

## Chronic Kidney Disease

Mr. Bean is a 55 year-old Caucasian male who has a history of hypertension and type 2 diabetes who presents to your office as a new patient. He was diagnosed with both diseases about 10 years ago. He reports “pretty good” blood pressure control in the 145/90 range when he checks with his home meter. His blood sugars are generally in the 160-180 range. He currently smokes 1/2 pack of cigarettes per day. His current medications are metformin 1000mg bid, and amlodipine 10 mg daily. He takes ibuprofen 400 mg twice a day for knee arthritis. He does not provide old records today, and reports no recent lab work done. VS: BP 150/90, 72 and regular, R12, Weight 250 lbs, Ht 71 inches. His physical exam, other than central adiposity, is normal.

1. What lab work would you like to order as part of his initial evaluation?
2. What key factors in his health would you counsel on him today?

**He returns for follow up in a week for the results on his blood work.**

|                 |     |             |  |
|-----------------|-----|-------------|--|
| Na              | 140 | UA          | 1.010/pH6.5/Neg LE/1+protein/Neg blood |
| K               | 3.8 |             |  |
| Cl              | 105 | FLP: T chol | 210/HDL35/LDL135/Trig 200              |
| CO <sub>2</sub> | 25  |             |  |
| BUN             | 15  | HgbA1c      | 8.0%                                   |
| Cr              | 1.4 |             |  |

3. Using the MDRD equation, what is his estimated creatinine clearance?
4. Does he have chronic kidney disease? If so what stage?
5. What class(es) of antihypertensives would be most likely to reduce risk of progression of his kidney disease and reduce his proteinuria?
6. Which of the following factors have been shown to reduce progression of renal disease. (circle all that apply)
  - a. Blood pressure control
  - b. Smoking cessation
  - c. Treatment of hyperlipidemia
  - d. Low protein diet
  - e. Consumption of kidney beans

**You start him on ramipril 5 mg per day and discontinue the amlodipine.**

7. What target blood pressure do you tell Mr. Bean that you're shooting for?

8. What is the most common cause of death in patients with CKD?
9. Which of the following antihypertensives reduce proteinuria? (circle all that apply)
  - a. ACE inhibitors
  - b. Angiotension II receptor blockers
  - c. Non-dihydropyridine calcium channel blockers
  - d. Dihydropyridine calcium channel blockers
  - e. Alpha-blockers
  - f. Beta-blockers

**One year later, despite your heroic efforts at controlling his blood pressure, diabetes and lipids, his Scr is now 2.5 mg/dl.**

10. What stage of CKD is he now?
11. What modifications would you make to his medication regimen?
12. When do you seek referral to a nephrologist?

Sources: UpToDate  
National Kidney Foundation. K/DOQI Clinical Practice Guidelines for Chronic Kidney Disease: Evaluation, Classification and Stratification. Am J Kidney Dis 39:S1-S266, 2002 (suppl 1)