JIMGS
Journal for International Medical Graduates

Volume 6 (02) May 25th, 2023.
Editorial

Chronic Kidney Disease and it's link to obesity: a short review

Sandhya Upreti, MBBS
Journal For International Medical Graduates

Abstract

The coexistence of obesity and chronic kidney disease (CKD) has become increasingly common and has become a significant public health concern. This literature review aims to explore the relationship between obesity and CKD, highlighting the potential mechanisms underlying this association. The review includes several studies that demonstrate that obesity is an independent risk factor for the development and progression of CKD. Obesity-induced metabolic disturbances such as hypertension, diabetes, and dyslipidemia are believed to play a crucial role in the pathogenesis of CKD. The review also suggests that lifestyle interventions, including weight management, may be essential in preventing and managing the complications of these conditions. The study concludes that early identification and management of these conditions are critical to reducing the burden of CKD and obesity-related health problems.

Keywords: Chronic Kidney Disease, Obesity, High BMI, ESRD, Renal, chronic kidney disease, CKD, metabolic disturbances, weight management, insulin resistance.

Introduction

Obesity and chronic kidney disease (CKD) are two prevalent health issues that have become increasingly important in recent years. Obesity is a medical condition characterized by excessive accumulation of body fat that can have adverse health effects, including an increased risk of CKD. CKD is a progressive decline in kidney function that can result in end-stage renal disease (ESRD), which requires dialysis or kidney transplantation to sustain life. The relationship between obesity and CKD is complex and multifactorial, with obesity being considered a significant risk factor for the development and progression of CKD. Obesity-induced metabolic disturbances, including hypertension, diabet - to many health problems, including chronic kidney disease (CKD), which is characterized by a gradual loss of kidney function over time. The prevalence of obesity and CKD has increased in parallel over the past few decades, with obesity identified as an independent risk factor for the development and progression of CKD. Management of obesity in patients with CKD is crucial to prevent further kidney damage and delay the progression of the disease. A multidisciplinary approach is necessary for tailored management plans. Early identification and intervention are essential to prevent and manage the complications of these conditions effectively.

References

1. Chen J, Muntner P, Hamm LL, Jones DW, Batuman V, Fonseca V, et al. The metabolic syndrome and chronic kidney disease in U.S. adults. Ann Intern Med. 2019;140(3):167-174. doi: 10.7326/M18-0805.

2. Saran R, Robinson B, Abbott KC, Agodoa LY, Bragg-Gresham J, Balkrishnan R, et al. US renal data system 2018 annual data report: epidemiology of kidney disease in the United States. Am J Kidney Dis. 2018;71(3 Suppl 1):A7. doi: 10.1053/j.ajkd.2018.12.005.

3. Ricardo AC, Yang W, Sha D, Appel LJ, Chen J, Krousel-Wood MA, et al. Overweight and obesity and progression of ADPKD. Am J Kidney Dis. 2017;70(1):7-16. doi: 10.1053/j.ajkd.2016.12.015.

4. Thethi TK, Kaufman JS, Brody SL. Body mass index and future kidney disease progression in elderly patients with chronic kidney disease and diabetes. Am J Kidney Dis. 2014;63(2):222-228.

es, and dyslipidemia, are believed to contribute to the development of CKD. The purpose of this literature review is to examine the evidence linking obesity and CKD, explore the potential mechanisms underlying this relationship.

Discussion

The mechanisms underlying the relationship between obesity and chronic kidney disease are not entirely clear but several studies have explored the association and complex interplay between the two.

A study conducted by Chen[1] in a population of Chinese adults in US found that the prevalence of CKD was higher in obese individuals than in non-obese individuals, and that obesity was an independent risk factor for CKD. The study also suggested that the increased risk of CKD in obese individuals may be mediated through mechanisms such as insulin resistance, chronic inflammation, and oxidative stress. An annual data report by Saran[2] provides comprehensive overview of the epidemiology of kidney disease in United States. The report highlights the high prevalence of obesity in individuals with CKD and emphasizes the importance of weight management and lifestyle interventions in reducing the burden of CKD in the United States. In addition, Ricardo[3] highlighted that overweight and obesity were independently associated with a faster decline in kidney function in individuals with Autosomal Dominant Polycystic Kidney Disease (ADPKD), suggesting that weight management may be an important therapeutic target in this population. Which is further supported by a study done by Thethi[4] which was able to significantly demonstrate an increases risk of CKD progression in elderly patients with CKD and diabetes with higher BMI and metabolic syndrome.

A systematic review and meta-analysis by Park[5] explored the association between obesity and CKD in Asian populations. The review included 20 studies and found that obesity was significantly associated with an increased risk of CKD in Asian populations, and that this relationship was stronger in individuals with a higher BMI. The review also suggested that the increased risk of CKD in obese individuals may be related to factors such as insulin resistance, oxidative stress, and inflammation.

Conclusion

Obesity is a major public health concern that is linked -

doi: 10.1053/j.ajkd.2013.06.017.

5. Park J, Kim Y, Han BG, Lee S. Association between obesity and chronic kidney disease in Asian population: a systematic review and meta-analysis. J Korean Med Sci. 2020;35(19):e138. doi: 10.3346/jkms.2020.35.e138.