A guide for use in primary care

## What is microalbuminuria:

- Low level of albumin in the urine which exceeds normal levels, but below what is normally detected by a standard dipstick

## Why does this matter:

- Could be a marker of damage to the lining of blood vessels caused by diabetes. It indicates an increased risk of heart attacks and strokes
- It is an early marker of kidney damage due to diabetes
- Early intervention can reduce the risk or delay damage to organs due to diabetes. Appropriate treatment can help people with diabetes live longer and healthier

## Whom to test:

- All people with diabetes aged 18 and above

## Do not test in:

- Pregnant women
- Terminally ill or very frail
- People where it is not appropriate to do so or unlikely to make a clinical difference (use clinical judgement)

## What to test:

- A random urine sample sent to the laboratory
- If the ACR is 70mg/mmol or more, this does not need to be repeated
- If the ACR is 3-69mg/mmol, repeat the test. This time use an early morning sample

## Classification of severity of albuminuria:

- **A1**    <3mg/mmol (normal to mildly elevated)
- **A2**    3-30mg/mmol (moderately increased)
- **A3**    >70mg/mmol (severely increase)

## Testing renal functions:

- Use the table below to work out the frequency of blood tests for creatinine (U&Es)
- For example, if your patient has an ACR of 26mg/mmol (**A2** for albuminuria), and their eGFR is 24 (**G4** in the GFR category), they need their creatinine checked at least twice a year. The number '2' that corresponds to the albuminuria and GFR category signifies the number of blood tests for creatinine recommended per year

| | | ACR categories (mg/mmol), description and range | | |
|---|---|---|---|---|
| | | A1 <3 Normal to mildly increased | A2 3–30 Moderately increased | A3 >30 Severely increased |
| GFR categories (ml/min/1.73 m²), description and range | G1 ≥90 Normal and high | ≤1 | 1 | ≥1 |
| | G2 60–89 Mild reduction related to normal range for a young adult | ≤1 | 1 | ≥1 |
| | G3a 45–59 Mild–moderate reduction | 1 | 1 | 2 |
| | G3b 30–44 Moderate–severe reduction | ≤2 | 2 | ≥2 |
| | G4 15–29 Severe reduction | 2 | 2 | 3 |
| | G5 <15 Kidney failure | 4 | ≥4 | ≥4 |

Increasing risk

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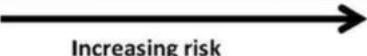
Abbreviations: GFR, glomerular filtration rate, ACR, albumin creatinine ratio

NB: ACR is an important indicator of cardiovascular risk and progression.

Adapted with permission from Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group (2013) KDIGO 2012 clinical practice guideline for the evaluation and management of chronic kidney disease. Kidney International (Suppl. 3): 1–150

(From NICE CKD guideline 182, 2014)

## How to treat:

- You are trying to reduce the risk of cardiovascular problems and the risk of progression of the kidney disease (and other complications)
- Give smoking cessation advice and support
- Aim for HbA1C as close to 7% without causing hypoglycaemia, as clinically appropriate. For example, in a 45-year-old man recently diagnosed to have diabetes who has been well before, it would be reasonable to try and achieve an HbA1C of under 7%. This would not be appropriate or even dangerous in an 80 year old man
- Good blood pressure control (systolic as close to 130 mm Hg with albuminuria), but using the principles above, using sensible clinical judgement
- With albuminuria and hypertension, use and ACE inhibitor (Ramipril, Enalapril etc) or an ARB ('sartans'). Do not use both together
- Do not use and ACE inhibitor/ARB if systolic blood pressure <130 mmHg off antihypertensive agents
- Start Atorvastatin 20mg/day for all patients with an eGFR<60 (use lipid modification guidelines for people with diabetes)

## Be wary of :

- Rapid decline in eGFR (>1ml/min/month)
- Sudden albuminuria
- Refractory hypertension
- Early renal damage in type 1 DM
- Haematuria
- Systemic disease
- >30% reduction in eGFR after starting ACEi/ARB

## Disclaimer:

This guideline is my take on the current CKD guidelines, to help make it as easy as possible for you to use. Please do use your clinical judgement-this should have priority over all guidelines.


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