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Effects of Excessive Body Fat Accumulation on Long-Term Outcomes During Peritoneal Dialysis

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Objectives: Significant body fat accumulation is an inevitable but potentially serious problem in peritoneal dialysis (PD) patients. Whether excessive fat gain predicts long-term outcomes in these patients remains unknown.

Methods: In this prospective cohort study (n = 297), the associations of excessive fat accumulation with patient survival and PD failure rate were examined. Based on dialysis duration at the time of study enrollment, patients were divided into short- (< 2 years) and long-term (> 2 years) groups. Body weight (BW) and body composition were measured twice, 12.8 ± 4.6 months apart. Excessive fat accumulation was defined as a 1-year change in the percentage of body fat (ΔPBF) over the highest quartile (5.0% for men, 5.4% for women).

Results: Substantial 1-year increases in BW and PBF were observed only in the short-term group ($p < 0.001$ and $p = 0.027$, respectively); changes were insignificant in the long-term group. In the short-term group, the ΔPBF was associated closely with unfavorable baseline metabolic profiles, including old age, diabetes, obesity, elevated blood pressure, and edema. Accordingly, the mortality rate was significantly higher in patients with, than in those without, excessive fat accumulation (hazard ratio [HR] 3.26, 95% confidence interval [CI], 1.05 - 10.26). It also increased the incident risk of PD failure 2.22-fold (95% CI, 1.08 - 4.54), even after adjustment for diabetes, obesity, and fluid status. In the long-term group, fat gain had no impact on long-term prognosis.

Conclusions: Excessive fat accumulation during the early period of PD was associated with baseline unhealthy metabolic profiles, a higher mortality rate, and a higher PD failure rate, independent of baseline obesity and fluid status.