PRESS RELEASE

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EMBARGOED FOR RELEASE UNTIL OCTOBER 25, 2024 AT 4:30 PM PDT

Researchers Integrate Multiple Protein Markers to Predict Health Outcomes in Individuals with Chronic Kidney Disease

Highlights

- Scientists have found that integrating multiple protein markers of kidney health can indicate the likelihood of chronic kidney disease progression and death in patients.
- Results from the study will be presented at ASN Kidney Week 2024 October 23–27.

San Diego, CA (October 25, 2024) — Prior efforts to identify novel kidney biomarkers as risk factors for chronic kidney disease (CKD) progression have typically evaluated proteins individually, which limits their prognostic power. The National Institute of Diabetes and Digestive and Kidney Diseases' (NIDDK's) CKD Biomarkers Consortium of investigators recently developed and tested novel dimensions of kidney health by combining a set of 17 urine and plasma biomarkers that had been individually associated with CKD progression. The research will be presented at ASN Kidney Week 2024 October 23– 27.

The team tested these biomarkers in stored samples taken from 1,256 participants across two cohorts—the NIDDK Chronic Renal Insufficiency Cohort (CRIC), and REasons for Geographic And Racial Differences in Stroke (REGARDS) study—who had diabetes and CKD (defined as an estimated glomerular filtration rate < 60 ml/min/1.73m^2). Three health dimensions comprising 10 biomarkers were derived: *systemic inflammation and filtration* (plasma TNFR-1, TNFR-2, suPAR, SDMA), *tubular function* (urine EGF, ADMA, SDMA), and *tubular damage* (urine α1m, KIM-1, MCP-1).

Each of these health dimensions was associated with CKD progression or mortality, independent of clinical risk factors and other measures of kidney function. Notably, higher tubular damage and lower tubular function scores were associated with higher risk of CKD progression in only one study, while higher systemic inflammation and kidney filtration scores were associated with a higher mortality risk in both studies.

"These findings suggest that a multi-biomarker approach could help clarify the wide variation in CKD progression trajectories among persons with diabetes by simultaneously capturing information on glomerular and tubulointerstitial compartments of the kidney,"

said corresponding author Vanessa-Giselle Peschard, MD, of UCSF. “Further research will be needed to determine whether these kidney health dimensions could offer prognostic value for individual patients or could be used to monitor the response to medications that impact kidney health.”

Study: “Defining Kidney Health Dimensions and their Associations with Adverse Outcomes in Persons with Diabetes and Chronic Kidney Disease”

Join ASN and approximately 12,000 other kidney professionals from across the globe at Kidney Week 2024 in San Diego, CA. The world's premier nephrology meeting, Kidney Week, provides participants with exciting and challenging opportunities to exchange knowledge, learn the latest scientific and medical advances, and listen to engaging and provocative discussions with leading experts in the field. Early programs begin on October 23, followed by the Annual Meeting from October 24-27. Follow the conversation at #KidneyWk.

About ASN

Since 1966, ASN has been leading the fight to prevent, treat, and cure kidney diseases throughout the world by educating health professionals and scientists, advancing research and innovation, communicating new knowledge and advocating for the highest quality care for patients. ASN has nearly 21,000 members representing 140 countries. For more information, visit www.asn-online.org and follow us on Facebook, [X](X), LinkedIn, and Instagram.

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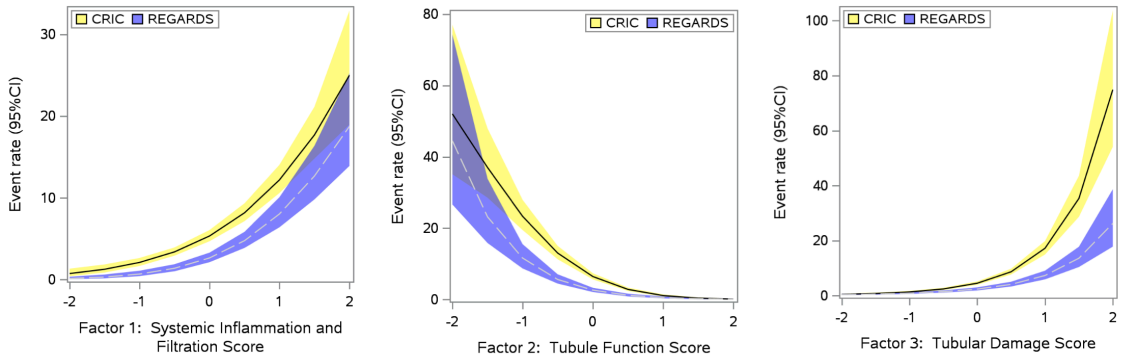
Figure 1: Rates of CKD progression and incident ESKD (per 100 person years) by factor score and by cohort, adjusted for urine creatinine.

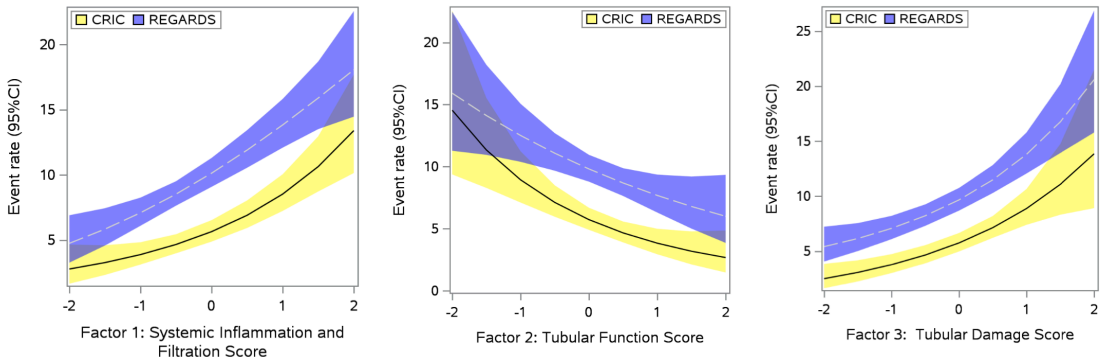
Smoothed estimates across the range of each factor score, covering ~95% of the distribution.



Factor 1 = weighted average of pTNFR-1, pTNFR-2, psuPAR, pSDMA
Factor 2 = weighted average of uEGF, uADMA, uSDMA
Factor 3 = weighted average of uα1m, uKIM-1, uMCP-1

Figure 2: Mortality rates (per 100 person years) by factor score and by cohort, adjusted for urine creatinine.

Smoothed estimates across the range of each factor score, covering ~95% of the distribution.



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