

# Impact of nutritional status on hospitalization and treatment outcomes in peritoneal dialysis patients: A cross-sectional multicenter study

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## ABSTRACT

**Introduction:** Nutritional status, as indicated by normalized protein catabolic rate (nPCR), is a critical factor influencing the outcomes of peritoneal dialysis (PD) patients. This study aims to evaluate the relationship between nPCR levels, frequency and causes of hospitalization, and PD treatment outcomes. **Materials and Methods:** This cross-sectional, multicenter study included all PD patients from 2021 to 2023 who were over 18 and on PD for at least six months. The patients were categorized into two groups either nPCR levels  $\leq 0.8$  or  $>0.8$ g/kg/day. Multivariate logistic regression and comparative analyses were performed to evaluate demographics, frequency of hospitalizations, and treatment outcomes. **Results:** Among 529 PD patients, 29.5% had an nPCR  $>0.8$ g/kg/day, while 70.5% had an nPCR  $\leq 0.8$ g/kg/day. Patients with higher nPCR levels were significantly younger ( $47.2 \pm 17.9$  years vs.  $54.6 \pm 12.9$  years,  $p < 0.001$ ) and had longer duration on PD (median 4.0 vs. 3.0 years,  $p < 0.001$ ). Chinese ethnicity was less likely to have nPCR  $>0.8$ g/kg/day (Odds ratio {OR}: 0.22,  $p < 0.001$ ). Glomerulonephritis as the primary causes of end stage kidney disease (ESKD) also showed a strong association with lower nPCR levels (OR: 0.13,  $p < 0.001$ ). Patients with nPCR  $>0.8$ g/kg/day had a higher likelihood of transitioning to hemodialysis (HD) (24.4% vs. 13.1%,  $p = 0.001$ ) and were more likely to drop out of PD (25.0% vs. 13.4%,  $p = 0.001$ ). No significant differences were found in the frequency of hospitalizations or the causes of hospitalization between the two groups. **Conclusion:** Nutritional status, as reflected by nPCR levels, significantly affects patient demographics, the primary cause of ESKD, and PD treatment outcomes. Lower nPCR levels are associated with increased age, specific ethnic backgrounds, and certain ESKD causes. Contrarily, patients with higher nPCR levels have a higher risk of transitioning to HD or dropping out of PD.