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**Bioimpedance-guided fluid management in peritoneal dialysis patients: a randomized controlled trial**

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**Objectives:** Although achieving euvolemia is crucial in peritoneal dialysis (PD), assessment of volume status is relatively crude in clinical practice. This study was to evaluate the effect of bioimpedance spectroscopy (BIS)-guided fluid management on residual renal function (RRF), volume status, and cardiovascular events in PD patients.

**Methods:** A multicenter, prospective, randomized controlled trial was conducted. A total of 201 PD patients were enrolled and randomized to control group (clinical method-guided management, n = 98) and BIS group (BIS-guided management, n = 103). The overhydration (OH) value was measured every 6 months and masked to caregivers in the control group, while it was measured every 1 to 3 months and the target OH goal was -2.0 L to +2.0 L in the BIS group. The primary outcome was the change in the RRF. The secondary outcomes included change in volume status and cardiovascular events.

**Results:** The repeated measures ANOVA showed that there was a significant treatment effect on the change in OH value ( $P = 0.042$ ). The delta OH was not different between the two groups (Control group, -0.79 [95% CI, -1.20 to -0.38]; BIS group, -0.72 [95% CI, -1.15 to -0.30];  $P = 0.776$ ). The delta renal creatinine and urea clearance and delta urine volume did not differ between the two groups ( $P = 0.594$  and  $P = 0.350$ , respectively). The change in ultrafiltration volume, blood pressure, body weight, and echocardiographic parameters were not different. During a median follow-up of 36 months, the cardiovascular event rate was 10.2% and 11.3% in the control and BIS group, respectively ( $P = 0.953$ ).

**Conclusions:** The BIS-guided fluid management was effective for achieving euvolemia in PD patients and did not affect the decline in RRF.