10-MINUTE CONSULTATION

Chronic kidney disease

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PKM planned and wrote the main draft and oversaw submission. MSE is the guarantor. MSE and PRWT helped revise the manuscript.

From the archive: For more about estimation of glomerular filtration rate see Giles and Fitzmaurice *BMJ* 2007;334:1198-1200

This is part of a series of occasional articles on common problems in primary care. The BMJ welcomes contributions from general practitioners to the series

A 68 year old man sees you after you sent him a letter saying that the results of blood tests done over the past year to monitor hypertension show that he has chronic kidney disease (CKD). He is worried, as he thought that high blood pressure was his only medical problem.

What issues you should cover

- Explain the terms CKD and estimated glomerular filtration rate (eGFR). To most patients "kidney disease" means dialysis and shortened life expectancy. Explain that CKD is a spectrum of disease, with mild renal impairment at one end and established renal failure at the other, and that eGFR, a number that is based on the "modification of diet in renal disease" formula, determines the stage of CKD.
- Reassure him that CKD is common (affecting 5-10% of the population, this percentage rising among people aged >70 years). Most people remain well and do not progress to established renal failure but have a higher than normal risk of developing cardiovascular disease. Hypertension is associated with silent development of CKD. Timely identification and optimal management of CKD, including well controlled blood pressure, have been shown to retard its progression. Explain that serial measurement of eGFR will allow you to judge whether his condition is progressing and at what rate.
- Explain that your aims are to ascertain whether there is a correctable cause for the biochemical findings and to limit any damage to his kidneys.

What you should do

- Ask about symptoms of cardiovascular diseases (such as breathlessness, pedal oedema, chest pain, claudication), lower urinary tract symptoms, and compliance with antihypertensive treatment.
- Most patients are asymptomatic, but note any symptoms suggestive of underlying systemic diseases such as vasculitis, lupus, or myeloma.
- Ask about cardiovascular risk factors: smoking status, alcohol consumption, diet, and treatment he is taking, including over the counter drugs (especially non-steroidal anti-inflammatory drugs). Ask about family history of diabetes, cardiovascular disease, hypertension, peripheral vascular disease, and polycystic kidney disease.
- Calculate his serial eGFRs.
- Record his blood pressure and weight and analyse his urine (and culture the sample if the results for nitrites and leucocytes are positive). Assess his fluid status and examine his abdomen for enlarged kidneys or bladder.
- Management will vary according to the stage of CKD—see box.
- Offer him a further consultation to discuss any unanswered questions and concerns. Arrange nutritional support if it is needed, and give lifestyle advice. Refer him to a nephrologist if this is indicated by the UK CKD guidelines (see Useful resources box).

The full version of this article containing a table describing the stages of chronic kidney disease is on on bmj.com

Useful resources

Department of Health. *The national service framework for renal services. Part two: chronic kidney disease, acute renal failure and end of life care.* www.dh.gov.uk/publications

Joint Specialty Committee on Renal Medicine of the Royal College of Physicians of London and the Renal Association. *Chronic kidney disease in adults: UK guidelines for identification, management and referral.* www.renal.org/CKDguide/full/CKDprintedfullguide.pdf

Renal Association's eGFR calculator. www.renal.org/eGFRcalc/GFR.pl

Managing chronic kidney disease

- Stage 1 or 2, and stage 3 with stable function (change in eGFR of <2 ml/min/1.73 m² over six or more months): monitor renal function annually. In cases of progressive stage 3 disease (change in eGFR of >2 ml/min/1.73 m²) monitor six monthly.
- Stage 3: check haemoglobin, potassium, calcium, phosphate, and parathormone concentrations (follow local protocol for parathormone monitoring), and request renal ultrasonography if he has lower urinary tract symptoms, refractory hypertension, or an unexplained progressive fall in his eGFR.
- Stage 4 or 5: refer to secondary care.
- If proteinuria is detected (from an early morning sample), check his urine protein:creatinine ratio and refer him to a nephrologist if the concentration is persistently >100 mg/mmol.
- In the case of a rapidly worsening creatinine concentration (an increase of >50%) or eGFR (a reduction of >25%), ensure that reversible causes have been excluded. A rise of serum creatinine by 20% or fall of eGFR by 15% as an apparent consequence of use of an angiotensin converting enzyme inhibitor (ACEI) or angiotensin receptor blocker (ARB) may be due to atherosclerotic renal artery stenosis, requiring immediate discontinuation of the drug and referral to a nephrologist.
- The threshold blood pressure for starting antihypertensive treatment with an ACEI or ARB should be 140/90 mm Hg. Aim for a pressure of <130/80 mm Hg (125/75 mm Hg if proteinuria is present).
- For patients with a 10 year risk of cardiovascular disease of >20% (according to the Joint British Societies' guidelines on prevention of cardiovascular disease in clinical practice (*Heart* 2005;91(suppl 5):v1-52)), consider treatment with lipid lowering drugs and aspirin—provided that his blood pressure is <150/90 mm Hg.
- Stop use of any nephrotoxic drug.