



Letter to the Editor

Response to the letter “Handgrip strength may not accurately reflect the overall nutritional status of patients”



Dear Editors,

We read with great interest the very punctual comments regarding our recently published article entitled “Handgrip strength is an independent predictor of all-cause mortality in maintenance dialysis patients” [1] in the letter “Handgrip strength may not accurately reflect the overall nutritional status of patients” by Shi Bo and Chen Junqiang.

In fact, malnutrition is an important problem in the course of chronic diseases progression. However, the causes and mechanisms involved in malnutrition in chronic kidney disease (CKD) are not the same as cancer. Particularly, in chronic kidney disease, malnutrition is characterized by loss of muscle mass, which is often associated with diminished functional capacity [2] and quality of life [3], morbidity, and all-cause mortality [3–5]. The terminology for malnutrition characteristic of CKD is “protein energy wasting” (PEW) [2]. Because of the significant role on mortality prediction, we consider strictly important to detect even the early stages of PEW. It is not of our knowledge other cheap and feasible assessments that can predict the very early stages of malnutrition such as handgrip strength. We would not diminish the importance of an assessment that can detect mortality risk earlier than low muscle mass in dialysis patients (evaluated in our study by middle-arm muscle circumference, which was not significantly different between survival and non-survival patients). This would permit the care team to provide early intervention, and thus, try to improve the poor prognosis.

As muscle mass loss is the main characteristic of PEW [2], and as muscle strength loss precedes muscle mass loss [6], the assessment of muscle strength is relevant in dialysis patients. We have not cited anytime in our paper that muscle strength may reflect the overall nutritional status of dialysis patients, although associations between handgrip and malnutrition inflammation score, which is a score specifically developed for CKD patients that assess the overall nutritional status, were verified in CKD [7] and dialysis patients [8].

To the best of our knowledge, there is no study evaluating if muscle strength and muscle function changes reflect only the early stages of PEW, not the overall nutritional status of patients. We hypothesize that muscle strength progressively decrease with

concurrent muscle mass loss. However, studies with longitudinal assessments evaluating the influence of muscle strength changes on mortality risk are necessary.

We agree that patients who cannot perform handgrip strength measurement should be excluded of the study. We know it would be an important bias. In our cohort, none of the included patients presented any of those conditions (shoulder injury, arm or hand injury, chest and abdominal surgery, ipsilateral breast cancer radical operation, Parkinson's disease, brachial plexus injury, cervical spondylotic radiculopathy with numbness, and thoracic outlet syndrome).

We also do not know any study that shows an association of nutritional status with variation in handgrip strength in CKD and dialysis patients and unfortunately, there are no references in your letter. Some studies evaluate a single measurement of handgrip strength as predictor of renal outcome [9], inflammation [10] and mortality [10–12].

We agree the term “decreased handgrip strength” refers to an evolution of handgrip strength. Perhaps none of the authors either the peer reviewers noted this small contradiction, since this term is cited only once in our paper. We can't agree that “decreased handgrip strength” is used for nutritional assessment, and “low handgrip strength” is used for nutrition screening. We can use “decreased handgrip strength” to compare the change on handgrip strength between nutritional assessments, while “low handgrip strength” also might be used in a single nutritional assessment, as well for nutrition screening.

We appreciate the opportunity to answer it, mainly because we believe it is necessary to discuss and clarify the issues raised in their letter. However, it's a cause for concern that in massive publication days, the preciosity is often highly valued, leading to expand minor details and generating delay in demands and lack of focus on really strategic information.

Conflict of interest statement

None.

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