1. What is Diabetic Nephropathy?

Diabetic nephropathy is one of the common complications of diabetes. Early symptoms are the occurrence of microalbuminuria because the patient does not have good control over blood sugar, so the blood veins in the entire body will have small lesions, thereby affecting kidney function. According to statistics, about 40% of patients have renal dialysis due to diabetic nephropathy.

2. Testing for Diabetic Nephropathy

(1). Albuminuria is diagnosed only if the urine albumin/creatinine ratio is consistently ≥ 30 mg/g within six months.

Classification Urinary Albumin/Creatinine Ratio (mg/g)	
☐ Normal or Mild Albuminuria	＜30
☐ Moderate albuminuria	30-300
☐ Severe albuminuria	>300

(2) Blood tests are performed to determine the amount of creatinine and index in renal function (renal filament filtration rate).

Kidney Filtration Rate (eGFR ml/min/1.73m^2)
☐≧ 90(Normal Renal Function)
☐60 ~ 89(Mild Renal Failure)
☐30 ~ 59(Moderate Renal Failure)
☐15 ~ 29(Severe Renal Failure)
☐< 15(End-Stage Renal Disease)

(3) Kidney ultrasonography to check whether kidneys are too large or have shrunk. (Examination process determined by the physician.)

3. Care for Diabetic Nephropathy

During the occurrence of albuminuria, you must actively receive treatment and care. Once the kidney is damaged, its function will never be able to go back to how it was and do a good job of daily health management. Receiving treatment is the best way to prevent and delay the decline of renal function.

(1) Good Blood Sugar Control

Hyperglycemia can lead to microvascular and macrovascular disease, affecting renal blood flow, resulting in decreased renal function. Normal blood glucose before meals is 80-130 mg/dl, 160-180 mg/dl after meals, with the glycosylated hemoglobin less than 7.0%.

(2) Strict Control of Blood Pressure

High and low blood pressure will accelerate the destruction of renal blood vessels, leading to a deterioration of renal function. Ideal systolic blood pressure should be controlled to be under 140 mmHg, diastolic blood pressure below 90 mmHg; blood pressure in patients with proteinuria should maintain their systolic blood pressure below 130 mmHg; diastolic blood pressure below 80 mmHg.

(3)Control Body Fat

Concentration of body fat is also one of the causes of renal dysfunction. Ideal amount of low-density cholesterol (LDL)is less than 100mg/dl and recommended amount of triglyceride (TG) is less than 150 mg/dl.

(4) Diet Adjustment:

(a)Adjust protein intake, such as fish, meat, chicken, duck, eggs, milk, soy products. This can reduce albuminuria and slow down the deterioration of kidney function. (Recommend following advice designed by a dietician.)

(b)Avoid fried and high fat foods such as: fatty meats, skin on meats, organs, dessert, and pastries. This is beneficial for maintaining normal blood fat concentration.

(c) Maintain a light diet, one without too much high sodium foods, such as: pickled, canned, or processed foods, to help maintain blood pressure.

(5) Healthy Living Habits：

(a)Exercising regularly will help control blood pressure, blood sugar, and fat control.

(b)Quit smoking, and you will have more control over high blood pressure and proteinuria.

(c)Maintain the ideal weight and avoid excessive obesity, with a body mass index (BMI) between 18.5-24. Waist (cm) <90 (male), <80 (female)

(d) Don't stay up all night, and don't binge on alcohol.

(6) Prevent Infection：

Common urinary tract and respiratory infections can affect kidney function.

(a)Prevention of Urinary Tract Infections: When using the restroom, have good personal hygiene habits. Do not hold back urine, and shower instead of bathe.

(b) Prevention of Respiratory Infections: Pay attention to the changes in temperature and add clothes when necessary. During influenza season, try not to go to public places. Furthermore, get the influenza vaccine every year around October to November to decrease the rate of getting sick.

(7) Continue Outpatient Treatment and Tracking

(a)Adhere to the doctor's instructions on using medication, do not use medicine from someone else or take any unknown remedies or herbs.

(b)Return regularly to see the doctor or nutritionist to get advice and guidance.

(c)Diabetic patients should be tested annually for microalbuminuria and for blood creatinine to monitor renal function.

Category/Unit	Target Value
Pre-Dinner Blood Sugar	80-130 (mg/dL)
Postprandial Blood Glucose	80-160 (mg/dL)
Glycosylated Hemoglobin(%)	＜7.0(Need to Consider for Each Individual)
Blood Pressure(mmHg)	＜140/90；Patients with Nephropathy＜130/80
Total Cholesterol	＜160 (mg/dL)
Triglycerides	＜150 (mg/dL)
Low Density Lipoprotein Cholesterol	＜100 (mg/dL)
High Density Lipoprotein Cholesterol	Male＞40、Female＞50 (mg/dL)

Please write down your question:

_____

Self-Assessment (True/False)

( )1.Microalbuminuria is the early sign of diabetic nephropathy.

( )2.High blood sugar may lead to small vessel disease and reduce renal functions.

( )3.Patients suffering from diabetic nephropathy would only be required to limit the intake of foods high in sugar.

Question Number	1	2	3
Answer	O	O	X

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Understanding Diabetic Nephropathy

認識糖尿病腎病變

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