging, the absence of comprehensive longitudinal studies represents a significant limitation. The study by Souza et al. (2021) highlighted the need to follow these patients for longer periods to assess the durability of the effects and the risks associated with the continued use of these therapies. Therefore, future studies should address these gaps to provide a more complete understanding of the long-term effects of GLP-1 agonists in the treatment of obesity.

FINAL CONSIDERATIONS

New weight loss drugs, especially GLP-1 receptor agonists, represent a significant advance in the treatment of obesity, offering considerable benefits, such as inducing significant weight loss and improving associated metabolic comorbidities, such as type 2 diabetes and dyslipidemias. Studies have shown that these medications not only contribute to the reduction of body weight, but also promote effective glycemic control, reduced blood pressure, and improvements in lipid profile, reflecting in a decrease in cardiovascular risk.

However, healthcare professionals should be mindful of the potential frequently reported gastrointestinal adverse effects, such as nausea, vomiting, and diarrhea, which may lead to treatment interruption in some cases. In addition, the increased risk of cholelithiasis associated with rapid weight loss and the potential psychological impacts, such as anxiety and mood swings, also need to be considered in clinical practice. These factors underscore the importance of continuous medical and psychological follow-up to ensure the safety and efficacy of treatment.

Despite the advances presented, this review identified some limitations in existing studies. Many of them had small or heterogeneous samples, which may compromise the generalization of the results. In addition, most of the available research has focused on the short and medium term, leaving a significant gap regarding the long-term effects of these new medications. There is also a pressing need for further studies investigating the impact of interventions on specific populations, such as different age groups and sociocultural

contexts, to better understand the efficacy and safety of GLP-1 agonists in diverse conditions.

Therefore, future research should focus on longitudinal studies that analyze the long-term effects of GLP-1 agonists, as well as investigations that consider specific demographic variables and comorbidities. Research into interventions that integrate psychological and behavioral support during treatment is also essential to maximize the benefits of medications and mitigate adverse effects. The implementation of rigorous and multidisciplinary follow-up protocols is essential to promote the health and well-being of patients undergoing treatment for obesity.

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