KSN 2017 Abstract

KSN-17-P290

Predicting Clinical Outcomes using Phase Angle as Assessed by Bioelectrical Impedance Analysis in Maintenance Hemodialysis Patients

Jung-ho SHIN, So-hee JEONG, Jin ho HWANG, *Su hyun KIM

Internal Medicine, Chung-Ang University, Korea,South

Objectives : Protein-energy wasting is common in hemodialysis patients and is an independent risk factor for adverse events. We retrospectively investigated whether phase angle (PA), known as a nutritional marker, can predict various clinical outcomes in end-stage renal disease (ESRD) patients receiving hemodialysis.

Methods : Using bioelectrical impedance analysis (BIA), PA was obtained every 6 months, and patients were divided into two groups according to baseline PA: group A included patients with PA ≥4.5°, while group B included patients with PA <4.5°.

Results : A total of 142 patients were followed-up for the median of 29 (12, 42) months. We found that a decrease in PA was associated with an increased risk of death that persisted after adjusting for age, sex, and comorbidities (HR 0.56, 95% CI 0.33 – 0.97). Cardiovascular events were not associated with PA (P = 0.685). We found that PA predicted the occurrence of infection, independent of age, sex, and comorbidities (HR 0.65, 95% CI 0.45 – 0.94). Although levels of hemoglobin did not differ between groups during the study period, patients in group B received higher doses of erythropoiesis-stimulating agents and intravenous iron than those in group A (P = 0.004 and 0.044, respectively). In longitudinal analyses, we did not find increases in PA over time in patients who had a mean Kt/Vurea ≥1.4, protein catabolic rate ≥1.2 g/kg/day, or total CO2 level ≥22 mmol/L.

Conclusions : PA assessed in a simple manner using BIA provides practical information to predict clinical outcomes in ESRD patients on maintenance hemodialysis.

Keywords : phase angle, bioelectrical impedance analysis, outcomes, hemodialysis