

## DIETARY MODIFICATION

- A** **Dietary protein restrictions (<0.8 g/kg/day) are not recommended in patients with early stages of chronic kidney disease (stages 1-3).**
- B** **For patients with stage 1-4 CKD and hypertension a reduction in sodium (<2.4 g/day or <100 mmol/day which is equivalent to <6 g of salt) is recommended as part of a comprehensive strategy to lower blood pressure and reduce cardiovascular risk.**
- Salt substitutes that contain high amounts of potassium salts should not be used in patients with CKD.

## LIFESTYLE MODIFICATION

- People with CKD who smoke should be advised to stop and referred to an NHS smoking cessation service if they are motivated to quit.
- People with CKD with a waist circumference  $\geq 94$  cm in men or  $\geq 80$  cm in women should be considered for weight management with the involvement of an appropriately qualified dietitian.
- People with CKD should be encouraged to take regular exercise.
- If patients experience a reduction in exercise capacity which impacts on their daily life, they should have access to an appropriately qualified physiotherapist.
- All patients with CKD who have problems with the activities of daily living should have access to an occupational therapist.

## PSYCHOSOCIAL MANAGEMENT

- Quality of life and psychosocial stressors should be routinely assessed and actively managed psychologically, where indicated.
- B** **The delivery of a psychologically informed, pre-dialysis psychoeducation programme is recommended for all patients with progressive CKD at any stage who will eventually require renal replacement therapy.**

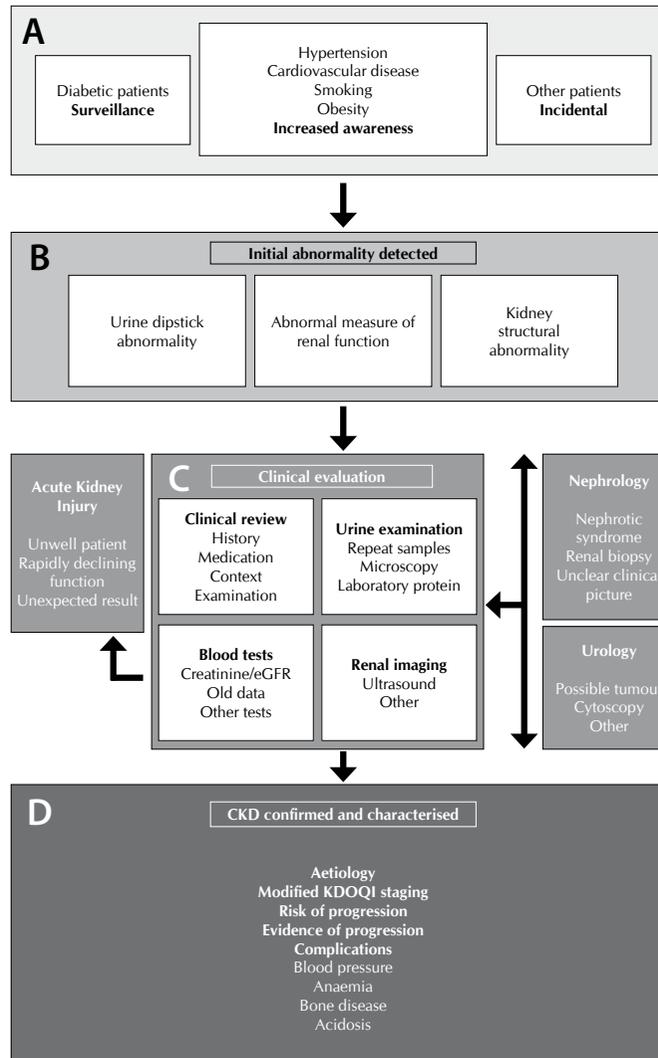
## MANAGEMENT OF ANAEMIA

- A** **Erythropoiesis stimulating agents should be considered in all patients with anaemia of CKD to improve their quality of life.**
- In patients with CKD treated with erythropoiesis stimulating agents the haemoglobin should normally be kept between 100 g/l and 120 g/l.

## PREVENTING MALNUTRITION

- D** **Nutritional status (height, weight, body mass index, percentage weight loss) should be monitored in all patients with chronic kidney disease at stage 3 or higher.**

## ALGORITHM FOR SCREENING ASSESSMENT AND DIAGNOSIS OF PATIENTS WITH CKD



This Quick Reference Guide provides a summary of the main recommendations in the SIGN guideline on **Diagnosis and management of chronic kidney disease**

Recommendations are graded **A B C D** to indicate the strength of the supporting evidence.

Good practice points  are provided where the guideline development group wishes to highlight specific aspects of accepted clinical practice. Details of the evidence supporting these recommendations can be found in the full guideline, available on the SIGN website: [www.sign.ac.uk](http://www.sign.ac.uk)



## RISK FACTORS

The following factors are associated with an increased risk of developing CKD

### Diabetes

**D** All patients with diabetes should have regular surveillance of renal function.

### Cardiovascular disease

Patients who are on antihypertensive or lipid lowering therapy should have renal function assessed at least annually.

### Smoking

**C** Smoking should be considered as a risk factor for the development of CKD.

### Socioeconomic status

**C** Low socioeconomic status should be considered as a risk factor for the development of CKD.

## DETECTING KIDNEY DAMAGE

### PROTEINURIA

Detection of an increase in protein excretion has both diagnostic and prognostic value in the initial detection and confirmation of renal disease.

### Albumin/Creatinine Ratio

**B** In patients with diabetes, albumin/creatinine ratio may be used to exclude diabetic nephropathy.

**C** Albumin/creatinine ratio is recommended for detecting and monitoring diabetic nephropathy.

### Protein/Creatinine Ratio

**B** In patient groups with a high prevalence of proteinuria without diabetes protein/creatinine ratio may be used to exclude CKD.

**D** In patients with established CKD and without diabetes, measurement of protein/creatinine ratio may be used to predict risk of progressive disease.

### Urine dipstick testing

Urine dipstick testing cannot be used reliably in isolation to diagnose the presence or absence of proteinuria.

Dipstick proteinuria ( $\geq 1+$ ) can be used to identify patients at risk of subsequent end-stage renal disease and cardiovascular disease.

## HAEMATURIA

**D** Patients with persisting isolated microscopic haematuria should be initially evaluated for urinary tract infection and malignancy.

## RENAL TRACT ULTRASOUND

Ultrasound is the imaging modality of choice in the evaluation of patients with suspected CKD.

## MEASURING RENAL FUNCTION

**C** Where an assessment of GFR is required prediction equations should be used in preference to 24-hour urine creatinine clearance or serum creatinine alone.

Laboratories should only report a numerical value at estimated GFRs of less than 60 ml/min/1.73 m<sup>2</sup>.

Where accuracy is an overriding consideration, clearance should be measured using a validated standard.

Alterations in drug dosing in patients with reduced renal function should be made on the basis of creatinine clearance as estimated by the Cockcroft-Gault formula.

## CLASSIFYING CKD

The KDOQI classification system should only be used to stage patients with a diagnosis of CKD.

Stage	Description	GFR (ml/min/1.73 m <sup>2</sup> )
1*	Kidney damage with normal or raised GFR	$\geq 90$
2*	Kidney damage with mild decrease in GFR	60-89
3A 3B	Moderately lowered GFR	45-59 30-44
4	Severely lowered GFR	15-29
5	Kidney failure (end-stage renal disease)	< 15

Notes: \*in order to diagnose stages 1 and 2 CKD, additional evidence of kidney damage must be present, eg proteinuria.

If proteinuria ( $> 1$  g per day or  $> 100$  mg/mmol) is present the suffix p should be added.

Patients on dialysis are classified as stage 5D.

The suffix T indicates patients with a functioning renal transplant (can be stages 1-5).

## DRUG TREATMENT

### LOWERING BLOOD PRESSURE

**A** Blood pressure should be controlled to slow the deterioration of GFR and reduce proteinuria. Patients with  $\geq 1$  g/day of proteinuria (approximately equivalent to a protein/creatinine ratio of 100 mg/mmol) should have a target maximum systolic blood pressure of 130 mm Hg.

### REDUCING PROTEINURIA

**A** Patients with CKD and proteinuria should be treated to reduce proteinuria.

### ACE INHIBITORS AND ARBS

**A** Patients with CKD and type 1 diabetes with microalbuminuria should be treated with an ACE inhibitor irrespective of blood pressure.

**A** Patients with CKD and type 2 diabetes with microalbuminuria should be treated with an ACE inhibitor or an ARB irrespective of blood pressure.

**A** ACE inhibitors and ARBs are the agents of choice to reduce proteinuria in patients without diabetes but who have CKD and proteinuria.

**A** ACE inhibitors and/or ARBs should be used as agents of choice in patients (with or without diabetes) with CKD and proteinuria ( $\geq 0.5$  g/day, approximately equivalent to a protein/creatinine ratio of 50 mg/mmol) in order to reduce the rate of progression of CKD.

Potassium and renal function should be checked after commencing and changing the dose of ACE inhibitors and/or ARBs.

### NON-DIHYDROPYRIDINE CALCIUM CHANNEL BLOCKERS

**A** Non-dihydropyridine CCBs should be considered in patients with CKD and proteinuria who are intolerant of ACE inhibitors or ARBs.

### LIPID LOWERING

**B** Statin therapy should be considered in all patients with stage 1-3 CKD, with a predicted 10-year cardiovascular risk  $\geq 20\%$ .

### ANTIPLATELET THERAPY

**B** Low-dose antiplatelet therapy should be considered in all patients with stage 1-3 CKD, whose estimated 10-year cardiovascular risk is  $\geq 20\%$ .