Low Body Fat Tied to High Mortality in Dialysis

BY DOUG BRUNK

SAN DIEGO — A low percentage of total body fat is associated with higher 5-year mortality in hemodialysis patients, even after adjustment for demographics, comorbid conditions, and other surrogates of nutritional status, results from a large study showed.

"Hemodialysis patients do exhibit an obesity paradox," Debbie Benner said during a press briefing at the annual meeting of the American Society of Nephrology.

"Low body mass index is associated with greater mortality, whereas higher BMI appears to be protective," Ms. Benner said.

In a study led by Dr. Kamyar Kalantar-Zadeh of the Los Angeles Biomedical Research Institute at Harbor-UCLA Medical Center, researchers used near-infrared interactance technology to measure body fat percentage in the upper arm of 671 hemodialysis patients from eight centers in California operated by DaVita Inc., and investigated their survival between 2001 and 2006.

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Ms. Benner, a registered dietitian who serves as vice president of clinical support for DaVita, a nationwide provider of dialysis services, described near-infrared interactance as a "noninvasive, simple, and rapid method of assessing percent body fat based on light absorption and reflection using near-infrared light emission."

The study was conducted because protein energy wasting "is a common problem in chronic kidney disease patients and is associated with a reduction in muscle and body fat stores. Measuring body composition including total body fat in dialysis patients may provide important information about nutritional status and outcomes in dialysis patients," she said.

The mean age of patients was 54 years: 52% were men, 30% were African American, 54% were diabetic, and their mean total body fat percentage was 27%.

The researchers divided the patients into five groups based on body fat percentage: less than 10% (34 patients); 10% to less than 20% (156 patients); 20% to less than 30% (210 patients), 30% to less than 40% (182 patients), and 40% or higher (89 patients).

Using patients with 20%-30% body fat as the referent group, Ms. Benner and her associates performed a survival analysis adjusted for age, gender, presence of diabetes, Charlson index score, and race.

They also controlled these associations for the surrogates of the malnutrition-inflammation complex syndrome (MICS), including serum albumin, hemoglobin, normalized protein catabolic rate, phosphorus, total iron-binding capacity, ferritin, calcium, and creatinine.

The association between body fat and mortality was then assessed.

Case-mix analysis revealed that dialysis patients with less than 10% body fat were 2.54 times more likely to die than those in the referent group, while the MICS analysis revealed a 2.96-fold increased risk of death.

Analysis of the other groups confirmed a direct relationship between body fat and mortality risk. "When the body fat percentage increased, the mortality risk declined, and vice versa," Ms. Benner said.

She acknowledged certain limitations of the study, including the potential for selection bias "and the fact that other measures of nutritional status were not tested." ■

Disclosures: *The study was funded by the National Institutes of Health and by DaVita. Ms. Benner disclosed no other conflicts other than her employment with DaVita.*