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FACULTY OF NURSING

End Stage Renal Failure



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OVERVIEW

- End stage renal disease (ESRD) occurs when the kidneys are functioning at a level of 10 percent or less.
- ESRD is a permanent condition that occurs at the final stage of chronic kidney disease (CKD).
 - CKD is divided into 5 stages: Stage 5 is the last stage
 - GFR (glomerular filtration rate) is less than 60 ml/min for more than 3 months
 - 20 million Americans have diagnosed CKD and 20 million more are at an increased risk
- Patient is unable to continue living without dialysis or a kidney transplant.

FUNCTIONS OF KIDNEY

- ◉ Controls blood pressure
- ◉ Controls fluid balance
- ◉ Maintain homeostasis:
 - Regulates blood pressure and electrolytes, maintenance of acid-base balance
- ◉ Production of hormones
 - Calcitriol, renin, erythropoietin
- ◉ Production of red blood cells
- ◉ Reabsorption of water, glucose, and amino acids
- ◉ Removes waste from blood
- ◉ Removes waste via urine
 - Excretes waste such as urea and ammonium

COMMON CAUSES

◉ Most common

- Diabetes Mellitus (46%)
- High blood pressure (27.2%)

◉ Other Causes

- Congenital abnormalities
- Reactions to medications
- Injuries
 - Trauma to kidneys
 - Major loss of blood

SIGN/SYMPTOMS

- ◉ Excessive thirst
- ◉ Fatigue
- ◉ Drowsiness
- ◉ Confusion
- ◉ Headaches
- ◉ Difficulty concentrating
- ◉ Weight loss/Loss of appetite
- ◉ Muscle twitching
- ◉ Bruise easily
- ◉ Edema in hands and feet
- ◉ Numbness in extremities
- ◉ Nose bleeds
- ◉ Bone pain
- ◉ Nausea/Vomiting

TREATMENT

- ◉ Dialysis or kidney transplant are the only treatments for ESRD
- ◉ Dialysis
 - Too much waste in the body
 - 2 Types
 - Hemodialysis - Blood circulates through a machine
 - Enters and exits the body through a “gortex graft” or “cimino fistula”
 - Peritoneal dialysis - Places fluid in stomach to remove waste via catheter
 - Lab test results
 - Severity of symptoms
 - Patient readiness
- ◉ Medications
 - ACE inhibitors
 - Angiotensin receptor blocker
 - High blood pressure medication

- Changes in diet

- Low - protein diet

- Limit:

- Fluids

- Salt

- Potassium

- Phosphorous

- Electrolytes

- Other treatments

- Anemia

- Increase iron intake

- Phosphate binders

- Prohibit elevation of phosphorous levels

- Increase calcium and vitamin D

LAB TEST PERFORMED

- ◉ Creatinine (10-12 cc/minute level)
 - ◉ BUN (Blood urea nitrogen)

 - ◉ Potassium
 - ◉ Sodium
 - ◉ Albumin
 - ◉ Phosphorous
 - ◉ Calcium
 - ◉ Cholesterol
 - ◉ Magnesium
 - ◉ Complete blood count (CBC)
 - ◉ Electrolytes
- * Labs must be drawn regularly if patient is prescribed dialysis

EXERCISE

- ⊙ 45% of ESRD are diabetic and inactive
 - Low functioning capacity
- ⊙ Average peak oxygen consumption is 20 $\text{ml}\cdot\text{kg}^{-1}\cdot\text{min}^{-1}$
 - Very light intensity
- ⊙ Increased leg fatigue

BENEFITS OF EXERCISE

- Goal of exercise: Improve or maintain exercise capacity
 - Challenged by daily tasks of living
 - Resistance and aerobic exercise training to increase
- Improves blood pressure control

THANK YOU