Letter to the Editor

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KIDNEY RESEARCH AND CLINICAL PRACTICE



# Very low protein plus ketoacid analogs of essential aminoacids do not confirm superiority of a low protein diet to retard chronic kidney disease progression

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## To the Editor:

I read with great interest the original work of Satirapoj et al [1], particularly with regard to the number of cases seen in patients affected by chronic kidney disease (CKD III and CKD IV). However, in spite of the use of an amino acid supplement, this study seems to lack clarity and provides no firm evidence by which to evaluate and confirm the aims of the study. In particular, I should like to emphasize the following: 1) There is no explanation as to how glomerular filtration rate (GFR) was calculated. 2) Generally, when assessing the outcome of residual renal function, patient adherence to a very limited diet such as the very low protein diet (VLPD) should be monitored, particularly if the patient is required to take approximately 13 tablets a day of steroids over an extended period of time. Conversely, the compliance assessments cited in this study are based solely on diet records and tables of standard food composition. This type of adherence assessment has never been viewed as a reliable method due to the need to associate it with a strict educational program and to implement monthly or three-monthly checks by an expert nutritionist [2–5]. Furthermore, in routine clinical practice, the deceptive and misleading nature of patient recall is widely acknowledged, and also takes into account poor patient evaluation and failure to introduce specific foods and liquids. 3) A further serious bias of this study is due to omitting to report the amount of energy provided by the kilocalories prescribed and introduced. Evaluation of the latter is a mandatory skill for a renal dietician. Without a strict prescription [6], no comparisons or evaluations of GFR outcome between the two groups can be obtained, as energy intake has a marked effect on anabolism and protein catabolism. 4) No assurance is provided that patients suffering from acute, subacute, or chronic intestinal diseases that exacerbate the microbiota, already severely affected by the uremic milieu and amino acid adsorption, were excluded from the study [7]. 5) Finally, the sole method to have been deemed reliable since 1985, still in use today, is assessment of urea nitrogen appearance, which takes into account the output of urinary and non-urinary nitrogen, in addition to the differences detected in urea distribution volume; indeed, the presence of azoturia did not seem to be assessed in the patients studied, although this simple evaluation yields the protein catabolic rate that provides considerably more reliable information, corresponding to actual protein intake [8,9]. Should the authors not be in a position to provide these data, no firm conclusions may be drawn from this paper.

## Conflicts of interest

The author has no conflicts of interest to declare.

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# The authors' reply


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We appreciate the interest of Dr. Bolasco in our recent publication "Very low protein diet plus ketoacid analogs of essential amino acids supplement to retard chronic kidney disease progression" [1].

First, Dr. Bolasco has commented on "how we have calculated the glomerular filtration rate (GFR)." In the Materials and Methods section of our study, we indicated that all routine laboratory tests including assays for plasma levels of hemoglobin, albumin, potassium, creatinine, calcium, and phosphate and estimated GFR using the 2009 CKD-EPI creatinine equation and staging according to The Kidney Disease: Improving Global Outcomes (KDIGO) 2012 at baseline and at the end of the study were performed. However, there are limitations of using creatinine to estimate GFR, i.e., variations in creatinine production and secretion. Dietary changes or dietary supplements can alter creatinine production [2,3].

The second comment was "The assessment of residual renal function outcome and evaluate the patient's adherence to a high dose of ketoanalog plus very low protein diet (VLPD) for a long period of time by a strict education program and expert nutritionist should be documented." Ensuring compliance is a main target for effective nutritional intervention [4]. Several studies have indicated that about 40% to 50% of CKD patients follow a VLPD diet [5,6]. As a retrospective study using medical electronic databases, our study could have involved selection bias including compliance to diet and other nephroprotective therapies. Moreover, dietary protein intake was assessed


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