What can cystatin C test contribute to chronic kidney disease management?

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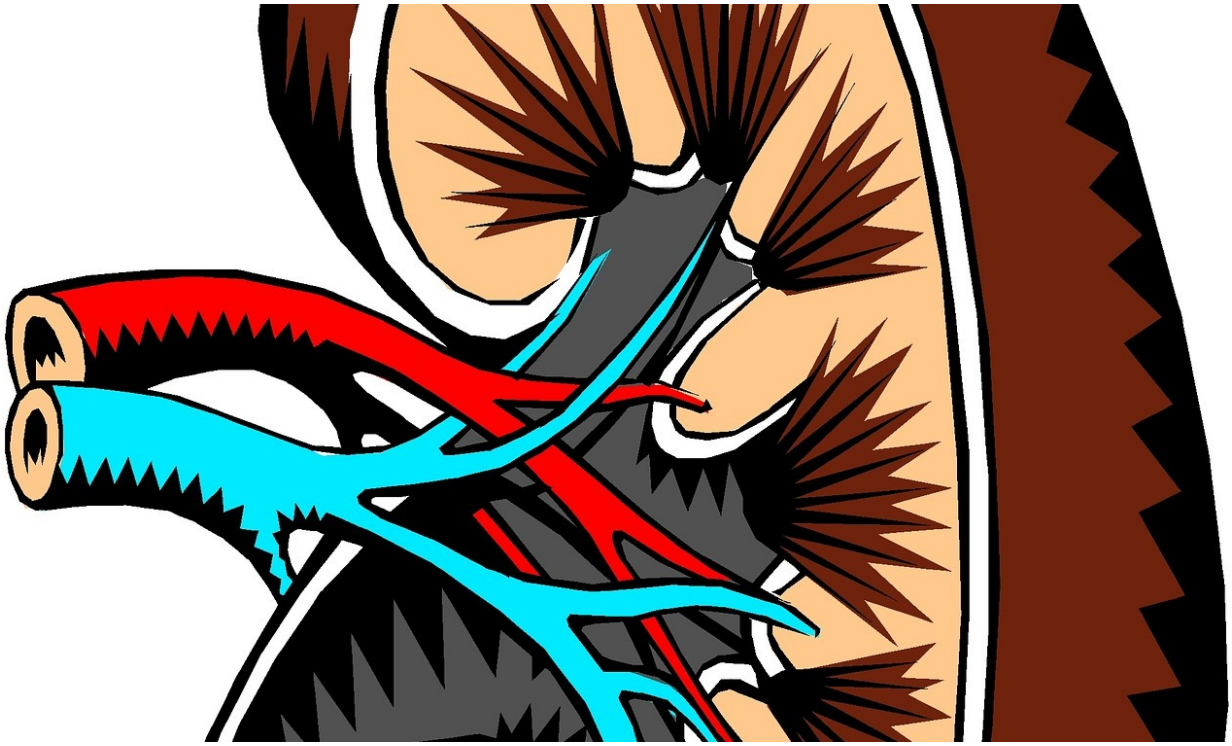

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The use of cystatin C along with creatinine to estimate the glomerular filtration rate (GFR) when diagnosing chronic kidney disease (CKD) in primary care patients would result in increased health care costs and no improvement in risk prediction, according to a new study published in *PLOS Medicine* by Adam Shardlow of the University of Nottingham, UK

and colleagues.

Estimation of GFR from creatinine may be inaccurate in some people, and potentially lead to the over-diagnosis of CKD, so international and national guideline have recently recommended confirming borderline cases of CKD with an estimation of GFR based on cystatin C. In the new study, researchers estimated GFR from serum creatinine and cystatin C in a cohort of 1741 adults diagnosed with CKD in primary care between 2008 and 2010. They compared the GFR calculated by each method both at baseline and over five years of follow-up.

The use of cystatin C to confirm a diagnosis of CKD resulted in 7.7% of people (50 of 653) being reclassified to not have CKD, but 59.0% of people (385 of 653) being reclassified to a lower eGFR, indicating more advanced CKD. In addition, change in eGFR based on cystatin C over five years identified more people as having CKD progression. However, use of cystatin C did not improve discrimination in risk prediction models, and increased the cost of monitoring by £23 per patient in the first year of implementation.

"In a primary care setting, the potential benefit of reducing over-diagnosis of CKD with [cystatin C] would be eliminated by the unintended consequence of greater reclassification to more advanced CKD, requiring more frequent monitoring and increased referrals to secondary care."

More information: Shardlow A, McIntyre NJ, Fraser SDS, Roderick P, Raftery J, Fluck RJ, et al. (2017) The clinical utility and cost impact of cystatin C measurement in the diagnosis and management of chronic kidney disease: A primary care cohort study. *PLoS Med* 14(10): e1002400. doi.org/10.1371/journal.pmed.1002400