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Global impact of obesity and diabetes on the increase incidence and prevalence of chronic kidney disease (CKD) and end stage renal disease (ESRD): A systematic review

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Objectives : Obesity and diabetes are the main causes of chronic kidney disease (CKD) and end stage renal disease (ESRD). The objective of this study was to analyze the impact of obesity and diabetes on CKD and ESRD incidence and prevalence.
Methods : A comprehensive literature search was conducted from 2001 to 2018. 494 articles were retrieved via PubMed and 125 articles through Google scholar and reference list of the selected articles. Among which thirty (30) studies met our inclusion criteria consisting of 17 cohorts, 11 cross-sectional, and 2 case-control studies.
Results : Majority of the studies indicated direct relationship between body mass index (BMI) and ESRD risk. Notably, the association of obesity and diabetes potentially increases the incidence and prevalence of CKD and ESRD. Results from the cohort, case-control and cross-sectional studies pointed out a positive association between obesity, diabetes and risks for renal disease outcomes. Even though many complications may occur, renal transplantation (RT) is still the preferred renal replacement therapy (RRT) advised in multiple studies for diabetic ESRD patients. Renal transplantation was associated with better quality of life and survival advantage than dialysis. Interestingly, overweight and obese ESRD patients on dialysis had a significant survival advantage in comparison to lean body weight patients.
Conclusions : Taken together, obesity and diabetes are significantly associated with the increasing incidence and prevalence of CKD and ESRD. Regulation of Weight and diabetes are highly recommended in obese and diabetic patients to prevent the subsequent renal disease. Previous reviews have discussed the relationship between obesity and ESRD or diabetes and ESRD separately. However, importantly, this review gives an insight on the association between obesity, diabetes and CKD/ ESRD.