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Adequacy of Peritoneal Dialysis and Residual Renal Function

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The 2006 National Kidney Foundation K/DOQI guidelines have lowered the peritoneal dialysis (PD) adequacy standard of Kt/Vurea from 2.1 to 1.7 in anuric patients, largely based on the patient survival results of 2 clinical trials in Mexico and Hong Kong. Adequacy of dialysis should be interpreted clinically rather than by targeting only solute and fluid removal. Clinical assessment should include clinical and laboratory results, peritoneal and renal clearances, hydration status, appetite and nutritional status, responsiveness to erythropoietin therapy, hemoglobin concentration, electrolytes and acid-base balance, energy level, calcium phosphate homeostasis, and blood pressure control. The CANUSA study originally reported the importance of total small-solute clearance in predictiong survial of PD patients. However, subsequent reanalysis of data from the CANUSA study clearly demonstrated that the predictive power for mortality in PD patients was largely attributable to residual renal function (RRF) and not to the dose of PD. While this should not lead to the assumption that the dose of PD is unimportant, it dose clearly indicate that the contribution of residual renal clearence and PD clearence to the overall survival of PD cannot be considered equivalent. In this review, we focus our discussion on the different potential mechanisms that explain the important link between RRF and cardiovascular disease and survival of PD patients.