Response

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Lack of Association between Serum Cystatin C Levels and Coronary Artery Disease in Diabetic Patients (*Korean Diabetes J* 2010;34:95-100)

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We would like to express our appreciation to Dr. Won for his letter regarding our manuscript, "Lack of association between serum cystatin C level and coronary artery disease in diabetic patients."

Cystatin C is a low molecular mass protein that is passed freely through the glomerular membrane. Unlike creatinine, cystatin C is eliminated from circulation almost exclusively by the kidney and is affected less by renal tubular secretion, theoretically making it an ideal marker of glomerular filtration rate. A recent meta-analysis suggested serum cystatin C level as a better indicator of kidney function than serum creatinine level [1]. Cystatin C is produced by all nucleated cells, and its level is independent of body composition, in contrast to creatinine, which is produced almost exclusively by skeletal muscles [2,3].

It has been reported that serum cystatin C level is a strong predictor of mortality and cardiovascular events in elderly patients with chronic renal disease or coronary artery disease (CAD) [4,5]. In addition, Maahs et al. [6] reported a statistically important relationship between serum cystatin C level and CAD in type 1 diabetic patients. In contrast, we found no association between serum cystatin C level and CAD in type 2 diabetic patients [7]. Serum cystatin C level was significantly higher in patients with diabetic nephropathy, both in CAD patients and in non-CAD patients. On the other hand, there was no significant difference in serum cystatin C level between CAD and non-CAD patients, regardless of the presence of diabetic nephropathy. The cause of this discrepancy between studies is not clear, but several other studies have reported similar results to those of our study. Serum cystatin C has been used to predict chronic renal disease, but not CAD [8]. In a study of middle-aged subjects, carotid atherosclerosis was found to be associated with microalbuminuria but not with serum cystatin C level [9]. In addition, a recent study by Maahs et al. [10] also reported that, in persons without diabetes mellitus and having relatively normal renal function, increased cystatin C was associated with decreased, rather than increased, CAD progression.

In conclusion, we believe that serum cystatin C level is a useful marker for the assessment of renal function but is not a marker for CAD. However, our study is limited because it was a retrospective case-control study, the study sample was relatively small, and we did not evaluate the associations among cystatin C level and other markers of inflammation or BMI. Further prospective studies with larger sample sizes are needed to evaluate the relationship between serum cystatin C and cardiovascular disease.

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