

# Regular and frequent follow-up of patients with pre-end-stage kidney disease

Date written: September 2005  
 Final submission: September 2006  
 Author: Merlin C Thomas

## GUIDELINES

No recommendations possible based on Level I or II evidence.

## SUGGESTIONS FOR CLINICAL CARE

(Suggestions are based on Level III and IV sources)

Patients who have regular and frequent follow-up have better outcomes. This may reflect the improved efficacy of blood pressure and other interventions. Equally, it may be that patients who participate in regular and frequent follow-up are intrinsically more compliant and satisfied with care, leading to better outcomes regardless of the intervention itself.

Bergström *et al.*<sup>1</sup> set out to test whether frequency of follow-ups could affect the design of randomized trials looking at other interventions to slow the progression of kidney failure (protein restriction, blood pressure control, etc.). In a small prospective study of 17 patients with chronic kidney failure (creatinine clearance 12–66 mL/min), those with more frequent clinical follow-ups had a slower rate of progression to kidney failure. This effect was independent to changes in the dietary intake of protein. The beneficial effect on kidney progression was also correlated with improvements in blood pressure control.

Regular and frequent follow-up are a key component for the management of chronic kidney disease (CKD), and the efficacy of preventive strategies. (Level III evidence).

### How often should a patient with CKD be followed up?

Patients with chronic kidney failure should have regular clinical review performed at least every 3 months from a value of 30 mL/min per 1.73 m<sup>2</sup> and monthly from a glomerular filtration rate (GFR) < 10 mL/min per 1.73 m<sup>2</sup> (Level III–IV, clinical series and anecdotal reports). However, no interval for follow-up should be set in stone. As part of a multidisciplinary approach to patients with kidney impairment, follow-up needs to tailor carefully to individual patient requirements. Some have impaired but stable kidney function in whom long periods of review allows a more conservative approach. Other

patients require close supervision as an opportunity for education, to ensure compliance and to monitor the efficacy and tolerability of interventions. Particular vigilance should be taken with the recalcitrant patient or non-attender. Inevitably they will come to dialysis sooner, often as an emergency requiring temporary access with a greater morbidity and mortality. Units should develop their own pre-emptive strategies for dealing with such cases to minimize the numbers 'lost to follow-up'.

The impact of social inequalities, cultural barriers (especially language) and patient compliance, contributing to access and utilization of nephrology services, should also be considered in developing a structured plan to ensure regular and frequent follow-up, and minimizing non-attendance.

These groups are also those at the highest risk of end-stage kidney disease and other adverse outcomes.

## BACKGROUND

The success of interventions to delay the progression of kidney disease depends heavily on close and accurate monitoring of the patients' status. Patients with kidney impairment require regular review, both to monitor the rate of kidney disease progression, perform and optimize appropriate interventions and allow for the timely initiation of renal replacement therapy (RRT). In addition, the rate of decline in kidney function patients appears to be slowed in patients benefiting from a close follow-up. The objective of this specific guideline was to evaluate the available clinical evidence pertaining to the impact of regular and frequent follow-up in preventing progressive kidney impairment and ultimately end-stage kidney disease.

## SEARCH STRATEGY

**Databases searched:** MeSH terms and text words for CKD were combined with MeSH terms and text words for follow-up and glomerular filtration rate. This was limited to case-control studies, cohort studies and controlled clinical trials. The search was carried out in Medline (1966 to November Week 2, 2004).

**Date of searches:** 11 November 2004.

Correspondence: Associate Professor Merlin C Thomas, NHMRC/Diabetes Australia Research Fellow, Baker Heart Research Institute, St Kilda Road Central, PO Box 6492, Melbourne VIC 8008, Australia. Email: mthomas@baker.edu.au

### WHAT IS THE EVIDENCE?

There have been no randomized controlled trials or meta-analyses.

### SUMMARY OF THE EVIDENCE

There have been no randomized controlled trials or meta-analyses.

### WHAT DO THE OTHER GUIDELINES SAY?

**Kidney Disease Outcomes Quality Initiative:** No recommendation is made about how often patient status should be reviewed.

**UK Renal Association:**<sup>2</sup> Patients with progressive renal insufficiency need careful follow-up and monitoring in an attempt to slow the progression of renal failure when possible. Management of patients with stage 4 or 5 CKD should include three-monthly measurements of serum creatinine concentration and estimated GFR, haemoglobin, calcium, phosphate, potassium, bicarbonate and parathyroid hormone (PTH) concentrations and dietary assessment. All patients with stage 3 CKD should undergo annual measurement of haemoglobin, potassium, calcium and phosphate as well as regular review of all prescribed medication, to ensure appropriate dose adjustments and the avoidance, wherever possible, of nephrotoxic drugs, including non-steroidal anti-inflammatory drug.

**Canadian Society of Nephrology:**<sup>3</sup> Renal function should be measured at least every 3 months using a valid estimate of GFR corrected to a body surface area of 1.73 m<sup>2</sup>. Adequate preparation for dialysis or transplantation (or both) requires

relatively frequent contact with a renal care team. No recommendation is made about how often patient status should be reviewed.

### IMPLEMENTATION AND AUDIT

No recommendation.

### SUGGESTIONS FOR FUTURE RESEARCH

No recommendation.

### CONFLICT OF INTEREST

Merlin Thomas has a Level II b conflict of interest according to the conflict of interest statement set down by CARI.

### REFERENCES

1. Bergström J, Alvestrand A, Bucht H *et al.* Progression of chronic renal failure in man is retarded with more frequent clinical follow-ups and better blood pressure control. *Clin. Nephrol.* 1986; **25**: 1–6.
2. Joint Specialty Committee on Renal Medicine of Royal College of Physicians and the Renal Association and the Royal College of General Practitioners. *Chronic Kidney Disease in Adults: UK Guidelines for Identification, Management and Referral.* London: Royal College of Physicians, 2006 [Cited September 2006.] Available from URL: <http://www.renal.org/CKDguide/full/CKDprintedfullguide.pdf>
3. Mendelssohn DC, Barrett BJ, Brownscombe LM *et al.* Elevated levels of serum creatinine: Recommendations for management and referral. *CMAJ* 1999; **161**: 413–17.