Abstract

While this session is designed as an introduction and general overview of the content and accessibility of the newly revised CKD Education Modules, the primary focus will be on the value and utility of this education resource for the dialysis patient care technician in every day practice.

What it Means to You!

www.prolibraries.com/anna/?select=sessionlist&conferenceID=66
CKD Module 1

Objectives

- Describe the intent of this educational tool and how to access it.
- List the modules specific to dialysis theory and patient care.

Guidelines for Management of CKD
International and National Clinical Practice Guidelines
Patient counts, by modality

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Incident & December 31, 2011 point prevalent ESRD patients. CMS Annual Facility Survey.


Chronic Kidney Disease: What Every Nurse Caring for the CKD Patient Should Know!

These modules are dedicated to the memory of Sally Burrows-Hudson, MSN, RN, CNN – a past-president of the American Nephrology Nurses’ Association (ANNA) and a fierce proponent of continuing education for all nurses.
Chronic Kidney Disease: What Every Nurse Caring for the CKD Patient Should Know!

1. Introduction to Chronic Kidney Disease: An Overview of Causes, Staging, and Treatment
2. Chronic Kidney Disease - Stages 1 through 3
3. Chronic Kidney Disease - Stages 4 and 5: Overview of Therapy Options
4. Kidney Replacement Therapy – Transplantation
5. Kidney Replacement Therapy – Self-Care Dialysis
6. Kidney Replacement Therapy – Assisted Dialysis
7. Chronic Kidney Disease in the Pediatric Population

Objectives

The learner will be able to:
1. Define chronic kidney disease (CKD) and list the major causes.
2. List and describe the stages of CKD from onset to end stage renal disease (ESRD).
3. Describe the major complications of CKD and treatment options.

Brief Review of Anatomy & Physiology of Kidney

The kidneys are:
- highly vascular organs weighing approximately 120-160 g (4-5 oz) each (adult)
- located retroperitoneally - L slightly higher than R
- one or more renal arteries
Brief Review of Anatomy & Physiology of Kidney

- 20 to 25% of the cardiac output of oxygenated blood
- Each kidney contains approximately one million nephrons
- Glomerulus – a vascular complex of capillaries

Chronic Kidney Disease: What Every Nurse Caring for the CKD Patient Should Know

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The American Nephrology Nurses' Association (ANNA)
Objectives

The learner will be able to:

1. Explain why kidney transplantation has the best patient outcomes for the suitable CKD 5 patient.
2. List the different types of kidney donors.
3. Discuss the kidney transplant evaluation process.
4. Describe the surgical and postoperative procedure for both living donor and recipient.
5. Outline the long-term treatment for recipient.

Brief History of Kidney Transplantation

- first successful kidney transplant was performed in 1954 – identical twins
- prior attempts unsuccessful due to organ rejection
- tissue typing/matching research on immune response and rejection
- Medawar & colleagues awarded Nobel Prize in 1960
- immunosuppressant medications

Surgical Procedures for Living Donor Transplantation

- laparoscopic donor nephrectomy
- recipient graft placement

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7. Chronic Kidney Disease in the Pediatric Population

Objectives

The learner will be able to:
1. Define self-care dialysis and list self-care treatment options.
2. Describe basic principles and process of self-care dialysis options.
3. Discuss modality selection, patient education, and nursing care.
Defining Self-Care

- “The patient should be informed about all treatment modalities and settings, including but not limited to, transplantation, home dialysis modalities (home hemodialysis, continuous ambulatory peritoneal dialysis, continuous cycling peritoneal dialysis), and in-facility hemodialysis.”
- “Self-dialysis” means dialysis performed with little or no professional assistance by an ESRD patient or helper who has completed an appropriate course of training.”

Federal Regulations for the Medicare ESRD program of 2008

Chronic Kidney Disease: What Every Nurse Caring for the CKD Patient Should Know

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Objectives

1. Describe a basic plan of care for the end stage renal disease (ESRD) patient undergoing in-center hemodialysis.
2. Explain the care of a patient during the intradialytic period.
3. Discuss the interdialytic care of hospitalized/long-term care setting HD patients.
4. Outline the self-care that the nurse needs to teach the outpatient HD patient and family.
5. Discuss assisted peritoneal dialysis.

Overview of Assisted Hemodialysis Care

In-center, 3 days per week, for 4 hours per treatment!
Overview: Assisted Hemodialysis Care

- Blood passes through the dialyzer where waste products and extra fluid are removed

Key Principles of Assisted Dialysis

- Volume status - assessment and management
- Nutrition support - guidelines and goals
- Medication considerations
- Vascular access management
- Blood pressure management

Vascular Access Management

- Blood is removed for filtration and returned to the patient through the vascular access continuously during hemodialysis
- Three types of vascular access created to "access" the blood during hemodialysis
  - Arteriovenous fistula (AVF)
  - Arteriovenous graft (AVG)
  - Catheter (venous) (CVC)
Complications: AVF and AVG Issues
- stenosis
  - infiltration and hematoma formation during HD, secondary to improper cannulation technique
  - may lead to thrombosis
- aneurysmal dilation due to vessel trauma from frequent needle punctures
- steal syndrome due to ischemia of distal extremity
- high-output, congestive heart failure from large AVF
- infection

Complications: CVC Issues
- infection:
  - bacteremia
  - exit site
  - tunnel infection
- malfunction due to mechanical causes:
  - poor placement technique
  - retraction with or without exposure of the cuff
  - cracked hub or broken clamps
  - thrombosis/fibrin sheath formation
- central vein stenosis

Components of Hemodialysis
- dialyzer
- dialysate/dialysis bath
- dialysis machine
- water treatment
Routine Treatment

Patient preparation:
- assessment
- vascular access care
- infection control

Routine Care for the Stable Hemodialysis Patient Interdiallytically

- vascular access:
  - fistula or graft: hemostasis; positive bruit and thrill; type of dressing
  - catheter: exit site condition, dressing change, and end caps secure
- vital signs
  - BP: non-fistula/graft arm
  - temperature

Complications: Hypotension

Most common cause is removing too much fluid or removing fluid too quickly

Other potential causes:
- inaccurate pre-dialysis weight
- pre-dialysis volume depletion
- eating/drinking during dialysis
- hemorrhage from vascular access
- anemia
- antihypertensives
- heart disease
Patient Education

Safety during and post dialysis:

- bleeding from access
- hand hygiene
- catheter infection prevention
- fall prevention

Assisted Peritoneal Dialysis

- usually a home, self-care therapy but may be an assisted therapy in hospital or long-term care facility
- in hospital for acute care
- in long term care and unable to do self-care
- see Module 5 for more detailed information on PD

What it Means to You!

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Case Studies

Module 3: Care Study

Mr. Perez is a 55-year-old Hispanic male who works as a medical assistant in a doctor’s office. He has a history of being a heavy smoker and has a family history of kidney disease. His blood pressure has been consistently elevated, and he has been prescribed medications to control it. His latest lab results show:

- Hemoglobin: 10.2 g/dL (normal range 13.5-17 g/dL)
- Creatinine: 1.5 mg/dL (normal range 0.6-1.2 mg/dL)
- Blood pressure: 150/90 mmHg (normal range 90/60 mmHg)

His diagnosis was hypertension, and he was started on an ACE inhibitor and a beta-blocker. His nephrologist recommended lifestyle modifications, including a salt-restricted diet and increased physical activity.

Post-test Questions

1. The leading cause of kidney failure in the pediatric population is:
   a. congenital nephrotic syndrome
   b. diabetes
   c. genetic factors
   d. sepsis

2. The majority of children with kidney failure receive:
   a. continuous renal replacement therapy
   b. hemodialysis
   c. peritoneal dialysis
   d. transplantation
References and Resources

References and Resources: Module 7 – Chronic Kidney Disease in the Pediatric Population.
ANNA Contact Form: https://www.anna-net.org/anna/Services/ContactUsForm.aspx

CKD Module Key Terms

GLOSSARY

• ABBR= A group of slang used to treat high blood pressure and heart failure. It is administered by a specific pump and is an effective treatment option for patients who are not able to take traditional treatments like medication and diet. It is a type of drug that helps to control blood pressure and reduce the risk of developing a heart attack.

• ADH: The Association of the Advancement of Medical Instrumentation. The organization sets the standards and recommended practice for medical instruments, devices, and equipment, including diagnostic equipment, monitoring equipment, and medical devices. It is committed to improving the quality and safety of medical care.

• Advanced practice registered nurse (APRN): A nurse who has completed an accredited graduate nurse education program and is licensed to practice as a nurse in one of several advanced practice nurse roles. APRN must also complete additional education in an area of specialty, pass a national certification examination that measures the APRN’s knowledge and skills, complete continuing education requirements, maintain advanced practice competence as outlined by certification, and is licensed to practice as an APRN. (Adapted from ANNA Magazine, 2003.)

Thanks to All!

• You can email me at lesleydinwiddie@gmail.com