
Premptive Renal Transplantation: PROS and CONS

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Renal transplantation is the best RRT option for patients who have reached end stage renal disease (ESRD). Premptive renal transplantation (PRT) is a further option enabling patients to avoid a dialysis period before transplantation.

Some of the theoretical caveats proposed for PRT include, failure to maximize the use of native kidney function, to benefit from possible immunosuppressive effects of uremia and from pretransplant dialysis (PTD) experience which may help to increase posttransplant compliance to treatment. Furthermore, at least some patients may recover their renal function after having been considered as at ESRD. PRT will mean an unnecessary transplantation. for this subset of patients. Some retrospective studies have reported no marked benefit of PRT (1,2) over PTD. These disadvantages have been questioned over the last decade. Data from several recent large studies clearly suggest an improved allograft and patient survival rates associated with PRT when compared with transplantation after a period of dialysis.(3,4) The North American Pediatric Renal Transplant Cooperative Study group reported that graft survival is improved for children receiving PRT compared with children receiving transplants after initiating chronic maintenance dialysis(3). Mange et al also reported a 52% reduction in the risk of graft failure associated with PRT(4). These differences in results could be due to differences in the populations studied, recipients age, level of kidney function at transplant or transplant era(6)

The possible reasons for the improved graft and patient survival may be the earlier avoidance of morbidity associated with dialysis and dialysis access procedures in PRT patients. A longer waiting time on dialysis is a significant risk factor for death-censored graft survival and patient death with functioning graft after renal transplantation ($P < 0.001$ each). Relative to preemptive transplants, waiting times of 6 to 12 months, 12 to 24 months, 24 to 36, 36 to 48, and over 48 months confer a 21, 28, 41, 53, and 72% increase in mortality risk after transplantation, respectively. Relative to preemptive transplants, waiting times of 0 to 6 months, 6 to 12 months, 12 to 24 months, and over 24 months confer a 17, 37, 55, and 68% increase in risk for death-censored graft loss after transplantation, respectively(5). These results suggest that longer waiting times on dialysis have a negative impact on post-transplant graft and patient survival. These data strongly support the hypothesis that patients who reach end-stage renal disease should receive a renal transplant as early as possible in order to enhance their chances of long-term survival. However although PRT seems to be a better opportunity, the question is at which GFR level should PRT be performed. Current data suggest that PRT should

be performed when GFR reaches $<20-15$ ml/min. Residual renal function does not seem to have an additive beneficial effect on long term graft survival. It has been suggested that a policy of waiting as long as possible , provided one does not initiate dialysis, will maximize the time to failure of the transplanted kidney and that the benefits of this approach to the society will be to ultimately maximize the time until a preemptive transplant recipient returns for a subsequent transplant or is in need of dialysis.

Dialysis is not only associated with morbidity, it is also expensive. In developing countries, preemptive renal transplantation (Tx) may be a cost-effective option, offering an additional benefit to conventional renal transplantation reducing the cost for the management of ESRD patients.

Despite these advantages, there seems to be unforeseen barriers in patients' access to this option. Bertram et al reported that PRT was less common among racial minorities, among those who are less educated and those who did not have additional private insurance(6). Furthermore, PRT requires that the medical evaluation for suitability for transplantation occurs before the initiation of maintenance dialysis. In one study, non-dialysis-dependent persons had seen a nephrologist for a mean of 71.0 ± 84.7 months before transplant evaluation, whereas persons who presented for nonpreemptive evaluation reported first seeing a nephrologist a mean of 25.0 ± 42.8 months before dialysis initiation ($P < 0.001$) (7). First learning about transplantation from somebody other than a nephrologist significantly increased the odds of undergoing nonpreemptive transplant evaluation. The odds of nonpreemptive evaluation were decreased for every additional 3 months of chronic renal disease care by a nephrologist. These findings suggest that transplant opportunity before initiation of dialysis is affected by the duration of care provided by a nephrologist. In conclusion PRT is an important RRT option that needs to be at least considered in all patients reaching ESRD.

References

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