

Practice Pointers

The KDIGO Clinical Practice Guideline on Transplant Candidate Evaluation and Management Exhaustive, Authoritative, and Essential

By Terrence Jay O’Neil

The patient sitting in your office is in her low 30s, with an estimated GFR to match. She comes to you on referral from her primary care practice, unsure why she was referred, but the reason is pretty obvious to you. She has apparently been losing 5 grams of protein in her urine for some time—just how long isn’t clear because the proteinuria was first noticed 3 years ago but wasn’t quantitated, and this is the first time she has been referred to a nephrologist. She is moderately obese and takes three medications for her hypertension, including an angiotensin-converting enzyme inhibitor. But, kidney ultrasonography done at your request as she was being referred shows her kidneys to be larger—not smaller—than normal size. And, she says, a pack of cigarettes lasts her about a week.

Oh, and her hemoglobin A1c is 8%, so she has type 2 diabetes, too.

You will obviously be fully employed just dealing with the current here-and-now of the disease state this young woman is experiencing. Just trying to keep her from having to say “hello” to a dialysis unit staff somewhere fairly soon is going to be rough.

She has a quintuple whammy of risk factors, including diabetes, hypertension, nephrotic-range proteinuria, declining GFR, and smoking, along with that anomalous result on ultrasonography suggesting there may be something more at work on her kidneys that hasn’t even been suspected so far.

But, since she reports having been adopted, you aren’t going to get off easy with a family health history.

Darn! This is going to be complicated, and you’d better be able to do something positive for her quickly.

But, you also like to think ahead, and you are well aware that if you can’t find a way to forestall further kidney function loss, she may have a life with dialysis to look forward to. And nobody should face that kind of future. So, you’d like to refer her for a possible kidney transplantation at the earliest appropriate time.

But what is that time, and where do you go for the most authoritative step-by-step guidelines on how to prepare her for transplantation candidacy and referral? Where do you find thoroughly vetted recommendations, not only for the technical step-by-step of candidate evaluation but also for the insights that could keep her from facing a complication during transplantation or in its immediate aftermath?

Or, for that matter, how do you anticipate and forestall a possible future repeated decline into kidney failure from an undiagnosed additional condition, despite the new transplant?

You might strongly consider using the “Clinical Practice Guideline on the Evaluation and Management of Candidates for Kidney Transplantation” released by Kidney Disease: Improving Global Outcomes (KDIGO) in the April 2020 issue of *Transplantation*, the journal of The Transplantation Society and the International Liver Transplantation Society. The Guideline is intended to provide recommendations for evaluation of individual aspects of a candidate’s profile in such a manner that each risk factor and comorbidity is considered separately. The goal is to assist the clinical team to assimilate all data relevant

to an individual, consider this within their local health context, and make an overall judgment on candidacy for transplantation.

KDIGO is a respected international nonprofit organization established in 2003 by the US National Kidney Foundation, transformed into an independent multinational organization in 2012, and currently headquartered in Brussels, Belgium. Its mission is to develop and implement evidence-based kidney disease guidelines.

To produce the Clinical Practice Guideline on the Evaluation and Management of Candidates for Kidney Transplantation, KDIGO convened a 23-person executive committee and a 16-person work group. Other publications by the organization include guidelines for acute kidney injury, anemia in chronic kidney disease (CKD), CKD evaluation and management, mineral and bone disorders, diabetes, and blood pressure management.

A comprehensive, proactive approach

This Guideline, available on the KDIGO website <https://kdigo.org/guidelines/> for free download, has been under development since 2016. It is both comprehensive and extremely detailed, addressing in its 103 pages of text and supplements every candidacy issue for both adult and pediatric patients. Subjects such as access to transplantation, patient demographic and health status factors, and immunologic and psychosocial assessment are covered, but the Guideline does not address issues specifically involving candidates for combined kidney transplantation with another organ. Transplantation education is also not covered. The subjects considered cover the entire clinical course from the first consideration of the need for kidney replacement therapy to the kidney transplantation surgery itself. The full Guideline text is available at <https://kdigo.org/wp-content/uploads/2018/08/KDIGO-Txp-Candidate-GL-Exec-Summary-FINAL.pdf>.

The document stresses a proactive approach, beginning with a plea for all patients in CKD stage 4 and stage 5 to be fully informed about transplantation as an option, and for these individuals to be referred at least 6 to 12 months before the onset of kidney failure, with the optimal outcome being transplantation before dialysis initiation (so-called preemptive transplantation).

It also stresses avoiding out-of-hand dismissal of the feasibility of transplantation for those with amyloidosis, myeloma, hepatitis C, or other infectious diseases, and even active cancers until it has been determined that completed treatment cannot render the patients acceptable candidates. According to the Guideline, assessment of older candidates should consider potential frailty rather than simply chronologic age. Psychosocial assessment is stressed for both pediatric and adult patients because the outcomes hinge on compliance and aspects of lifestyle affected by the patient’s psychosocial environment.

Smoking comes in for special notice, with computed tomography of the chest being advocated to detect occult lung cancers in users with more than 30 pack-years and regular plain chest radiographs for those with less smoking history. Exclusion solely on the grounds of obesity is discouraged, but where it is severe enough to interfere with the surgery or postoperative healing, pretransplanta-

tion counseling and attempts to lower body mass index are stressed.

Advice is given for the management of anticoagulant and antiplatelet medications and their complications. The treatment of patients with massively enlarged polycystic kidneys is also discussed, as is the referral strategy and treatment of those with, or at risk for, diabetes mellitus. If the potential candidate’s cause of the kidney damage is either unclear or suspected to be complex, a definitive biopsy diagnosis is urged because of the potential for some conditions to recur in the transplanted organ. Evaluation for transplantation in the presence of cardiac and pulmonary disease, peripheral arterial disease, gastrointestinal disorders, neurologic conditions, bone and mineral disorders, and immune system abnormalities is discussed in detail.

An exhaustive list of the literature search terms for each major subject heading is given in an appendix to the main body of all KDIGO Guidelines. Another supplement gives the details of each study included in the review, along with evidence-quality tables for each.

This Guideline is a must-have for nephrologists who wish to have on hand a reference in their digital libraries that is informed by the best and most current evidence. KDIGO recognizes that the accumulation of new research and experience eventually renders all guidelines obsolete, and other guidelines it has already published have undergone appropriate revision and updating.

And the patient?

Oh, and your patient? You got her blood pressure under better control and convinced her to lose some weight, which improved her hemoglobin A1c and further helped her blood pressure. You prescribed a sodium-glucose cotransporter-2 inhibitor. You also convinced her to join a tobacco-cessation program. Based on what you can find of her past records, her GFR has been dropping at about 4 to 5 mL/min per year. That implies that you will have to refer her to a transplantation center at a GFR of 20 mL/min, given the 3- to 5-year waitlist time for kidney transplants, so she can have 6 to 12 months from listing before she reaches 10 to 12 mL/min and needs dialysis.

You also have a kidney biopsy scheduled a month from now to look for the very real possibility that those large kidneys that are only managing an estimated GFR in the 30s are not hiding something that could recur after transplantation.

Based on the KDIGO guideline for CKD management, you are seeing her every 4 months and continuously re-evaluating the downward slope of the GFR to see whether your interventions are slowing the progression. You have also connected her to other specialists for interventions that have been shown to slow progression: a nutritional medicine specialist, a pharmacologist, a nurse educator, and a clinical social worker.

She is being well cared for by you, using the best available science. Congratulations. ■

Terrence Jay O’Neil, MD, FASN, COLUSAFMC(Ret), is an affiliate nephrologist at the James H. Quillen VA Medical Center, and clinical professor of medicine at Quillen College of Medicine, East Tennessee State University, in Johnson City, TN.