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MONTHLY MEDICINE: Nephrology

CHRONIC KIDNEY DISEASE



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News flash: An independent risk factor for cardiovascular disease has been identified, affecting approximately 30 million Americans. The risk factor is chronic kidney disease (CKD) and it deserves our attention, especially when you consider that one out of every 9 Americans has it. But despite our awareness that the majority of CKD patients die from atherosclerotic complications, the United States has apparently been fooled into thinking it is a trivial problem. The proof of this can be found in recent studies, which document that many CKD patients in the U.S. are examined by a nephrologist for the first time within only

thirty days of needing to start dialysis. Up to 50% of patients have seen a nephrologist for less than four months before requiring renal replacement therapy. There are a myriad of reasons for these statistics, some unavoidable (such as patients presenting late to physicians due to the relatively silent nature of CKD) and some avoidable (such as late referrals by primary care physicians). This is a tragedy, since earlier referral to a nephrologist has clearly been associated with significant slowing in the decline of a patient's renal function. And while "late" referrals have been shown to lead to higher morbidity, mortality and excessive cost, close scrutiny reveals that renal subspecialists are sadly part of the problem as well. Nephrologists have been guilty of preparing patients "late" for renal replacement therapy, resulting in increased hospitalizations and complications associated with temporary dialysis accesses. In short, we simply must do better in the management of CKD patients. I propose that we begin by clarifying when patients should be referred to a nephrologist.

The National Kidney Foundation (NKF) recommends that "patients with established CKD should be

referred for recommendations regarding management of complications of kidney failure when the GFR/MDRD falls below 60 mL/min." Physicians have appropriately voiced concern about this cutoff of 60 mL/min; indeed some argue that almost their entire practice would warrant nephrology referrals! The NKF however, wants to correct the current practice by many physicians of simply monitoring stable abnormal, serum creatinine values without further renal evaluation. As a nephrologist, I would like to add the following comments:

- (1) Serum creatinine/MDRD should be checked on at least two separate occasions.
- (2) Perform a 24-hour urine for creatinine clearance if you suspect the MDRD is inaccurate (for example, patients who are pregnant or at extremes of body habitus and age).
- (3) Rule out reversible causes of renal failure, including volume depletion, nephrotoxins (commonly NSAIDs), and urinary obstruction (especially in elderly males).
- (4) Speak with your consulting nephrologist about any additional tests, such as urine studies or renal ultrasound, which will make the initial

visit with the nephrologist more productive.

(5) Certain clinical conditions (such as severe dementia) or patient wishes (advanced directives), may preclude the need for referral.

(6) Don't panic the patient! When possible, reassure the patient about the stability of their renal function while emphasizing the need for a complete evaluation.

After a patient is seen by a nephrologist in consultation, he/she will often be referred back to their primary care physician with treatment recommendations if the MDRD is greater than 30ml/min (although a diabetic patient may continue to be seen on a regular basis, at the discretion of the nephrologist). The nephrologist may give recommendations concerning management of CKD complications, such as anemia, acidosis, or secondary hyperparathyroidism.

An equally important goal is to optimize cardiovascular health, since most patients will die of atherosclerotic disease before they ever reach the need for dialysis or transplant. In fact, nephrologists agree that one of the most

Continues on next page

MONTHLY MEDICINE: Nephrology

important treatments is controlling the blood pressure, preferably with ACEI/ARB medications. Typical targets are <130/80, or <125/75 if patient has proteinuria of >1gm/24h. Controlling blood pressure poses a major challenge for the management of CKD patients, and may require close collaboration between the nephrologist and primary care physician. Otherwise, as noted by Tom Dubose in the American Society of Nephrology Presidential Address(2006), most patients with early kidney disease can be managed by the primary care physician with guidance from the nephrologist until advanced stage 3 disease.

The National Kidney Foundation concurs. Their second recommendation is as follows: "Patients should be referred for education and planning for renal replacement therapy and close co-management of complications when the GFR/MDRD falls below 30 mL/min."

I would like to add these comments about what happens to patients at this stage:

- (1) Continued treatment to slow progression of renal disease, with ongoing management of CKD complications.
- (2) Patient and family education concerning renal replacement options.
- (3) The patient will be seen by a team of specialists, including a renal dietitian, social worker and nurse educator.
- (4) Possible referral for kidney transplant evaluation.
- (5) Preservation of upper extremity vessels in the non-dominant arm for placement of a permanent access (for example avoidance of PICC lines and blood draws). A native arteriovenous fistula is the most reliable type of vascular access. Since it may take up to six months for a fistula to mature, early surgical referral is important. All attempts are made to avoid dialysis

catheters, not only given the risk of infection, but also due to the likelihood of irreversibly damaging proximal veins which might be needed for a future dialysis access.

- (6) If preemptive renal transplantation is not an option, the patient will typically start dialysis when the MDRD is less than 10ml/min in a non-diabetic, or less than 15m/min in a diabetic.

Access creation has become a major issue, with nephrologists now being monitored for the percentage of arteriovenous fistulas in their patients. In part this is because the cost of access-associated complications (typically with catheters or grafts) has approached one hundred million dollars annually in the United States. Nephrologists report that delays in preparation for dialysis and transplant are frequent. Patients may contribute to these delays, denying the severity of their renal disease or failing to see preparation

for renal replacement therapy as a priority. Repeated education will help, but a recent informal roundtable discussion with patients revealed a more obvious solution. Patients with advanced stages of CKD were more likely to accept advice from the nephrologist if they had received supportive counsel from their primary care physician. In other words, communication between patient, primary care physician and nephrologist is the key.

Chronic kidney disease continues to grow in incidence and prevalence in the United States. With this growth comes an alarming increase in cardiovascular disease. Collaborative efforts between primary care physicians and nephrologists are essential at all stages of renal disease, with attention focused not only on slowing CKD, but also minimizing risk of atherosclerotic disease. Only then will we be able to say that we have done the best in managing CKD. ■