Dietary Protein Intake in a Multi-ethnic Asian Population of Healthy Participants and Chronic Kidney Disease Patients

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Abstract

Introduction: Clinical practice guidelines recommend different levels of dietary protein intake in predialysis chronic kidney disease (CKD) patients. It is unknown how effectively these recommendations perform in a multi-ethnic Asian population, with varied cultural beliefs and diets. We assess the profile of protein intake in a multi-ethnic Asian population, comparing healthy participants and CKD patients. Materials and Methods: We analysed the 24-hour urine collections of the Asian Kidney Disease Study (AKDS) and the Singapore Kidney Function Study (SKFS) to estimate total protein intake (TPI; g/day). We calculated ideal body weight (IDW; kg): 22.99 × height2 (m). Standard statistical tests were applied where appropriate, and linear regression was used to assess associations of continuous variables with protein intake. Results: There were 232 CKD patients and 103 healthy participants with 35.5% diabetics. The mean TPI in healthy participants was 58.89 ± 18.42 and the mean TPI in CKD patients was 53.64 ± 19.39. By US National Kidney Foundation (NKF) guidelines, 29/232 (12.5%) of CKD patients with measured glomerular filtration rate (GFR) <25 (in mL/min/1.73 m²) had a TPI-IDW of <0.6 g/kg/day. By Caring for Australasians with Renal Impairment (CARI) guidelines, 76.3% (177/232) of CKD patients had TPI-IDW >0.75g/kg/day. By American Dietetic Association (ADA) guidelines, 34.7% (44/127) of CKD patients with GFR <50 had TPI-IDW between 0.6 to 0.8 g/kg/day. Only 1/6 non-diabetic CKD patients with GFR <20 had a protein intake of between 0.3 to 0.5 g/kg/day. A total of 21.9% (25/114) of diabetic CKD patients had protein intake between 0.8 to 0.9 g/kg/day. Conclusion: On average, the protein intake of most CKD patients exceeds the recommendations of guidelines. Diabetic CKD patients should aim to have higher protein intakes.

Key words: Asian continental ancestry group, Diet, Kidney failure, Malnutrition