Current recommendations for nutritional management of CKD and the role of ketoanalogues

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Although a low protein diet (LPD, 0.6-0.8 g/kg/day) should be the preferred management strategy for patients with non-dialysis CKD, this practice is infrequent in many nephrology circles. The historical underpinnings related to LPD including the non-conclusive results of the Modification of Diet in Renal Disease (MDRD) Study may have played a role. The 2-decade old trends to initiate dialysis earlier in North America might have confounded the use of LPD. The usual dietary intake in the US Americans includes high dietary protein content, which is in sharp contradistinction to that of a LPD. The fear of engendering or worsening protein-energy wasting may be an important handicap, however, there is also recently heightened interest and enthusiasm in gaining further insight regarding LPD's utility in both research and in practice. Different treatment strategies related to dietary intake may help circumvent the protein-energy wasting apprehension and offer novel conservative approaches for CKD management in North America. Ketoacid (KA) analogues of essential amino acids (EAAs) provide several potential advantages for people with advanced CKD. Because KAs lack the amino group, they can be converted to their respective amino acids without providing additional nitrogen. It has been well established that a very low protein diet (VLPD) with 0.3-0.4 g/kg/day that is supplemented with KAs and EAAs reduces the generation of potentially toxic metabolic products, as well as the burden of potassium, phosphorus, and possibly sodium, while still providing calcium. These KA/EAA-supplemented VLPDs can maintain good nutrition, but the appropriate dose of the KA/EAA supplement has not been established. Evidence is relatively consistent that these diets can delay the need for maintenance dialysis initiation, while they may also slow the loss of GFR in patients with moderate to advanced CKD. Some clinicians report prescribing KA/EAA supplements for patients with CKD including those treated with maintenance dialysis, but with diets that have much higher protein levels than the VLPDs in which these supplements have been studied. Future promising research may examine and expand additional utilities for KA/EAA supplements e.g. with higher protein intakes than VLDL.

References

