

## Management

### Refer to Croydon Diabetes Guidelines

#### Primary Care management includes

- **Screening all diabetic patients** at diagnosis & every 12 months for renal disease by looking for raised levels of protein (usually albumin) in urine.
- **Urinary albumin:creatinine ratio (ACR)**, preferably determined on a drop of a first-morning sample, is the accepted method of screening for microalbuminuria. Whether this is done using a laboratory method or near-patient testing will depend on facilities available locally. If the ACR is raised then repeat on two further occasions (within 1 month where practical). Two positive tests out of three confirm the diagnosis. If uncertainty about the diagnosis still exists, consider confirming the result with a timed (24 hour) urine collection for total protein and creatinine.
- Type II diabetics may only demonstrate diabetic renal disease by raised creatinine levels in the absence of other renal disease. Measure **serum creatinine** at least once a year.
- Exclude causes for proteinuria other than diabetic renal disease (Urinary tract infection, other renal pathology, severe hyperglycaemia, intercurrent cardiac failure, contamination with blood, vigorous exercise).
- **Risk stratify the level of proteinuria:**
  - Normoalbuminuria** - urinary albumin:creatinine ratio less than 2.5 mg/mmol (men) or 3.5 mg/mmol (women), or urinary albumin concentration less than 20 mg/l.
  - Microalbuminuria** - urinary albumin:creatinine ratio greater than or equal to 2.5 mg/mmol (men) or 3.5 mg/mmol (women), or urinary albumin concentration greater than or equal to 20 mg/l or total urinary albumin loss 30-300mg/day. This represents incipient diabetic nephropathy.
  - Proteinuria (Macroalbuminuria)** - urinary albumin:creatinine ratio greater than or equal to 30 mg/mmol or urinary albumin concentration greater than or equal to 200 mg/l or total urinary albumin loss > 300mg/day. This represents existing diabetic nephropathy.
- Make appropriate **referrals** to Specialist Care.
- **Optimise blood sugar control and BP control** (Aim < 140/80 mmHg)
- Consider pharmacotherapy - Angiotensin Converting Enzyme Inhibitors (ACE I) or Angiotensin II Receptor Antagonists (AIIRA) as per local guidelines / NICE guidelines / Prodigy guidance.

#### Specialist management includes

- Initiation of more complex antihypertensive / renal protective drug combinations with appropriate monitoring.
- Possible renal biopsy.
- Preparation for long term renal dialysis for end stage renal failure and, where appropriate, renal transplant.

## When to refer

### Emergency [discuss with on-call specialist]

- Symptoms of severe renal damage such as **nephrotic syndrome** (foamy urine, oedema, hyperlipidaemia, hypertension).

### Urgent out-patient referral [liaise with specialist and copy to CAS]

- Patients with macroalbuminuria / proteinuria.
- Renal function is rapidly declining. If serum creatinine is higher than normal for age and sex, repeat after 1 month, if renal function is declining (i.e. serum creatinine increases), consider referral.
- Presence of blood in the urine (greater than ++ on dipstick testing) may indicate the presence of other causes of renal disease and requires further investigation.

### Refer to CAS

- Serum creatinine is greater than 150 mmol/l. This will depend on the age of the person and their previous renal function (serum creatinine increases with age).

### Refer to RARC

- if the patient does not meet the referral criteria above consider referral to CAS requesting a RARC appointment.