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Dialysis

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Combined markers of protein-energy wasting and inflammation predict clinical outcomes in incident peritoneal dialysis patients.

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Background: Protein-energy wasting (PEW) and chronic inflammation are not only common but are known as predictors of adverse clinical outcomes in end stage renal disease (ESRD) patients. Whether the combined values of serum albumin, high sensitivity C-reactive protein (hs-CRP), and body mass index (BMI) have an additive impact on clinical outcomes compared to each variable by itself in incident peritoneal dialysis (PD) patients was evaluated.

Methods: A prospective cohort of 565 incident PD patients from the Clinical Research Center for ESRD in Korea was selected. Patients were divided into two groups based on the baseline levels of albumin (\geq and <3.8 g/dL), hs-CRP (\geq and <0.45 mg/dL), and BMI (\geq and <23 kg/m²). Primary outcome was the composite of all-cause mortality and unplanned hospitalization.

Results: The mean age was 51.4 years and 60.0% were male. During a median follow-up duration of 27 months, 50 patients (8.8%) died and unplanned hospitalization events occurred in 123 patients (21.8%). Univariate analysis revealed an increase in primary outcome risk with lower albumin and elevated hs-CRP compared to higher albumin and lower hs-CRP, respectively. A similar tendency was observed with lower BMI and primary outcome, although without statistical significance. Regarding the combination of these variables, Cox proportional hazards analysis revealed that patients with any two risk factors and all three risk factors exhibited significantly higher hazard ratios for primary outcome compared to patients without any single risk factor. The combination of these factors retained a significantly higher HR for predicting primary outcome, even after adjusting for other confounders.

Conclusion: The combination of serum albumin, hs-CRP, and BMI at the time of PD commencement was a significant independent risk factor for the composite outcome of all-cause death and unplanned hospitalization in incident PD patients.

Keywords: chronic kidney disease, end stage renal disease, Outcomes, peritoneal dialysis, protein energy wasting