



Chronic Kidney Disease Education

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Goals

- Understand potential benefits of a CKD education program.
- Learn subjects that should be included in curriculum for a CKD education program.
- Learn essential elements in running a CKD education program.

Introduction

- ⇒ Dialysis patients have very high mortality
- ⇒ Patients with CKD have increased mortality too
- ⇒ It is conceivable that better pre-dialysis medical care could improve outcomes of patients both before and after initiation of dialysis
 - ⇒ e.g. 75% of patients initiating dialysis have evidence of LVH
 - ⇒ In 2007 only 14.5% of dialysis patients had a functioning AVF and another 16.7% had a maturing AVF ¹.

Patients with kidney disease are at increased risk of dying even before they start dialysis. High dialysis related mortality is related to dialysis related risk factors but may also be related to care received before initiation of dialysis. For example 75% of dialysis patients have left ventricular hypertrophy and a minority initiate dialysis with a functioning AVF. To the extent that these two factors may be modifiable risk factors, better pre-dialysis care may improve the survival of dialysis patients.

Goals of a CKD Program

- Identify cause of CKD
- Slow progression of CKD
- Address and treat secondary complications of CKD
- Educate patients on options for renal replacement therapy (RRT)
- Help patient select appropriate RRT
- Plan for transition to RRT – AVOID emergent starts
 - Pre-emptive renal transplant
 - Dialysis access planning
 - Potential for pre-dialysis self care dialysis training and education

CKD education is an essential element of a robust CKD program which will be the focus of this talk.

Potential Benefits and Outcomes of a CKD Education Program^{2,3}

- Decrease hospitalization during CKD and dialysis periods
- Decrease mortality
- Prolong time before requiring initiation of RRT
- Decrease emergent dialysis starts
 - Better volume control
 - Less hyperkalemia
- Increase utilization of home dialysis modalities (peritoneal dialysis and home hemodialysis).
- Increase use of permanent dialysis access at time of initiation of RRT
- Maintain or improve nutritional status
- Maintain employment
- Maintain insurance coverage

There are many potential benefits of CKD education. Some criticisms of current literature examining benefits of CKD education include: selection bias, and limited long term follow-up. Nevertheless, a multidisciplinary approach gives the patient opportunity to learn more about disease and be pro-active in planning for the future. As an example: Consultation with a social worker may help patient maintain or obtain medical insurance even if not able to work. Social work might also help patient and family take a leave of absence form work during the transition to dialysis.

CKD education program content

- Standardized curriculum
- Appropriate printed educational material to compliment didactic sessions
- Educational DVD's and/or links to videos on internet
- Access to dialysis facility to review equipment and basic procedures
- Access to patients on RRT to get patient perspective on benefits of different options

It is important to have a standard curriculum with adjuvant materials. Most patients don't retain all presented material and prefer to have references at home. Furthermore, patients learn in different ways and therefore it is important to utilize different instructional mediums.

CKD Education Curriculum

- Overview of normal function of kidneys
- Overview of CKD
- Diet
- Blood pressure control
- Cardiovascular risk
- Anemia
- Phosphorous, calcium and PTH

Suggested topics that are appropriate are listed. The topics listed should be addressed in a series of sessions

CKD Education Curriculum (con't)

- Transplantation
- Access planning
- Dialysis options
 - Home based therapies
 - Peritoneal dialysis
 - Home hemodialysis
 - In-center hemodialysis
 - Conventional
 - Nocturnal
- Appropriate candidates for dialysis
- Withdrawal of care

Some patients are concerned that they will suffer on dialysis and therefore elect not to initiate dialysis. It is appropriate to discuss what patients can expect from dialysis as well as option to withdraw from dialysis if they feel they do not have reasonable quality of life.

Implementation

- **Staff**
 - Medical: Physician, NP, PA, clinical nurse specialist
 - Non medical professional educator
- **Venue**
 - Physician office (waiting room, conference rooms)
 - Hospital outpatient facility
 - Skilled Nursing facility
 - Rehab facility
- **Recruitment**
 - Physician practice
 - Referring physicians (Internal medicine, primary care, endocrinology, cardiology)
 - Local civic groups

Finance 4,5

- Effective 1/1/2010 CMS will pay for Kidney Disease Education (KDE)
- Purpose: Provide comprehensive information regarding
 - management of co-morbidities including for the purpose of delaying the need for dialysis
 - Prevention of uremic complications
 - Each option for renal replacement therapy (including hemodialysis and peritoneal dialysis, at home and in-facility, dialysis access options, and transplantation)
- Coverage
 - Stage 4 CKD
 - 6 sessions of KDE per lifetime
 - Individual: one hour per session (G0420)
 - Group (2-20): one hour per patient per hour (G0421)
- Provider
 - Physician, physician assistant, nurse practitioner, clinical nurse specialist

Quality Assurance

- Audit
 - Utilization
 - Frequency of urgent initiation of dialysis
 - Access status at initiation of dialysis
 - Modality utilization
 - Lab quality outcomes
 - Survival data
 - Hospitalization data

To measure impact and effectiveness of the CKD education program it is important to track various quality indicators. An electronic information facilitates data acquisition.

Question #1:

- Plan a multiple session curriculum for CKD education.



Answer #1

- Session 1:
 - Overview of normal kidney function and CKD
 - Diet

Many patients don't understand role of kidneys and therefore don't understand why changes in lifestyle and diet are required. Patients are probably most interested in diet. However, it isn't sufficient to instruct what they can't eat; patients want to know what they can eat i.e. appropriate substitutions in their diet.

Depending on amount of detail allotted for each topic , material can be covered in more or less sessions.

Answer #1, con't

- Session 2
 - Management of complications of CKD
 - Blood pressure control
 - Cardiovascular risk
 - Anemia
 - Calcium, phosphate and PTH

Answer #1, con't

- Session 3
 - Modality Selection – “Which therapy is right for you?”
 - Home based therapies: peritoneal dialysis and home hemodialysis.
 - In-center dialysis: conventional and nocturnal
 - Appropriateness of dialysis - “Will dialysis help you?”
 - End of life care – “You can stop dialysis”

Question #2

- State reasonable goals that you have for your CKD education program.



Answer #2

- It would be reasonable to start simple and measure what per cent of your CKD patients attend a CKD education program as well as percentage of your dialysis patients start dialysis emergently versus electively; with or without permanent access. Another good measure of impact of CKD education program is percentage of patients who utilize a home dialysis modality.

References

- 1) Center for Medicare and Medicaid Services; CMS Manual System; Pub 100-04 Medicare Claim Processing, Transmittal 1876, Change Request 6557, December 18, 2009.
- 2) Thomas MC, Pre-dialysis education for patients with chronic kidney disease. *Nephrology* 12:S46-48, 2007.
- 3) Van Biesen, et al, *Nephrol Dial Transplant* 24:3277-3279, 2009
- 4) Renal Disease in the United States, National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD, 2009
- 5) Coverage of Kidney Disease Patient Education Services, MLN Matters® Number: MM6557.