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Serum and Urine Biomarker Studies in CKD

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Chronic kidney disease (CKD) is a growing global health problem affecting millions of people worldwide. Serum and urine biomarker studies are becoming increasingly important in the diagnosis, management, and prognosis of CKD. These biomarkers can provide valuable information about the underlying pathophysiology of the disease and the efficacy of various interventions. This review focuses on the KNOW-CKD study in Korean patients with chronic kidney disease, and analyzes serum and urine biomarkers of CKD to identify early stages of the disease, predict disease progression, and evaluate response to treatment. The KoreaN Cohort Study for Outcome in Patients With Chronic Kidney Disease (KNOW-CKD) is an ongoing large cohort study to advance our understanding of CKD and its related complications. One of the main focuses of this study is the identification and validation of serum and urine biomarkers for the diagnosis, monitoring and management of CKD. In the past few years, several promising biomarkers have been identified in KNOW-CKD studies, including adiponectin, hepcidin, klotho, fibroblast growth factor 23 (FGF23), osteoprotegerin, variable serum markers such as cystatin C, Troponin-T, HDL, and uric acid and variable urine markers. These biomarkers show strong associations with CKD progression, cardiovascular events and mortality, which could be useful for risk stratification and treatment decision-making in patients with CKD. The KNOW-CKD study has also contributed to understanding the limitations and challenges of using biomarkers in CKD, such as the need for standardized analysis and the potential confounding effects of co-morbidity. Overall, the biomarker data generated from the KNOW-CKD study have important implications for the clinical management of CKD, and continued research in this area is critical to improving patient outcomes.