Clinical Guidance on Screening Chronic Kidney Disease in Type 2 Diabetic Patients for Family Physicians

Incidence of diabetes is increasing in developing countries as well as Iran. Half of the patients are not aware of their disease so screening of diabetes is necessary. Lifestyle changes in society, high-saturated fat diet and decreased physical activity are the factors that influence the growing rate of diabetes in Iran.1

The need for addressing type 2 diabetes has been clarified for family physicians.2 Diabetes is a common disease that is associated with significant morbidity and mortality. It has an asymptomatic stage that may be present for up to several years before diagnosis.3 Diabetes is the leading cause of kidney disease.4 In a study among patients over 45 years with type 2 diabetes, these results were reported: 22% suffered from retinopathy, 7% had impaired vision, 6% had kidney diseases, 9% had clinical symptoms, and 19.1% were at risk for foot ulcers.3 Early treatment of type 2 diabetes can reduce or delay complications.4 Optimal glycemia and BP are important in the prevention of diabetic chronic kidney disease (CKD).4 Therapeutic goals in patients with complications, such as CKD, include maintaining renal function and stopping the trend of renal deterioration.5 Progression of diabetic nephropathy can be slowed through the use of some medications.6 How to screen and manage chronic kidney disease in patients with type 2 diabetes is shown in Figure 1.

Conflict of Interest: None declared.


References

**Chronic kidney disease (CKD) screening in patients with Type 2 diabetes mellitus (DM2)**

1. Patients with DM2
   - History and physical examination
   - FPG, serum Cr, microalbuminuria (Dipstick: if positive then quantitative test) and GFR at the onset of diagnosis and then every 6 months

2. Refer to Internist
   - Yes
   - GFR ≤ 60
   - Microalbuminuria ≥ 30 mg/24 hr or > 30 mg/g Cr (2 times)
   - No

3. Uncontrolled
   - FBS
   - Controlled
   - ACEIs or ARBs
   - Follow-up

4. Increase or no change in microalbuminuria
   - Increase dose of drugs
   - Decrease in microalbuminuria
   - No

5. Decrease in microalbuminuria
   - No

6. Uncontrollable high blood pressure
   - Add new antihypertensive drug

7. Control of blood pressure
   - Yes
   - Continue treatment and follow-up
   - No

8. Refer to Internist

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*Control of blood pressure and serum creatinine, BUN, microalbuminuria, sodium, potassium (3 mg/dl – 5.6 mg/dl) and GFR calculated every 3 months

**Figure 1:** Chronic kidney disease screening and management methods in patients with type 2 diabetes.

**Abbreviations:**
- DM: Diabetes mellitus
- FPG: Fasting plasma glucose
- GFR: Glomerular filtration rate
- BUN: Blood urea nitrogen
- ACEIs: Angiotensin-converting enzyme inhibitors
- ARBs: Angiotensin II receptor blockers
- Cr: Creatinine