Examination of the Relationship between Actual Phosphorus Intake Levels Measured by the Duplicate Diet Method and Phosphorus Management in Dialysis Patients

Abstract

Although it is important to determine the routine phosphorus intake in dialysis patients to appropriately manage their phosphorus levels, actual phosphorus intake is unclear due to loss of phosphorus during cooking processes and the presence of phosphorus in food additives. In this study, we used the duplicate diet method to determine phosphorus intake of dialysis patients from their routine meals and to examine the relationship between patients' meals and phosphorus control to gain insight from the results. We instructed 19 dialysis patients to store duplicate meals from two consecutive days (a nondialysis day and a dialysis day) on which we performed nutrient analysis to measure the nutrient intake levels. The result showed that the mean daily energy intake was 1,407±369 kcal, with 48.7±17.5 g protein, 657±259 mg phosphorus, and a phosphorus/protein ratio of 13.4±1.7. No correlation was observed between serum phosphorus concentration and energy or protein intake values. No significant difference was found in phosphorus intake between the good phosphorus management group and the poor phosphorus management group. Further studies are necessary to examine the impact of phosphorus intake on serum phosphorus concentration, bone and mineral metabolism, and pathology.