



Congress Abstract

# The Role of Regular Laboratory Monitoring in Detecting and Preventing the Progression of Chronic Kidney Disease

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Proceedings of Central Asian Congress  
of Nephrologists with International  
Participation, October 9-10, Aktau,  
Kazakhstan

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Publishing Group LLP (Astana,  
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## ABSTRACT

**Background:** The early onset of chronic kidney disease often lacks symptoms, leading to delayed diagnosis and treatment. Regular laboratory testing can detect the disease before it begins, which helps clinicians determine the appropriate treatment for patients. This review sought to assess how ongoing tracking of estimated glomerular filtration rate (eGFR) and urine albumin-to-creatinine ratio (UACR) contributes to understanding the progression of chronic kidney disease (CKD) and determining the risk levels for patients.

**Methods:** A thorough review of evidence from international clinical practice guidelines, systematic reviews, meta-analyses, and extensive observational cohort studies was conducted. Special attention was given to how eGFR and UACR changed over time and how these changes were linked to the development of advanced CKD, kidney failure, cardiovascular issues, and death. The most recent recommendations from the 2024 KDIGO CKD guideline were included.

**Results:** Evidence shows that regularly checking eGFR and UACR is essential for effectively monitoring chronic kidney disease. In a group of 91,319 people, a reduction of 30% or more in estimated glomerular filtration rate (eGFR) was linked to a significantly higher risk of developing advanced chronic kidney disease, with a hazard ratio of 7.53 (95% CI, 6.70–8.45). Similarly, an increase of 30% or more in urinary albumin-to-creatinine ratio (UACR) was associated with a hazard ratio of 1.78 (95% CI, 1.59–1.98). At the same time, when both UACR increased and eGFR decreased, the hazard ratio was 15.15 (95% CI, 12.43–18.46) compared to when these values remained stable. KDIGO suggests that patients with chronic kidney disease should have their glomerular filtration rate and albuminuria checked at least once every year. For those at greater risk, more regular check-ups are advised, especially if the results could impact treatment choices. Even though these recommendations were provided, a systematic review of 59 studies that included 3,036,41 patients showed significant shortcomings in standard monitoring practices: the estimated glomerular filtration rate (eGFR) was checked in 81.3% of patients, but testing for albuminuria was done in just 47.4%.

**Conclusion:** Regular laboratory testing, especially repeated checks of eGFR and UACR, is important for early identification of CKD progression and for assessing individual risk levels. The continued limited use of albuminuria testing highlights a significant gap in care that aligns with established guidelines. Integrating structured laboratory surveillance into routine clinical practice may facilitate timely therapeutic optimization and contribute to delaying kidney failure and reducing cardiorenal complications.

**Keywords:** Chronic Kidney Disease; eGFR; UACR; Disease Progression; Risk Assessment; KDIGO

