

# Lower creatinine as a marker of malnutrition and lower muscle mass in hemodialysis patients

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## Dear editor

We read the recently published and well-designed study of Lee et al<sup>1</sup> that suggests that bioimpedance analysis (BIA) gives relevant information about hydration status and malnutrition in hemodialysis patients. The authors recommend that utilization of BIA routinely in hemodialysis patients would be rational. We would like to make a few comments about their study.

In their study, elderly subjects had significantly lower creatinine levels. Recent studies indicate that lower creatinine levels in patients undergoing hemodialysis are associated with lower muscle mass, malnutrition, and mortality.<sup>2</sup> We have also observed lower creatinine levels and higher urea/creatinine ratios in elderly hemodialysis patients compared with younger ones and in those with poorer nutritional status compared with those with normal nutritional status.<sup>3</sup> Thus, we recommend that the authors report on the association between creatinine, handgrip strength, BIA measurements, and malnutrition inflammation score in their study that may provide clinically relevant and practical information.

## Disclosure

The authors report no conflicts of interest in this communication.

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## References

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## Dear editor

We would like to thank Drs Yildiz and Tufan for their thoughtful comments on our recent study.<sup>1</sup> Malnutrition is common in elderly hemodialysis (HD) patients and is associated with increased morbidity and mortality.<sup>2</sup> Therefore, proper assessment of nutritional status and its management is essential for elderly HD patients. A panel of tests that assess

body composition as well as body protein stores are recommended. The serum creatinine (Cr) level before dialysis is a strong predictor of low muscle mass and poor outcome.<sup>3</sup> Our study also demonstrated that elderly HD patients have lower serum Cr levels similar to the study by Tufan et al.<sup>4</sup> Univariate analysis showed serum Cr level was significantly associated with malnutrition-inflammation score ( $\beta=-0.289$ ,  $P=0.008$ ). However, on multivariate analysis, serum Cr level lost its significance ( $\beta=-0.015$ ,  $P=0.899$ ). The serum Cr level has been used as a biochemical nutritional marker along with serum albumin or prealbumin. However, the observed serum Cr is to some extent dependent on the intake of animal proteins and study population differences may also contribute to discrepancies. Measuring serum Cr level is cheap compared to other biochemical nutritional markers and is routinely measured in HD patients. However, serum Cr measurements may not give the full picture of nutritional status and lack significance compared to bioimpedance analysis measurement especially in elderly HD patients.

## Disclosure

The authors report no conflicts of interest in this communication.

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