

Kidney News

June 2014 | Vol. 6, Number 6

Muscle and Fitness Levels Linked to Dialysis Patients' Quality of Life

tients with a higher body mass index (BMI) have greater survival times than those with a lower BMI, according to a new study. The longer survival of heavier patients has long confused researchers because obese dialysis patients generally have lower levels of physical function, and better physical function is also associated with better survival as well as better quality of life.

A new study in the *Clinical Journal of the American Society of Nephrology* used MRIs and other measures to better define body composition to tease out the relative effects of fat and muscle in these patients. Greater muscle mass was associated with better physical function among

patients with similar BMIs. The results highlight the limitations of relying on BMI alone and imply that patients could benefit from interventions to increase muscle mass.

The study involved 105 maintenance hemodialysis patients at the University of Utah and at Vanderbilt University Medical Center. BMI is an easy but crude measure of body composition that does not differentiate how much of a person's weight is due to fat compared to muscle. So in addition to the patients' BMI, the researchers measured their waist circumference. To get a better idea of each patient's personal make-up, they used MRI to gauge the mid-thigh muscle level and amount of intra-abdominal fat. They assessed physical function by testing how far the patients could walk in six minutes and quality of life through questionnaires about physical function and mental health status. The patients were tested at the start of the study, after six months,

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Higher levels of muscle mass contribute to higher quality of life for dialysis patients and could partially explain the "obesity paradox," in which dialysis pa-

Inside

Kidney disease biomarkers

Our special issue takes a close look at promising predictive biomarkers for kidney disease and the FDA's process for reviewing biomarkers. Also included: biomarkers in other systemic diseases such as cardiorenal syndrome and biomarkers and the clinical nephrologist

Policy Update

This year's Kidney Community Advocacy Day featured triple the number of participants and double the number of meetings compared with ASN's 2013 congressional advocacy day.

Journal View

Can urinary albumin concentration detect microalbuminuria in diabetic patients?

Last Call for ESRD Seamless Care Organizations Issued

By Mark Lukaszewski

The Centers for Medicare & Medicaid Services (CMS) has announced a new—and likely its last—request for applications (RFA) for the ESRD Seamless Care Organizations (ESCOs).

If the RFA does not yield the expected 10 to 15 unique ESCO participants, CMS said it will consider scrapping the program.

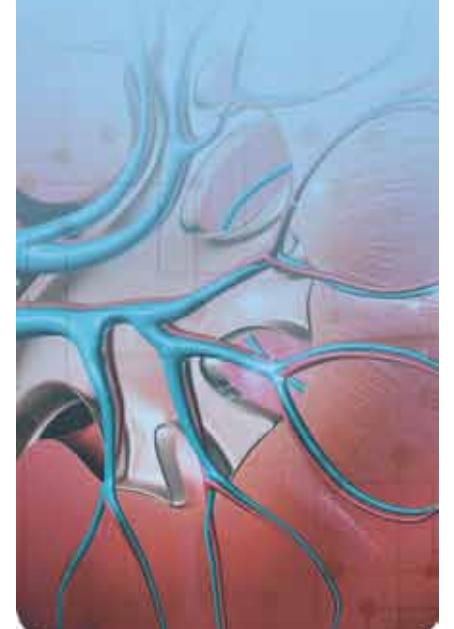
CMS emphasized that it reserves the right to terminate any model if it is not achieving the goals of the initiative. In its announcement, CMS stated that while it is "committed to improving care for beneficiaries with ESRD, the Agency reserves the right to decide not to move forward with the [Comprehensive ESRD Care] Model for any reason, as is true for all models."

Yet it is not all bad news for the future of the ESCO program. CMS has made vast improvements in this latest RFA, including changes to address rebasing concerns in years 4 and 5, and releasing proposed quality measures that would assess program participants' performance.

Searching for cost savings

To meet the ever-growing need for cost savings in the Medicare part D system, CMS developed the first-ever disease-specific accountable care organization (ACO) for dialysis providers. Designed

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Muscle and Fitness

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and after 12 months.

The patients with higher BMI, greater waist circumference, and more abdominal fat had poorer scores on the walking test as well as worse scores on the quality-of-life questionnaires. Underweight patients also performed worse than patients with a normal BMI, a detail that could also reflect the effects of muscle mass.

“Because survival rates are better among dialysis patients with higher BMI, some people have argued that obesity is good in dialysis patients. This study is showing that it’s much more nuanced than that,” said lead study author Srinivasan Beddhu, MD, of the University of Utah School of Medicine in Salt Lake City. “Higher fat mass is associated with worse physical function, and more muscle mass is associated with better physical function. So from the point of view of physical function and quality of life, obesity is not good for dialysis patients.”

Beddhu told *ASN Kidney News* that the relationship between mortality and BMI is

complicated, with somewhat higher BMIs having a survival advantage even in the general population. In the U-shaped association, it seems bad to have either too much or too little fat. In the dialysis population, the curve shifts, with even higher levels of BMI having lower death risks. A higher BMI also seems to confer a survival advantage in patients with other chronic conditions such as heart failure and lung disease. “But that does not mean that fat is better than muscle,” Beddhu said.

“This is a well-designed study where they have made careful measurements to try to separate out the influences of fat and muscle,” said Kirsten Johansen, MD, professor of medicine at the University of California, San Francisco, School of Medicine and director of dialysis at the San Francisco VA Medical Center, who was not involved in the study. Johansen said that the findings do not surprise her, but add important new data about the roles of fat and muscle.

“I’ve become convinced that, from a purely survival point of view, having a reserve of fat is good in case you get sick. But it isn’t good for physical function,” Johansen said. “I get nervous when people say patients who have higher body fat have better outcomes, so we should just

let them be like that. These patients have really low levels of physical functioning and physical activity, so something that is having a negative impact on that may be having an impact on their quality of life, even if it is not negatively associated with survival. These data are highlighting once again that survival isn’t everything.”

The study’s findings are consistent with other recent reports looking at the role of muscle mass in dialysis patients, according to Kamyar Kalantar-Zadeh, MD, MPH, PhD, chief of the division of nephrology and hypertension and professor of medicine at the University of California Irvine School of Medicine. Kalantar-Zadeh was the lead author of a similar study of almost 800 maintenance hemodialysis patients published in the *Clinical Journal of the American Society of Nephrology* in 2010. That study used mid-arm muscle circumference as a surrogate for lean body mass and triceps skinfold as a surrogate for fat mass. The study found that patients with more mid-arm muscle not only ranked higher on a mental health, quality-of-life scale but also had greater five-year survival rates. That finding of greater survival adds important information, considering that the study by Beddhu and colleagues was

cross-sectional, giving a snapshot in time of the association of the patients’ baseline levels with better quality of life.

Kalantar-Zadeh said that more studies are needed to go beyond associations and establish causation. “Dialysis patients have very high mortality and they have very poor quality of life. We need more studies to show whether doing something to increase muscle mass improves the outcomes in physical function and quality of life. If these associations are causal, interventions to increase muscle mass may improve patient outcomes,” he said.

Johansen agreed that “we need longitudinal studies and intervention studies to see what happens if we have patients lose weight and build up muscle. Can we improve patients’ functioning by doing these things?”

Beddhu echoed this assessment: “Because this study shows that higher muscle mass is associated with better physical function and quality of life in dialysis patients, interventions such as increased physical activity that decrease fat mass and increase muscle mass are likely to improve physical function, quality of life, and survival in dialysis patients. Such interventions need to be tested in clinical trials.” ●

ESCOs

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to reduce duplicative services and expenditures, the ACO would consolidate all aspects of care for patients with end stage renal disease (ESRD).

According to CMS, the initiative will identify, test, and evaluate new ways to optimize the quality of care for Medicare beneficiaries with ESRD. To do so, CMS will partner with health care providers and suppliers to test the effectiveness of a new payment- and service-delivery model with the goal of providing beneficiaries patient-centered, high-quality care resulting in improved outcomes and overall Medicare savings.

Positive changes to the ESCO application process

ASN believes that CMS’s revised RFA was a step in the right direction and may entice organizations to participate in the program. The new RFA eliminates its original concept of reimbursing the program in years 4 and 5. This would have effectively penalized the highest performing ESCOs. This is a major change that will make the

program more attractive to participants who are investing in costly resources and activities that will deliver better, higher-value care—the goal of the ESCO program.

Second, CMS said that allowing aggregation of beneficiary numbers and financial benchmarking information among smaller, non-large dialysis organization (LDO) providers is a positive change that might induce smaller providers to participate.

Finally, removing the requirement that nephrologists must be independent entities will likely make it possible for more nephrologists to consider becoming an ESCO-participant owner. Consequently, a nephrologist could be employed full or part time by another entity and still take an ownership share in the ESCO.

Outstanding challenges

Although CMS has made significant changes to attract greater participation, some are still concerned these changes may not be enough. Challenges to the program still remain. For instance, no end points have been established regarding what success will look like or how ESCOs will be judged as a success or a failure. The program is fundamentally an experiment, but

in the scientific world one would never start a trial without first determining the end points being aimed for and what would define success.

Another major concern is how the ESCO program will incentivize kidney transplantation, one of the program’s stated goals. Financial incentives in the current RFA do not seem to be aligned to promote transplantation, and CMS has not articulated any strategies to rectify this.

The proposed technical expert panel (TEP) measure recommendations put forth were either not tested for dialysis patients or were recycled from general ACOs, not accounting for protocols that ESCOs would already be following. By making the proposed measures nonspecific to an ESCO population, CMS is increasing the administrative burden while not increasing patient quality. If the care organization is targeting a very specific population, the metrics should be as specific as possible to fit the unique needs of that population in order to optimize patient quality of life, satisfaction, and outcomes.

In addition, CMS does not take into account that ESCOs are incentivized to reduce expensive hospital-based care. This means that metrics designed to reduce hospitalizations and other expensive care

may, in fact, be redundant administrative demands with no tangible effect on clinical outcomes. Finally, it is unclear how the metrics will interface with existing metrics in the Quality Incentive Program (QIP) as well as interpretative guidance in the Conditions for Coverage. Although it is stated that QIP metrics will be applied to the ESCO model, when QIP measures overlap with or supersede an ESCO measure, how will this be addressed? ASN, along with others from the kidney care community, has submitted comments to CMS regarding the proposed measures and will continue to work with CMS to produce patient-centered care for the ESCO program.

ASN remains hopeful that CMS can work within the community to finalize measures that fit the ESCO patient populations, and maintains that, if implemented appropriately, they could save costs while providing the highest care for patients.

The deadlines to apply for the ESCO program are June 23, 2014, for LDOs and September 14, 2014, for non-LDOs. CMS stated that the letters of intent will be used only for planning purposes and will not be binding. Applicants may access the application portal at <https://innovationgov.force.com/rfa> ●

Something to Say?

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