

Dialysis Survival after Graft Loss: Are We Finally Comparing “Apples to Apples”?

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The new paradigm in Nephrology is the individualization of patient care. A Kt/V of 1.2 may be enough for some but not for others (1), hemoglobin targets may not be appropriate if the patient is slow to respond and requires a high dose of erythropoietin (2), and in fact peritoneal dialysis (PD) may offer a survival advantage for some and not for others as an initial modality choice (3). Survival differences between PD and hemodialysis (HD) have been widely debated, with differences in outcomes influenced by variations in the cohorts, patients, and follow-up time. One persisting weakness in this literature is the adjustment for confounders such as the vascular access use, which has a significant association with increased mortality (4), and adjustment in functional difference between patients who can manage dialysis at home and those who require primarily in-center care. A recent comparison of HD patients on the transplant waiting list found no difference in survival compared with patients on PD, suggesting that the previous studies had some residual confounding (5).

As the number of renal transplants increase and patient survival improves, we will see more patients on dialysis after graft loss (DAGL), and DAGL is now in the top five causes of dialysis initiation. Again, studies have offered differing results when comparing survival outcomes of DAGL with transplant-naive patients on dialysis, depending on the specific cohorts studied and the duration of follow-up (6,7). In the majority of the studies, patients who commenced PD after graft loss experienced outcomes comparable to those with failed native kidneys (8,9). Differences in survival between PD and HD in DAGL patients has not been rigorously examined. The DAGL population has unique risk-modifying variables, including an increased risk for infection as a result of the effects of long-term immunosuppression, presence of a failed allograft as a source of chronic inflammation, and less exposure to predialysis care, and little is known regarding the impact of transplant residual renal function (RRF) on the survival in DAGL patients, making this an important question to address.

Perl *et al.* (10) used the Canadian Organ Replacement Register (CORR) to study a 15-year cohort of patients who returned to DAGL and compared early (2 years) and late (>2 years) survival between patients who initiated HD and PD. After adjustment,

they found no difference (hazard ratio [HD:PD] 1.05; 95% confidence interval 0.85 to 1.31) between the modalities and similar results in the early and late survival analysis. As with most retrospective analysis, limitations include lack of data to adjust for important effect modifiers including vascular access type, RRF, time in a chronic kidney disease predialysis clinic, and additional comorbid conditions acquired after the start of transplantation. However, if these factors did influence outcome, then one may expect the survival in the first 2 years to be different from that of the later years as a result of a decline in RRF or death of patients using catheters.

Why, then, are these results different from the early PD survival benefit seen in transplant-naive patients who initiate dialysis? This PD and HD cohort were much younger than the average patient starting dialysis, with glomerulonephritis being the most common primary renal disease. Among transplant-naive dialysis patients, use of PD has been associated with preserved RRF compared with those on HD (11). Although they do not provide documentation of RRF, it is probable that patients who returned to DAGL had less RRF, eliminating any potential survival advantage of PD over HD. It does suggest that once we get to comparing “apples to apples,” we no longer see survival differences. This study offers some reassurances as to the survival parity between PD and HD in the DAGL population. Registries that collect data on patients who return to DAGL should be encouraged to include accurate comorbidities, vascular access type, RRF measurement, and laboratory parameters to address this question more accurately.

What other important messages does this study hold for us? Surprisingly, only 18% of DAGL patients chose PD as their dialysis modality despite being younger and having a lower disease burden. This percentage is lower than that of new patients who start PD as initial therapy in the era studied in Canada. In addition, only 45% of those previously on PD returned to PD, and, although not documented, it is unlikely that the rest went to home HD. Predialysis care is essential to getting patients started on PD and for creation of a permanent vascular access for HD patients, and the literature suggests that transplant patients receive suboptimal chronic kidney disease care (12). Earlier referral to predialysis care with mo-

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dality selection and access creation will ensure an optimal start on dialysis and will reduce the financial burden to the health care system. PD offers independent care without restrictions on travel, similar to the transplant environment, and should be considered a viable option for these patients.

It is also important to note that patients with preemptive transplants had improved survival compared with nonpreemptive patients whether on HD or PD after graft loss, emphasizing the need to make this program more available and to shorten the time on dialysis by increasing the transplant donor pool.

Disclosures

None.

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