

2018

Opportunities for increasing the rate of preemptive kidney transplantation

S. Fishbane

Zucker School of Medicine at Hofstra/Northwell

V. Nair

Follow this and additional works at: <https://academicworks.medicine.hofstra.edu/articles>

 Part of the [Nephrology Commons](#)

Recommended Citation

Fishbane S, Nair V. Opportunities for increasing the rate of preemptive kidney transplantation. . 2018 Jan 01; 13(8):Article 4458 [p.]. Available from: <https://academicworks.medicine.hofstra.edu/articles/4458>. Free full text article.

This Article is brought to you for free and open access by Donald and Barbara Zucker School of Medicine Academic Works. It has been accepted for inclusion in Journal Articles by an authorized administrator of Donald and Barbara Zucker School of Medicine Academic Works. For more information, please contact academicworks@hofstra.edu.



Clin J Am Soc Nephrol. 2018 Aug 7; 13(8): 1280–1282.

PMCID: PMC6086706

Published online 2018 May 16.

PMID: [29769181](#)

doi: 10.2215/CJN.02480218; 10.2215/CJN.02480218

Opportunities for Increasing the Rate of Preemptive Kidney Transplantation

[Steven Fishbane](#)[✉] and [Vinay Nair](#)

Division of Nephrology, Department of Medicine, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, Great Neck, New York

[✉]Corresponding author.

Correspondence: Dr. Steven Fishbane, Division of Nephrology, Department of Medicine, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, 100 Community Drive, 2nd Floor, Great Neck, NY 11021. Email: sfishbane@northwell.edu

Keywords: chronic kidney disease, end stage kidney disease, Graft Survival, kidney transplantation, Living Donors, transplantation

[Copyright](#) © 2018 by the American Society of Nephrology

Introduction

Kidney transplantation is the preferred treatment for ESKD. Ideally, transplantation should occur before initiating dialysis, which is termed preemptive transplantation. Studies have found improved patient and graft survival with preemptive transplantation compared with transplant after dialysis. Other outcomes improve as well: for example, reduced overall cost of care and improved patient employment status. Accordingly, there is broad consensus that preemptive transplantation for appropriate (without medical contraindications) patients is the optimal treatment for ESKD (1,2).

Despite the clearly defined benefits, it is remarkable how few patients actually receive a preemptive transplant. It is the initial treatment in only 2.5% of patients in the United States who develop ESKD. Looked at differently, of all living donor transplants, 31% are preemptive. There is clearly a mismatch between the value of preemptive transplantation and its use.

Can Higher Rates Be Achieved?

Two recent studies indicate the possibility and feasibility of increasing preemptive transplantation rates. Fishbane *et al.* (3) found that 13% of patients taking part in a care management program underwent preemptive transplants. Similarly, Khosla *et al.* (4), in a description of a comprehensive CKD center, reported a 24% rate. These programs show that higher levels of preemptive transplantation are clearly achievable.

Starting Point: Getting Patients to Nephrologists

It is almost impossible to accomplish preemptive transplantation without substantial pre-ESKD care by a nephrologist. This was shown in the study by Cass *et al.* (5), which reported that almost no patients referred late (within 3 months of ESKD) received transplants before starting dialysis. In 2015, among

patients starting ESKD treatment, 25% had never seen a nephrologist, eliminating any opportunity for preemptive transplantation. Some of these patients may have received minimal health care of any type, and others may have been referred late by internists. It is of interest that, among patients with CKD stage 4 or 5 coded in 2014 and alive in 2015, only 68.8% saw a nephrologist in 2015, whereas 92% saw a primary care physician. This suggests that further education of primary care physicians on the importance of nephrology referral in late-stage CKD is vitally important.

Educate When GFR<30/Modality Selection When GFR<20

Even when seen by a nephrologist, there is variation in transplant referral. The Organ Procurement and Transplant Network (OPTN) suggests that referral to a transplant center should occur in patients with stage 4 and 5 CKD. The low rate of preemptive transplantation indicates that referral rates may be inappropriately low. One study found that only 16.2% of patients from a single nephrology center were listed preemptively (6).

A critical path step for successful ESKD preparation and increasing preemptive transplantation is completed modality selection. There is a point in advancing CKD where the patient and nephrologist must agree that ESKD is likely to occur and that discussion and education leading to an ESKD treatment modality decision must occur. If there is delay, then it is very difficult to create and develop arteriovenous fistulas for hemodialysis, increase home dialysis, or offer preemptive transplantation.

Patients frequently resist making a modality decision for a variety of reasons. In our experience, these probably include fear, depression, failure to accept looming ESKD, and sociocultural factors. Patients with advanced CKD often have multiple medical problems that are active at once, and the thought of planning for ESKD could be overwhelming.

Nephrologists themselves sometimes contribute to the problem. Nephrologists may occasionally delay the critical discussions because of a belief that, although kidney function is severely diminished, it is stable. This often proves to be incorrect, because the kidney function may decline suddenly due to the underlying disease or an acute infection or other illness.

Repeated discussion and education are necessary for moving most patients to a point of willingness to choose a modality. Very direct discussion should include explanation of the level of kidney function and the consequences of failing to prepare well in advance. All appropriate ESKD options should be presented to the patient in a way that demystifies the treatments. For all appropriate patients, the focus should be “transplant first.”

Finding Potential Living Donors

Identification of a living donor is essential for successful preemptive transplantation. Many patients find the process of asking family members, friends, or others to donate a kidney to be daunting. The nephrologist should educate on the donation process and the general safety of donation. The process could benefit if improved systems of support for kidney donors were developed.

Educating patients on how to conduct a conversation about their kidney disease can be very helpful. Strategies found to be successful include identification of a live donor champion/advocate and in some cases, using social media.

The treating nephrologist should follow the progress toward living donor evaluation closely. If potential donors are moving through the process smoothly, then the likelihood of transplantation increases. If the process snags, then the transplant program should identify issues on a timely basis.

Other Barriers to Preemptive Transplantation

Several investigators have found disparities in kidney transplantation. With reference to preemptive transplantation, the work of Jay *et al.* (7) is instructive. Over a 10-year period in the United States, it was found that certain patient characteristics were associated with likelihood of preemptive transplantation. Positive predictors included increased age, men, white race, blood types A and AB, kidney failure caused by polycystic disease, and higher educational level. Preemptive transplantation was reduced among patients with diabetes or hypertension, antibody sensitization, and particularly, Medicare as the primary payer.

Black patients with ESKD are, in general, significantly less likely to receive a kidney transplant than white patients. The reasons are multifactorial, but inaccurate nephrologist beliefs may play a role. Ayanian *et al.* (8) reported that nephrologists tended to underestimate benefits of kidney transplantation for black patients. There is clearly a need for a major educational initiative both for nephrologists and within black communities so that doctors and patients better understand the value of kidney transplantation.

Jay *et al.* (7) also found that, when Medicare is the primary payer, there was a 71% reduction in likelihood of preemptive transplantation. The expected explanation would be that Medicare patients are older. However, paradoxically, patients over 70 years of age are actually more likely than younger patients to receive preemptive transplantation. This may implicate Medicare policy itself as an obstacle. The reasons for this are probably multifactorial, but they likely hinge on greater financial uncertainty for the transplant center. Research is needed to better understand how Medicare coverage negatively affects preemptive transplantation likelihood and how barriers could be remedied.

At the time of this writing, there is proposed legislation that could adversely affect kidney transplantation in general. The “Dialysis Patients Demonstration Act of 2017” (S. 2065) was introduced in an effort to improve quality and value in care of patients with ESKD. However, there has been significant controversy regarding the bill. Most relevant to this article, four major kidney disease organizations, including the American Society of Transplantation, recently wrote to the bill’s sponsors to express concern regarding the potential effect on transplantation. Specifically noted is that substantial financial disincentives to transplantation would be created. In addition, control over transplantation would be ceded to newly created ESKD Integrated Care Organizations that would not include transplant centers as “participating providers” (9). In contrast, expanded Comprehensive ESKD Care initiatives as proposed by Hippen and Maddux (10) could align provider incentives to increase transplantation rates.

In addition, the new OPTN kidney allocation system activated in December 2014 may have inadvertently reduced the likelihood of preemptive transplantation by awarding waitlist credit from the date of initiation of dialysis. A consequence of this change may be less effort to list patients before starting dialysis. However, preemptive listing is certainly still worthwhile, because patients can obtain wait time before dialysis after eGFR is under 20 ml/min.

Another contributing factor to low rates of preemptive transplantation is complexity of the transplant evaluation. The process can be time consuming and difficult to navigate for patients. There have been attempts to make the evaluation process easier. One approach is the 1-day centralized workup (<https://www-ncbi-nlm-nih-gov.medproxy.hofstra.edu/pubmed/22571868>). Another is the use of transplant navigators to facilitate scheduling and completion of all of the steps in the process. A valuable resource for patients is the United Network for Organ Sharing Kidney Transplant Learning Center (<https://exploretransplant.org/unos-kidney-transplant-learning-center/>).

Nephrologists recognize the value of transplantation as the optimal treatment for most patients with ESKD. However, substantial education and facilitation are required to achieve preemptive transplantation. Payment for office visits does not fairly compensate nephrologists for the time required. A separate payment for transplant preparation should be considered by payers, all of whom benefit financially if preemptive transplantation is completed. In addition, just as there are quality measures for dialysis facilities, a metric related to referral for transplantation could help to incentivize nephrologists.

Conclusions

Preemptive kidney transplantation is a preferred choice for kidney replacement therapy for many patients, but it is underused. Increased recognition that it is achievable and better understanding of potential obstacles will improve preemptive transplantation numbers.

Disclosures

None.

Acknowledgments

The content of this article does not reflect the views or opinions of the American Society of Nephrology (ASN) or the *Clinical Journal of the American Society of Nephrology* (CJASN). Responsibility for the information and views expressed therein lies entirely with the author(s).

Footnotes

Published online ahead of print. Publication date available at www.cjasn.org.

References

1. Abecassis M, Bartlett ST, Collins AJ, Davis CL, Delmonico FL, Friedewald JJ, Hays R, Howard A, Jones E, Leichtman AB, Merion RM, Metzger RA, Pradel F, Schweitzer EJ, Velez RL, Gaston RS.: Kidney transplantation as primary therapy for end-stage renal disease: A National Kidney Foundation/Kidney Disease Outcomes Quality Initiative (NKF/KDOQIM) conference. *Clin J Am Soc Nephrol* 3: 471–480, 2008 [PMCID: PMC2390948] [PubMed: 18256371]
2. OPTN Minority Affairs Committee: Educational Guidance on Patient Referral to Kidney Transplantation. 2015. Available at: <https://optn.transplant.hrsa.gov/resources/guidance/educational-guidance-on-patient-referral-to-kidney-transplantation/>. Accessed January 31, 2018.
3. Fishbane S, Agoritsas S, Bellucci A, Halinski C, Shah HH, Sakhiya V, Balsam L.: Augmented nurse care management in CKD stages 4 to 5: A randomized trial. *Am J Kidney Dis* 70: 498–505, 2017 [PubMed: 28396108]
4. Khosla N, Gordon E, Nishi L, Ghossein C.: Impact of a chronic kidney disease clinic on preemptive kidney transplantation and transplant wait times. *Prog Transplant* 20: 216–220, 2010 [PubMed: 20929105]
5. Cass A, Cunningham J, Snelling P, Ayanian JZ.: Late referral to a nephrologist reduces access to renal transplantation. *Am J Kidney Dis* 42: 1043–1049, 2003 [PubMed: 14582048]
6. Joshi S, Gaynor JJ, Bayers S, Guerra G, Eldefrawy A, Chediak Z, Companioni L, Sageshima J, Chen L, Kupin W, Roth D, Mattiazzi A, Burke GW 3rd, Ciancio G.: Disparities among Blacks, Hispanics, and Whites in time from starting dialysis to kidney transplant waitlisting. *Transplantation* 95: 309–318, 2013 [PubMed: 23325005]
7. Jay CL, Dean PG, Helmick RA, Stegall MD.: Reassessing preemptive kidney transplantation in the United States: Are we making progress? *Transplantation* 100: 1120–1127, 2016 [PMCID: PMC4989865] [PubMed: 26479285]
8. Ayanian JZ, Cleary PD, Keogh JH, Noonan SJ, David-Kasdan JA, Epstein AM.: Physicians' beliefs about racial differences in referral for renal transplantation. *Am J Kidney Dis* 43: 350–357, 2004 [PubMed: 14750101]

9. American Society of Transplantation: Senate Patients Act Letter. 2017. Available at:
<https://www.myast.org/sites/default/files/SENATE%20PATIENTS%20Act%20Letter%202017.12.01.pdf>.
Accessed March 26, 2018.
10. Hippen BE, Maddux FW.: Integrating kidney transplantation into value-based care for people with renal failure. *Am J Transplant* 18: 43–52, 2018 [PubMed: 28898574]

Articles from *Clinical Journal of the American Society of Nephrology* : CJASN are provided here courtesy of
American Society of Nephrology