Doubling of serum creatinine and the risk of cardiovascular outcomes in patients with chronic kidney disease and type 2 diabetes mellitus: a cohort study

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Doubling of serum creatinine is often used as a marker for worsening kidney function in nephrology trials. Most people with chronic kidney disease die of other causes before reaching end-stage renal disease. We were interested in the association between doubling of serum creatinine and the risk of a first-time diagnosis of angina pectoris, congestive heart failure (CHF), myocardial infarction (MI), stroke, or transient ischemic attack in patients with chronic kidney disease and with diagnosed type 2 diabetes mellitus.; We identified all adult patients registered in the ”Clinical Practice Research Datalink” between 2002 and 2011 with incident chronic kidney disease and type 2 diabetes mellitus and did a cohort study with a Cox proportional hazard analysis.; We identified in total 27,811 patients, 693 developed angina pectoris, 1,069 CHF, 508 MI, 970 stroke, and 578 transient ischemic attacks. Patients whose serum creatinine doubled during follow-up had increased risks of CHF (hazard ratio [HR] 2.98, 95% confidence interval [CI] 2.27-3.89), MI (HR 2.53, 95% CI 1.62-3.96), and stroke (HR 1.93, 95% CI 1.38-2.69), as compared with patients whose serum creatinine did not double. The relative risks of angina pectoris (HR 1.18, 95% CI 0.66-2.10) or a transient ischemic attack (HR 1.32, 95% CI 0.78-2.22) were similar in both groups.; Diabetic patients with a doubling of serum creatinine were at an increased risk of CHF, MI, or stroke, compared with diabetic patients whose serum creatinine did not double during follow-up.

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