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# Volume Control in PD- Tips for Volume Management for High-Quality PD

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Volume overload is directly linked to cardiovascular disease (CVD), which is the leading cause of death in peritoneal dialysis (PD) patients, due to hypertension and congestive heart failure (CHF). Adequate volume control could be more important for improving PD patient survival than small solute clearance..
For the treatment of hypervolemia in PD patients, the principle is to maximize peritoneal UF and urine output with a prescription that has the lowest glucose load to patients and without jeopardizing RRF. Strategies to maximize UF for the long dwell include shortening the dwell with glucose-based solutions (high transporter), using higher tonicity glucose-based solutions (but this is less preferable), using icodextrin for long day dwell for APD or long overnight dwell for continuous ambulatory PD, restricting dietary salt, and in those with RRF, using diuretics to increase urine volume. PD is known to preserve residual renal function (RRF) better than HD; residual renal diuresis is associated with improved patient survival. However, residual urine volume does not necessarily indicate volume status because the latter could also be affected by other factors, such as fluid intake, and slight overhydration (OH) might help with RRF preservation. Nevertheless, if peritoneal UF fails to sufficiently correct the volume overload, high-dose combination diuretics should be considered. Experimental approaches include using a low-sodium dialysate, a bimodal solution with glucose and icodextrin, 2 icodextrin exchanges per day, and incorporating intermittent hybrid therapy, all of which require further evaluation.
No robust data suggest that continuous ambulatory PD or APD results in superior volume control relative to the other. Therefore, PD modality selection considerations should go beyond BP and volume control, centering on broader concerns, such as patient preferences and local resources. APD has a potential for greater UF than continuous ambulatory PD, and mostly observational data suggest that APD may have a greater benefit for rapid transporters. Changing the PD solution type, exchange number, and dwell time are important PD prescription strategies to optimize BP and volume management. The more biocompatible PD solutions have been associated with stable peritoneal membrane function and UF capacity over time, compared with conventional glucose-based solutions, which have been associated with a progressive decline in UF capacity over time.
Managing BP and volume in PD patients requires an individualized approach with integration of numerous clinical, dialysis treatment, and patient factors.