CORRESPONDENCE

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IF FAT IS GOOD, MUSCLE IS BETTER

To the Editor:

In the recent study of Kalantar-Zadeh et al,[1] intercurrent illnesses that might have resulted in weight loss were not tracked as time-dependent events. Hence, those who gained or maintained weight might have been free of intercurrent illnesses compared with those who lost weight. Thus, the survival advantage associated with weight gain might be a mere reflection of underlying "healthiness."

Furthermore, abdominal adiposity has shown associations with inflammation[2] and atherosclerosis[3] in hemodialysis patients, as in the general population. If that is the case, where is the "reverse epidemiology" of the associations of adiposity with cardiovascular disease and how does adiposity confer a survival advantage?

Last, that Kalantar-Zadeh et al[1] chose to describe our previous study[4] as flawed does not make it so. We responded to their earlier criticisms[5] elsewhere.[6] Their implication that our study results were not reproduced by Johansen et al[7] also is not accurate.[8] Johansen et al[7] examined whether body size and muscle mass have independent effects on survival. We examined whether body composition influences outcomes of dialysis patients with high body mass indices. If the questions are different, the answers are bound to be different.[8] Our much maligned study[4] showed that the best survival is associated with patients with high body mass index and high muscle mass. In other words, if fat is good, muscle is better. Our goal should be to promote muscle mass, rather than fat mass, in dialysis patients.

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REFERENCES

1. Kalantar-Zadeh K, Kopple JD, Kilpatrick RD, et al: Association of morbid obesity and weight change over time with cardiovascular survival in hemodialysis population. Am J Kidney Dis 46:489-500, 2005

2. Axelsson J, Qureshi RA, Suliman ME, et al: Truncal fat mass as a contributor to inflammation in end-stage renal disease. Am J Clin Nutr 80:1222-1229, 2004

3. Yamauchi T, Kuno T, Takada H, et al: The impact of visceral fat on multiple risk factors and carotid atherosclerosis in chronic haemodialysis patients. Nephrol Dial Transplant 18:1842-1847, 2003

4. Beddhu S, Pappas LM, Ramkumar N, et al: Effects of body size and body composition on survival in hemodialysis patients. J Am Soc Nephrol 14:2366-2372, 2003

5. Kalantar-Zadeh K, Abbott KC, Salahudeen AK, et al: Survival advantages of obesity in dialysis patients. Am J Clin Nutr 81:543-554, 2005

6. Beddhu S, Ramkumar N, Samore MH: The paradox of the 'BMI paradox': Associations of adiposity with inflammation in dialysis patients. Am J Clin Nutr 82:909-910, 2005

7. Johansen KL, Young B, Kaysen GA, et al: Association of body size with outcomes among patients beginning dialysis. Am J Clin Nutr 80:324-332, 2004

8. Beddhu S, Pappas LM, Ramkumar N, et al: Body mass index and survival in incident dialysis patients: The answer depends on the question. Am J Clin Nutr 81:534-536, 2005

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In Reply:

We appreciate Dr Beddhu's comments. As indicated in our article,[1] unknown comorbid conditions might have contributed to the high death risk for underweight maintenance hemodialysis patients, especially those who lost weight during this study. However, we consider it unlikely that massively obese patients (eg, body mass index > 40 kg/m^2) had less catabolic illness causing weight loss than slightly less obese patients (body mass index, 30 to 40 kg/m^2).

Abdominal adiposity[2] takes *several years to decades* to kill. Two thirds of maintenance hemodialysis patients are dead within 5 years. Hence, it is unlikely that correction of abdominal obesity or other conditions related to overnutrition improve this extremely high "short-term" death risk in maintenance hemodialysis patients.[3] The seemingly protective effect of obesity might be caused by elaboration of adiponectin and/or other not-yet-identified vascular-protective cytokines.

The use of urinary creatinine excretion to estimate muscle mass by Beddhu et al[4] may be erroneous. In addition to endogenous muscle mass, both dietary protein intake, especially meats, and level of renal function affect urinary creatinine excretion.[5] In the Modification of Diet in Renal Disease Study,[6] urinary creatinine level correlated significantly with dietary protein intake ($r = +0.38$; $P < 0.01$) and severity of renal insufficiency, but did not covary closely with measures of muscle mass.[6] The Modification of Diet in Renal Disease Study also reported greater urinary creatinine levels in African Americans, who have better survival on dialysis therapy.[6] Hence, the use of urinary creatinine level as a surrogate of muscle mass in patients with severe renal

insufficiency[4] may be misleading because high urinary creatinine levels may predict better survival because of their association with greater dietary protein intake[7] or other factors unrelated to muscle mass.

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REFERENCES

1. Kalantar-Zadeh K, Kopple JD, Kilpatrick RD, et al: Association of morbid obesity and weight change over time with cardiovascular survival in hemodialysis population. Am J Kidney Dis 46:489-500, 2005
2. Rexrode KM, Carey VJ, Hennekens CH, et al: Abdominal adiposity and coronary heart disease in women. JAMA 280:1843-1848, 1998
3. Kalantar-Zadeh K, Abbott KC, Kronenberg F, Anker SD, Horwich TB, Fonarow GC: Epidemiology of dialysis patients and heart failure patients. Semin Nephrol (in press)
4. Beddhu S, Pappas LM, Ramkumar N, Samore M: Effects of body size and body composition on survival in hemodialysis patients. J Am Soc Nephrol 14:2366-2372, 2003
5. Walser M: Creatinine excretion as a measure of protein nutrition in adults of varying age. JPEN J Parenter Enteral Nutr 11:S73-S78, 1987 (suppl 5)
6. Kopple JD, Greene T, Chumlea WC, et al: Relationship between nutritional status and the glomerular filtration rate: Results from the MDRD Study. Kidney Int 57:1688-1703, 2000
7. Shinaberger CS, Kilpatrick RD, McAllister CJ, Kopple JD, Kalantar-Zadeh K: Association between changes in urea kinetic based protein intake over time and mortality in hemodialysis patients. Am J Kidney Dis 45:33A, 2005 (abstr)

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USE OF AMINO-TERMINAL PRO-B–TYPE NATRIURETIC PEPTIDE TO PREDICT CORONARY DISEASE

To the Editor:

deFilippi et al[1] presented data for amino-terminal pro-B–type natriuretic peptide (NT-proBNP) in a chronic kidney disease cohort essentially similar to our own.[2] They used receiver operating characteristic curve analysis to assess the ability of NT-proBNP to predict the presence of prior coronary artery disease (CAD) and obtained an area under the curve (AUC) of 0.69. We assessed the ability of natriuretic peptides to predict CAD in our cohort. AUCs of 0.603 ($P = 0.0052$) and 0.661 ($P < 0.001$) were achieved for NT-proBNP and BNP, respectively: both significant and not dissimilar to values obtained by deFilippi et al[1] (Fig 1).

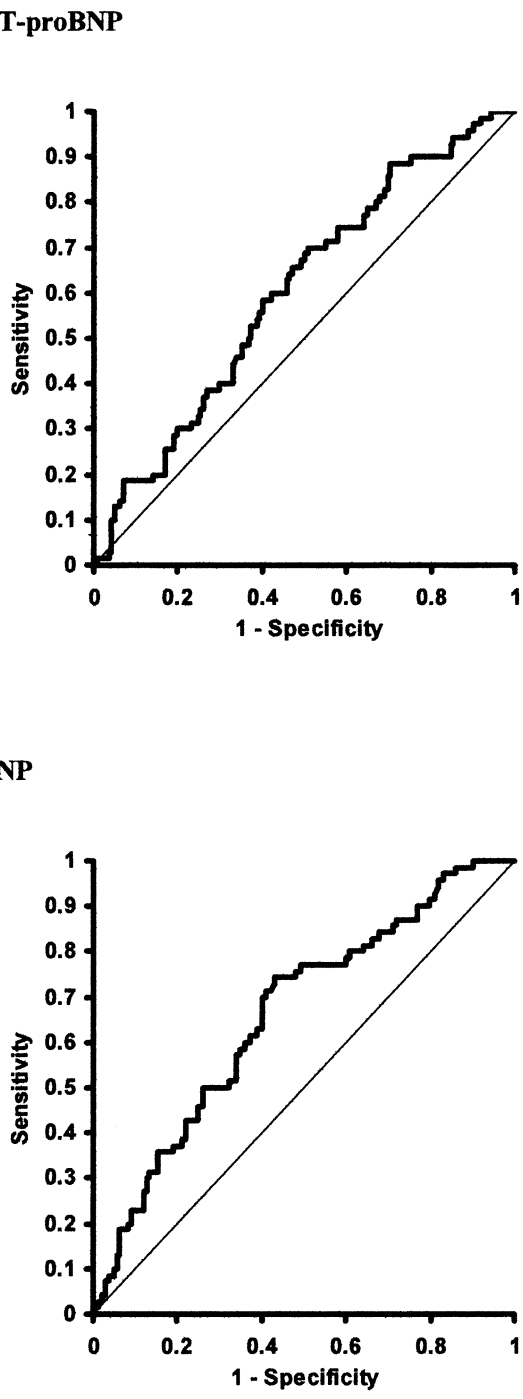

Fig 1. Receiver operating characteristic curve analysis shows the ability of natriuretic peptides to predict the presence of CAD in patients with chronic kidney disease.