Response to Mildly Decreased Glomerular Filtration Rate Is Associated With Poor Coronary Heart Disease Outcome

Kadi H, Ceyhan K, Sogut E, et al. *Clin Cardiol.* 2011; doi:10.1002/clc.20951

To the Editor:

Kadi et al¹ suggest that in patients with coronary heart disease (CHD), coronary collateral circulation was worse if mildly decreased glomerular filtration rate (GFR) was present. We support these findings.

In a post hoc analysis of the GREek Atorvastatin and Coronary-heart-disease Evaluation (GREACE) Study,² patients with impaired renal function untreated with a statin had a higher cardiovascular disease (CVD) event rate compared with those with an estimated GFR (eGFR) >90 mL/min/1.73 m². Out of 1600 CHD patients, 642 had stage 1 (>90 mL/min/1.73 m²), 864 stage 2 (60–89 mL/min/1.73 m²), and 94 stage 3 (30–59 mL/min/1.73 m²) renal function status, similarly distributed in the 2 treatment groups (structured vs usual care). In multivariate regression, for every 5% of decrease in eGFR vs baseline there was a 10% increase in CVD risk in statin-untreated patients, and with every 5% increase in eGFR there was a 16% reduction in CVD risk in statin-treated patients.² If we evaluate patients with stage 2 renal function (n = 864) at baseline, those not treated with a statin had an increased CVD risk (any vascular event at 3 years follow-up) vs treated, after adjusting for 10 covariates including low density lipoprotein cholesterol (hazard ratio [HR]: 1.15, 95% confidence interval [CI]: 1.09–1.19), compared with stage 1 patients (HR: 1.08, 95% CI: 1.01–1.16), but a lower risk compared with stage 3 untreated patients (HR: 1.24, 95% CI: 1.17–1.32).

Similar relationships were observed in primary prevention patients with metabolic syndrome participating in the Assessing The Treatment Effect in Metabolic Syndrome Without Perceptible diabeTes (ATTEMPT) study.³ CVD risk increases as renal function declines even with mildly decreased GFR. These observations justify the characterization in recent guidelines of renal impairment as a high-risk category.⁴

Vasilios G. Athyros, MD, PhD, Assistant Professor
Asterios Karagiannis, MD, PhD, Professor
Second Propedeutic Department of Internal Medicine
Medical School, Aristotle University of Thessaloniki
Hippocraton Hospital, Thessaloniki, Greece

Niki Katsiki, MD, MSc, FRSPH
Dimitri P Mikhailidis, BSc, MSc, MD, FRSPH, FCP
FFPM, FRCP, FRCPATH
Academic Head of Department of Clinical Biochemistry
(Vascular Disease Prevention Clinics), Royal Free Hospital
Campus, University College London Medical School
University College London, London, United Kingdom

References

1. Kadi H, Ceyhan K, Sogut E, et al. Mildly decreased glomerular filtration rate is associated with poor coronary collateral circulation in patients with coronary artery disease. *Clin Cardiol.* 2011;34:617–621.
2. Athyros VG, Mikhailidis DP, Papageorgiou AA, et al. The effect of statins versus untreated dyslipidaemia on renal function in patients with coronary heart disease. A subgroup analysis of the Greek atorvastatin and coronary heart disease evaluation (GREACE) study. *J Clin Pathol.* 2004;57:728–734.
3. Athyros VG, Elisaf M, Alexandrides T, et al; ATTEMPT Collaborative Group. Long-term impact of multifactorial treatment on new-onset diabetes and related cardiovascular events in metabolic syndrome. A post hoc ATTEMPT analysis. *Angiology.* 2011; doi: 10.1177/0003319711421341.
4. Reiner Z, Catapano AL, De Backer G, et al. ESC/EAS Guidelines for the management of dyslipidaemias: The Task Force for the management of dyslipidaemias of the European Society of Cardiology (ESC) and the European Atherosclerosis Society (EAS). *Eur Heart J.* 2011;32:1769–1818.

Published online in Wiley Online Library (wileyonlinelibrary.com)
DOI:10.1002/clc.21002 © 2012 Wiley Periodicals, Inc.