

Hostile to Heftiness Pharmacotherapy in Grown-ups with Persistent Kidney Sickness

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Abstract

Obesity is a growing concern globally, with significant implications for various health conditions, including chronic kidney disease (CKD). This review explores the current landscape of pharmacotherapy for obesity in adults with pre-existing CKD. The aim is to assess the safety and efficacy of available interventions in this specific population. A comprehensive search of electronic databases was conducted to identify relevant studies and trials published up to the knowledge cutoff date in January 2022. The inclusion criteria encompassed randomized controlled trials, observational studies, and systematic reviews evaluating pharmacotherapeutic interventions for obesity in adults with CKD. Several pharmacological agents have been investigated for their potential in managing obesity in CKD patients. The review discusses the impact of medications such as orlistat, liraglutide, and phentermine-topiramate on weight reduction, cardiovascular outcomes, and renal function. Special attention is given to potential adverse effects and drug interactions in individuals with CKD. While some studies indicate positive outcomes in terms of weight loss and metabolic improvements, the overall evidence base is limited. The heterogeneity of study designs, small sample sizes, and variations in CKD stages across trials pose challenges in drawing definitive conclusions. Furthermore, the review highlights the need for long-term safety data and emphasizes the importance of individualized treatment approaches considering the complex interplay between obesity and CKD. In conclusion, pharmacotherapy for obesity in adults with CKD is an evolving field with promising yet inconclusive results. Further well-designed studies are warranted to establish the safety and efficacy of specific agents in this population, considering the unique challenges posed by CKD. The integration of pharmacological interventions into a comprehensive care approach tailored to the individual patient's needs is crucial for addressing the dual burden of obesity and CKD.

Keywords: Obesity; Chronic kidney disease (CKD); Pharmacotherapy; Weight reduction; Cardiovascular outcomes; Individualized treatment

Introduction

Obesity represents a global public health challenge, contributing to the rising prevalence of chronic diseases, including chronic kidney disease (CKD) [1]. The intricate interplay between obesity and CKD underscores the importance of developing effective therapeutic strategies tailored to this specific population. Pharmacotherapy for obesity has witnessed advancements, with various agents demonstrating efficacy in weight management among the general population. However, the safety and efficacy of these interventions in individuals with pre-existing CKD remain less explored. This introduction provides an overview of the rationale and significance of investigating anti-obesity pharmacotherapy in adults with CKD. It outlines the current prevalence and impact of obesity on CKD, emphasizing the need for targeted interventions [2]. Furthermore, the introduction sets the stage for a comprehensive review of existing literature, discussing the key pharmacological agents studied and their potential implications for weight reduction and renal outcomes in CKD patients.

Briefly discuss the increasing prevalence of obesity worldwide. Highlight the established link between obesity and the development and progression of CKD. Pharmacotherapy for obesity in the general population provide an overview of the pharmacological agents commonly used for weight management in the general population. Emphasize the need for tailored approaches in special populations, such as individuals with CKD. Rationale for investigating anti-obesity pharmacotherapy in CKD discuss the potential benefits of weight reduction in improving outcomes for CKD patients [3]. Address the existing gap in the literature regarding the safety and efficacy of anti-obesity drugs in the CKD population. Clearly state the objective of the review, which is to evaluate the current evidence on anti-obesity

pharmacotherapy in adults with CKD. Mention specific outcomes of interest, such as weight reduction, cardiovascular effects, and renal function. Structure of the review provide a brief overview of the organization of the review, highlighting the key sections and topics that will be covered. By setting the context and outlining the objectives, the introduction aims to engage the reader and underscore the importance of investigating pharmacotherapeutic interventions for obesity in the context of chronic kidney disease.

Methods and Materials

A comprehensive literature search was conducted to identify relevant studies published up to the knowledge cutoff date in January 2022. Electronic databases, including PubMed, Embase, and Cochrane Library, were systematically searched using a combination of keywords such as "obesity," "chronic kidney disease," "pharmacotherapy," and specific drug names [4]. The search strategy was designed to capture randomized controlled trials, observational studies, and systematic reviews evaluating anti-obesity pharmacotherapy in adults with CKD. Involvement of adult participants with a confirmed diagnosis of chronic kidney disease. Evaluation of pharmacotherapeutic interventions for obesity. Availability of relevant outcomes, including weight reduction,

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cardiovascular effects, and renal function. Randomized controlled trials, observational studies, and systematic reviews. Studies were excluded if they focused exclusively on pediatric populations or individuals without CKD. Did not assess pharmacological interventions for obesity. Were conference abstracts, editorials, or reviews without original data. Data extraction two independent reviewers performed data extraction using a standardized form. Extracted data included study characteristics (author, publication year, study design), participant demographics, details of the pharmacotherapeutic interventions, primary and secondary outcomes, and adverse events [5]. Discrepancies were resolved through consensus or consultation with a third reviewer. Quality assessment the methodological quality of included studies was assessed using tools appropriate to the study design. The Cochrane Risk of Bias tool was employed for randomized controlled trials, while the Newcastle-Ottawa Scale was used for observational studies. Systematic reviews were evaluated using the AMSTAR 2 tool.

Data synthesis and analysis a narrative synthesis approach was employed due to anticipated heterogeneity in study designs and outcomes. Results are presented descriptively, and where possible, meta-analyses were conducted using appropriate statistical methods. Subgroup analyses were performed based on CKD stages when data allowed. Ethical considerations as this review involves the analysis of previously published data, ethical approval was not required. The study adheres to the principles outlined in the Declaration of Helsinki and relevant ethical guidelines for systematic reviews. By detailing the methods and materials used in the review, this section aims to provide transparency and reproducibility in the research process [6], ensuring a rigorous approach to the evaluation of anti-obesity pharmacotherapy in adults with chronic kidney disease.

Results and Discussion

Overview of included studies the literature search yielded a total of [insert number] studies meeting the inclusion criteria. The included studies encompassed a range of pharmacotherapeutic interventions for obesity in adults with chronic kidney disease (CKD). The characteristics of these studies, including study design, participant demographics, and intervention details, are summarized. Efficacy of anti-obesity pharmacotherapy in CKD the results of the included studies demonstrated varying degrees of effectiveness in achieving weight reduction among CKD patients. Notably [7], studies assessing the impact of orlistat reported significant reductions in body weight compared to placebo, with improvements in metabolic parameters. Similarly, liraglutide and phentermine-topiramate interventions showed promising outcomes in promoting weight loss, though the magnitude of effects varied across studies. Cardiovascular and renal outcomes beyond weight reduction, the review examined the influence of anti-obesity pharmacotherapy on cardiovascular and renal outcomes in adults with CKD. While some studies suggested potential cardiovascular benefits associated with weight loss, the impact on renal function exhibited variability. Certain pharmacological agents demonstrated a favorable effect on renal parameters, while others raised concerns about potential nephrotoxicity. Adverse events and safety profiles [8]. An essential aspect of evaluating anti-obesity pharmacotherapy is the assessment of safety profiles. Adverse events were reported across the included studies, ranging from gastrointestinal symptoms to cardiovascular events. The review highlights the need for careful consideration of potential risks, especially in the context of CKD, where patients may be more susceptible to certain side effects.

Quality of evidence and limitations the methodological quality of the

included studies was assessed, revealing variations in study design and potential biases [9]. The heterogeneity in CKD stages, sample sizes, and outcome measures posed challenges in synthesizing results. Moreover, the limited number of high-quality randomized controlled trials emphasizes the need for further well-designed studies to strengthen the evidence base. Individualized treatment approaches the discussion emphasizes the importance of individualized treatment approaches in the management of obesity in CKD patients. Considering the complex interplay between obesity and CKD, tailoring interventions based on the patient's specific clinical characteristics and comorbidities is crucial for optimizing outcomes. Future directions and research implications the review underscores the gaps in current knowledge and highlights avenues for future research. Long-term safety data, the impact of different pharmacotherapeutic agents on specific CKD stages, and the integration of anti-obesity interventions into comprehensive CKD care plans are areas that warrant further investigation. In conclusion, the results and discussion provide a comprehensive overview of the current evidence on anti-obesity pharmacotherapy in adults with chronic kidney disease [10]. The nuanced findings emphasize the need for a cautious and individualized approach in the management of obesity in this population, with a call for further high-quality research to guide clinical practice.

Conclusion

In conclusion, the review of anti-obesity pharmacotherapy in adults with chronic kidney disease (CKD) illuminates a complex landscape marked by promising outcomes, notable variations, and significant gaps in knowledge. The findings collectively underscore the following key points efficacy in weight reduction the reviewed studies suggest that certain anti-obesity pharmacotherapies, such as orlistat, liraglutide, and phentermine-topiramate, demonstrate efficacy in promoting weight reduction among adults with CKD. However, the magnitude of weight loss and metabolic improvements may vary across interventions. Cardiovascular and renal considerations while some studies indicate potential cardiovascular benefits associated with weight loss, the impact on renal outcomes exhibits variability. It is essential to carefully weigh the cardiovascular and renal effects of specific pharmacological agents, considering the unique challenges posed by CKD. Adverse events and safety profiles the review highlights the importance of assessing the safety profiles of anti-obesity medications, especially in the context of CKD. Adverse events, ranging from gastrointestinal symptoms to cardiovascular events, were reported. This underscores the need for vigilant monitoring and individualized risk-benefit assessments.

Quality of and research gaps the evidence methodological quality of the included studies varied, and the evidence base is limited by the heterogeneity in study designs, small sample sizes, and the absence of long-term safety data. Future research should focus on well-designed randomized controlled trials with larger sample sizes to strengthen the evidence base and provide more definitive conclusions. Individualized treatment approaches given the complexity of the relationship between obesity and CKD, the review emphasizes the necessity of individualized treatment approaches. Tailoring interventions based on the patient's specific CKD stage, comorbidities, and overall health status is crucial for optimizing outcomes and minimizing potential risks. Implications for clinical practice while the review provides insights into the current state of anti-obesity pharmacotherapy in CKD, its implications for clinical practice should be approached with caution. Clinicians should consider the available evidence, weigh the risks and benefits, and engage in shared decision-making with patients. Future directions the conclusion calls for future research to address the identified

gaps, including the need for long-term safety data, exploration of the impact of different anti-obesity agents on specific CKD stages, and the integration of pharmacotherapeutic interventions into comprehensive CKD care plans. In summary, anti-obesity pharmacotherapy in adults with chronic kidney disease presents both opportunities and challenges. The findings of this review provide a foundation for future research and underscore the importance of a nuanced, patient-centered approach in addressing the dual burden of obesity and CKD.

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Conflict of Interest

None

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