

# Pre-dialysis education for patients with chronic kidney disease

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## GUIDELINES

- a. Pre-end-stage kidney disease (ESKD) education forms an important part of the management strategy to slow the progression of kidney disease and may have an independent beneficial effect. (Level II evidence)
- b. All patients should have access to pre-ESKD training programmes and staff. (Level II evidence)

## SUGGESTIONS FOR CLINICAL CARE

(Suggestions are based on Level III and IV evidence)

Although structured pre-dialysis education programme may be perceived as intrinsically useful by improving the quality of patient satisfaction and compliance, there are relatively few reports in the literature about early pre-ESKD education and its effect on the progression of kidney disease. The available reports largely describe programme innovations and methods and offer only limited evaluative data and recommendations. In addition, many uncontrolled and retrospective studies are confounded by the kinds of patients that elect to participate in education programmes. For example, some studies have suggested patients who engaged in the group activities survived without dialysis considerably longer than non-participants.<sup>1</sup>

- Levin *et al.*<sup>2</sup> reported the results of a multidisciplinary pre-dialysis education programme conducted at St Paul's Hospital, Vancouver. Thirty-seven patients referred to a multidisciplinary clinic-based education were compared with a concurrent cohort of 39 patients who received individualized patient care from a nephrologist. In patients who had participated in pre-dialysis education, there were improvements in control of blood pressure calcium, phosphate and a significant reduction in the need for urgent dialysis (13% vs 35%,  $P < 0.05$ ). These outcomes were also achieved with significant cost-savings.

- In a retrospective review of patients commencing dialysis in a metropolitan New York hospital, Ifuda *et al.*<sup>3</sup> reviewed the outcomes of 139 patients who had been commenced on dialysis between 1990 and 1994, stratified according to whether they had received pre-dialysis care and education from a nephrologist (43% of cohort), non-nephrologist physician (45%) or who had received no pre-dialysis medical care (12%). Patients who had a period of pre-dialysis care by a nephrologist had a significantly reduced rate of decline in creatinine clearance.

- Klang *et al.*<sup>4</sup> prospectively evaluated the effect of a pre-dialysis education programme on functional outcome and

well-being in 28 uraemic patients in a case–control study design. The education programme consisted of group sessions dealing with renal disease, dietary restriction, options for renal replacement therapy, information about physical exercise and information about the social impact of chronic renal failure in individual patients. Patients who participated in the education programme scored significantly better on outcome measures such as mood, functional disability and anxiety and had less mobility problems. These differences were apparent when subjects commenced dialysis and over a 6 month follow-up period on dialysis. However, time to renal replacement therapy (RRT) was not reported, although at follow-up the control group had been on active replacement therapy for significantly more months than the education group.

- Ravani *et al.*<sup>5</sup> prospectively collected information on patient education programmes in 229 patients with chronic kidney disease (CKD). Notably, a planned (non-emergent) start to RRT was more likely in greater among individuals participating in pre-dialysis educational programme. However, this study is also confounded by selection.

There are anecdotal uncontrolled reports that pre-dialysis education prevents temporary dialysis access and improves quality of life indices.<sup>6</sup> Despite the limitations in evaluative data, renal units should be encouraged to develop their own teams and programmes to ensure that all patients are exposed to pre-ESKD education in a structured manner without gaps. (Level III–IV evidence).

## BACKGROUND

Patients and their families or carers should receive sufficient information and education regarding the nature of ESKD, and the options for the treatment to allow them to make an informed decision about the management of their ESKD. There is some evidence that structured pre-dialysis education programmes are effective in facilitating a planned approach to commencement of dialysis and influencing quality of life and outcomes on dialysis. Early education for the pre-ESRD patient has the potential to improve the quality of patient satisfaction and increase cost-effectiveness. These issues have been covered in previously published

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CARI guidelines (acceptance onto dialysis). More recently, evidence has emerged that pre-dialysis education can delay the requirement for dialysis, possibly by fostering the delivery of optimal health care and the efficacy of any intervention to slow the progression to ESKD as well as reducing the requirement for emergent therapy. The objective of this guideline was to evaluate the available clinical evidence pertaining to the impact of pre-dialysis education on renal functional decline in CKD, particularly as it relates to the time to RRT.

## SEARCH STRATEGY

**Databases searched:** MeSH terms and text words for CKD were combined with MeSH terms and text words for patient education and pre-dialysis education. The search was carried out in Medline (1966 to November Week 2, 2004).

**Date of searches:** 8 November 2004.

## WHAT IS THE EVIDENCE?

Three randomized controlled trials (RCT) examining the impact of pre-dialysis education has been performed:

- Binik *et al.*<sup>7</sup> studied the quality of life in 204 pre-ESKD patients with deteriorating renal function. Patients were randomly assigned to either an enhanced or a standard education programme. The enhanced education condition consisted of a specially prepared slide-lecture show concerning kidney diseases and their treatment that was delivered by a trained research assistant. The standard education condition consisted of whatever educational procedures were routinely available at the participating hospital. Individuals in the enhanced education condition survived without dialysis an average of 4.6 months longer than those in the standard education group. This effect was not attributable to physical differences between the groups, to cohort effects, to delays in contacting the patients, or to when or where they were identified.
- Harris *et al.*<sup>8</sup> performed a randomized controlled clinical trial of an intensive, multidisciplinary case management programme in 437 primary care patients with moderate renal impairment followed for 5 years. This intensive, multidisciplinary case management intervention, that included education, had no overall effect on the clinical outcomes of care and was costly.
- Devins *et al.*<sup>9</sup> reported the results of a multicentre RCT in which 297 pre-dialysis patients received either usual care or pre-dialysis psychoeducational intervention (PPI), consisting of a 90 min educational slide presentation which covered aspects of normal kidney function, changes in CKD, information about nutritional and medication treatment of CKD and options for renal replacement therapy. Patients were followed up every 3 weeks by a 10 min phone call, during which illness-related developments were reviewed. Usual care encompassed the usual exchange of information and treatments provided by the patients' renal physicians. Time to dialysis was significantly extended in the PPI group (17.0 vs 14.1 months,  $P < 0001$ ). Knowledge

acquisition predicted time to dialysis treatment and patients in the PPI group demonstrated more illness-related knowledge. Patients whose primary illness coping mechanism was avoidance of threat-related information (blunting) demonstrated a shorter time to dialysis in the usual care treatment group, but PPI extended the time to dialysis in this patient subpopulation.

## SUMMARY OF THE EVIDENCE

Pre-dialysis education appears to delay the time to RRT in patients with CKD. This information comes from selective RCT so should be interpreted with caution. Nonetheless, it is consistent with the many advantages of a comprehensive programme to slow progressive kidney disease.

## WHAT DO THE OTHER GUIDELINES SAY?

**Kidney Disease Outcomes Quality Initiative:** No recommendation.

**UK Renal Association:** No recommendation.

**Canadian Society of Nephrology:** Pre-dialysis education, including information about potential risks, benefits and outcomes, should be provided.

**European Best Practice Guidelines:** No recommendation.

**Canadian Pre-dialysis Education Advisory Board:** A standardized, national core curriculum for pre-dialysis patient education has been developed.<sup>10</sup>

## IMPLEMENTATION AND AUDIT

- 1 All units should be encouraged to develop a pre-dialysis education programme. The participation of patients in pre-dialysis education should be documented, possibly through ANZDATA, the Australia and New Zealand Dialysis and Transplant Registry.
- 2 The participation of patients in pre-dialysis education should be documented.
- 3 Audit target – percentage of patients commencing dialysis that has completed the education programme.

The process of managing the transition of patients from medical therapy onto renal replacement therapy may be facilitated by:

- Maintaining a database which identifies patients with advanced CKD who are approaching kidney replacement therapy, and which provides a mechanism for tracking changes in renal function in these patients
- Initiation of a standardized pre-dialysis education programme for patients nearing the commencement of dialysis, incorporating information about dialysis modalities and dietary and pharmacological interventions required for the management of advanced CKD
- Initiation of standardized protocols for management of patients approaching renal replacement therapy with particular emphasis on timely referral for creation of dialysis access or pre-transplant assessment where relevant

The outcome of these interventions may be assessed by recording:

- The number of patients requiring urgent commencement of dialysis (through ANZDATA registry)
- The number of patients who have a long-term functioning dialysis access at the time dialysis is commenced (through ANZDATA registry)
- A database of pre-dialysis patients recording achieved calcium phosphate product and haemoglobin targets (maintained locally)

#### SUGGESTIONS FOR FUTURE RESEARCH

1 Further controlled prospective studies comparing formal multidisciplinary pre-dialysis education to standard nephrological care are required. In particular, the cost-effectiveness of these programmes and their impact on patient morbidity, mortality and quality of life needs to be established.

2 Register evaluation of effectiveness of education programme.

#### 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. Friend R, Singletary Y, Mendell NR *et al.* Group participation and survival among patients with end-stage renal disease. *Am. J. Public Health* 1986; **76**: 670–72.
2. Levin A, Lewis M, Mortiboy P *et al.* Multidisciplinary predialysis programmes: Quantification and limitations of their impact of patient outcomes in two Canadian settings. *Am. J. Kidney Dis.* 1997; **29**: 533–40.
3. Ifuda O, Dawood M, Homel P *et al.* Excess morbidity in patients starting uremia therapy without prior care by a nephrologist. *Am. J. Kidney Dis.* 1996; **8**: 841–5.
4. Klang B, Bjorvell H, Berglund J *et al.* Predialysis patient education: Effects on functioning and well-being in uraemic patients. *J. Adv. Nurs.* 1998; **28**: 36–44.
5. Ravani P, Marinangeli G, Stacchiotti L *et al.* Structured pre-dialysis programs: More than just timely referral? *J. Nephrol.* 2003; **16**: 862–9.
6. Hayslip DM, Suttle CD. Pre-ESRD patient education: A review of the literature. *Adv. Ren. Replace. Ther.* 1995; **2**: 217–26.
7. Binik YM, Devins GM, Barre PE *et al.* Live and learn: Patient education delays the need to initiate renal replacement therapy in end-stage renal disease. *J. Nerv. Ment. Dis.* 1993; **181**: 371–6.
8. Harris LE, Luft FC, Rudy DW *et al.* Effects of multidisciplinary case management in patients with chronic renal insufficiency. *Am. J. Med.* 1998; **105**: 464–71.
9. Devins GM, Mendelsohn DC, Barre PE *et al.* Predialysis psychoeducational intervention and coping styles influence time to dialysis in chronic kidney disease. *Am. J. Kidney Dis.* 2003; **42**: 693–703.
10. Porter E. Pre-dialysis: Initiatives in Canada. *Nephrol. News Issues* 1998; **12**: 15–16.