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Synopsis from the paper: [Szeto CC, Wong TY, Chow KM, et al. Independent Effects of Renal and Peritoneal Clearances on the Mortality of Peritoneal Dialysis Patients. *Peritoneal Dialysis International* 2004;24:58-64.](#)

Updated to March 2006.

It has previously been demonstrated that the parameter of peritoneal Kt/V is an independent predictor of survival in patients with negligible renal function who are receiving continuous ambulatory peritoneal dialysis (CAPD) therapy.

We carried out a prospective, observational investigation to determine if peritoneal Kt/V values exerted a comparable effect on CAPD patients who still possessed residual renal function. Starting from September 1995, we managed to recruit a total of 150 existing and 120 new CAPD patients for the present study.

Patients were followed for up to a period of 6 years. Parameters that were measured included dialysis adequacy and nutritional indices. The latter comprised Kt/V value, residual glomerular filtration rate (GFR), normalized protein nitrogen appearance (nPNA), fat-free and edema-free body mass (FEBM), and plasma albumin concentration.

Primary outcomes were in the form of mortality rate and technique failure rate. The length of follow-up averaged 35.1 ± 22.0 months.

The mean peritoneal Kt/V value throughout the study was 1.59 ± 0.37 ; median residual GFR, 0.82 mL/min. The 5-year actuarial patient survival rate was found to be 41.5%, and the technique survival rate, 23.1%. Patients with total Kt/V values (the sum of peritoneal Kt/V and residual renal Kt/V) higher than 1.73 had better actuarial survival than those with Kt/V values less than 1.73 (Figure 1); however, the difference became obvious only after a lag period of 3 years.

Multivariate analysis revealed that age, sex, presence of diabetes, duration of dialysis therapy, serum albumin level, residual GFR level, peritoneal Kt/V value and nPNA value were all independent factors for both actuarial patient survival and technique survival. For every 0.1 increment in the peritoneal Kt/V value, the relative mortality risk was found to be 0.94 (95% CI 0.89 – 0.99, $p = 0.03$).

It is suggested that in prevalent CAPD patients with relatively low values of peritoneal clearance and residual renal function, a total Kt/V value of higher than 1.7 is associated with better survival. A total Kt/V value of less than 1.7 is likely to have a significant detrimental effect on the clinical outcome of patients maintained on CAPD.

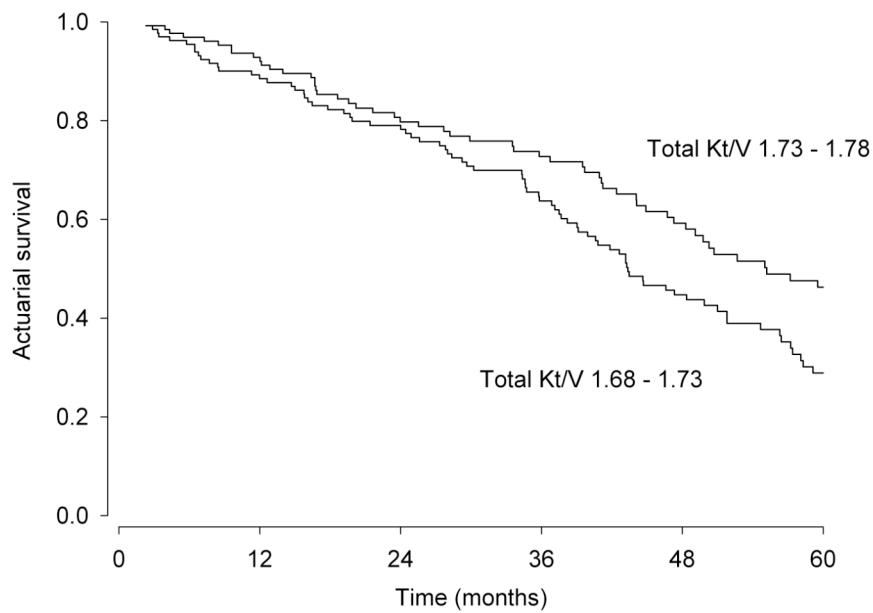


Figure 1. Comparison of actuarial patient survival in CAPD patients with total Kt/V above and below 1.73.

Commentary by Todd S. Ing, MD

Dr. Szeto and his colleagues in Hong Kong showed that a total Kt/V value of less than 1.73 was detrimental to CAPD patients when compared to one of more than 1.73. However, the benefits became apparent only after a lag period of 3 years. It should be noted that the above study results pertain to patients living in Hong Kong only. The vast majority of these patients are of Chinese descent and may possess constitutional, dietary, life-style or other characteristics that are different from those harbored by people from other parts of the world.