Social Issues and ESRD Management

Education #5

- People on dialysis can find it challenging to schedule their life around dialysis.
- But many people find that keeping a job and allotting vacation time are great ways to get out and enjoy life.
- You do not have to quit work when you are on dialysis. Whichever dialysis modality you choose, you can schedule dialysis around your work.
- Travel is also doable if you make sure to plan before you head out.

The impact dialysis can have on life….

- Despite being on dialysis, many people continue to work full time or part-time

- Many dialysis patients have very active family lives and can participate as usual with their children or family members

- Traveling can be arranged with advanced planning
- Certain medications that you were taking before dialysis may need to be changed or dosages changed
- Other medications maybe added once you start dialysis.

Dialysis time commitment

- In-center hemodialysis-actual time in treatment is 3 times a week, for 3-4 hours each treatment
- In-center Nocturnal hemodialysis-receive treatment 3 times a week for 6-8 hour intervals, while you sleep
- Home Hemodialysis-dialyze on your schedule, usually 5 times a week for 2 hours
- Home Peritoneal dialysis-dialyze on your schedule, either during the day or while sleeping

Possible treatment complications during dialysis

- **Hypotension** (low blood pressure)-caused by removing fluid from the body
- Possible causes:
  - large fluid weight gains between treatments
  - Short dialysis treatment
  - In accurate estimated dry weight
  - Anemia
  - Eating during treatment
  - Existing heart dysfunction and arrhythmias (atrial fibrillation)

Possible complications during treatment

Muscle cramps

- Possible causes:
  - Low blood pressure
  - Low blood volume (below estimated dry weight)
  - Attempt to remove large fluid gains
  - Unequal level of electrolytes

Ways to prevent cramping

- Limit salt intake in diet
- Estimated dry weight adjustment
- Treat anemia
- Take blood pressure medications after dialysis
- Extend length of dialysis treatment
- Stretching exercises
- Medications

Nausea & Vomiting

- **Causes**
- low blood pressure
- Gastropareasis (common in diabetics)
- Infections
- Dialysis solution- solutions high in sodium or calcium

- **Prevention**
- Avoidance of low blood pressure
- Gastroparesis treatment (Metoclopramide)

Headache

- **Causes-unknown specific causes, but could be…**
  - Low blood pressure
  - Caffeine withdrawal
  - Dehydration
  - Dialyzer reaction
  - Other medical emergency
- **Prevention**
  - Tylenol
  - Adjust dialysis solution
  - Reduce filtration rate of dialysis

Itching

Causes

- Sensitivity to dialyzer
- Sitting for prolonged periods
- High phosphorus or PTH levels
- Dry skin

Prevention/treatment

- Change dialyzer
- Use of blankets/sheets to line the chair
- Controlled phosphorus and PTH levels
- Skin cream/lotions

Infection

- Infection of temporary central venous hemodialysis catheter
- Infection of AV fistula or graft
- Infection of Peritoneal dialysis catheter

- Review with dialysis team how to prevent these types of access infections!

Fluid Restrictions

- Fluid restrictions depends on what type of dialysis you choose and if you have remaining kidney function
- Usual fluid restriction ranges from 32 oz a day to 1.5 liters a day
- Physical activity can also determine how much fluid you should drink

Phosphorus Restrictions

- Foods high in phosphorus are limited for those on dialysis
- Dialysis removes only a small amount of phosphorus from the blood
- Unless the amount of phosphorus in the diet is limited, and medicines called phosphorus binders are taken regularly, phosphorus levels can get too high
- phosphorus levels should be 3.0 to 5.5 mg/dL range

- Increased phosphorus levels can increase the risk of developing complications such as:
  - itching
  - weak and brittle bones
  - calcium deposits in blood vessels and organs including the heart and lungs

- Phosphorus is found in almost all foods
- High-protein foods, dairy products, nuts, seeds, dried beans and peas, chocolate, colas and whole grain foods contain the highest amounts

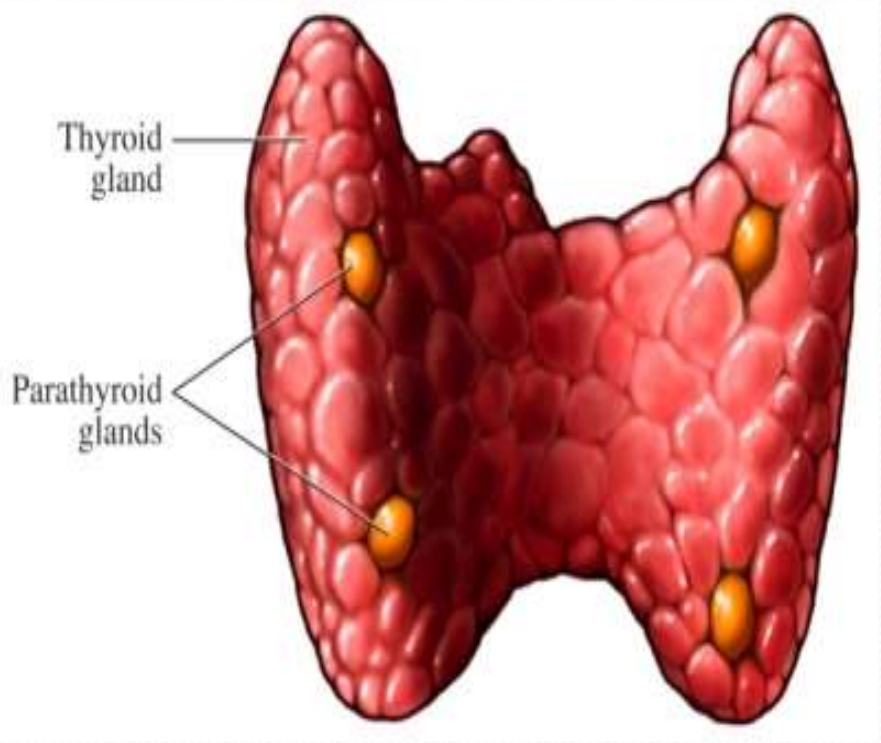
Sodium (Salt) Restriction

- A low sodium diet is typically 2000mg
- A low sodium diet will help with blood pressure control
- It will also help you control thirst and fluid intake
- Controlling sodium intake will help avoid cramping and blood pressure drops during dialysis
- Your dietitian will determine the amount of sodium you can eat each day
- You will be counseled on sources of sodium and appropriate substitutions for your diet

Hyperparathyroidism

- **PTH** stands for **p**ara**t**hyroid **h**ormone, and is made by your parathyroid glands, located behind the thyroid gland in your neck.
- There are several reasons why an increase in PTH is common with kidney failure
- As blood phosphorus levels rise, so do PTH levels
- Second, the diseased kidney cannot activate vitamin D

- Without activated vitamin D, calcium cannot be absorbed from your intestines into your blood
- When the blood calcium level drops, the parathyroids respond by producing more PTH.
- Hyperparathyroidism (an enlargement of the glands) often develops.
- Then, even more PTH is produced.



Potassium Restriction

- Potassium-rich foods are limited for those on dialysis because potassium builds up between dialysis treatments and can cause problems such as weakness, muscle cramps, tiredness, irregular heartbeat and, worst of all, heart attack
- Potassium is found mostly in fruits, vegetables and dairy products. Certain fruits and vegetables are very high in potassium while others are lower
- Be aware that most foods contain some potassium — meat, poultry, bread, pasta — so it can add up

Calcium

- Kidney disease and dialysis causes imbalances in bone metabolism and increases the risk of a type of bone disease called renal osteodystrophy
- These imbalances can cause calcium to deposit in the blood vessels and contribute to heart disease
- Your healthcare provided will measure and evaluate calcium, phosphorus and PTH levels while on dialysis

Protein Needs

- Dialysis treatments remove protein waste from the blood
- A low protein diet is no longer needed to control protein waste buildup since this is accomplished by dialysis
- A higher protein intake is needed to replace dialysis protein lost and to help keep you well nourished and healthy.
- Your dietitian will coach you on an eating plan designed to provide enough protein to meet your individual requirements
- This added protein will ensure you won't lose muscle mass and that your body will have the resources to help fight infection

Morbidity & Mortality

- CKD and ESRD is associated with a very high morbidity and hospitalization rate, due to existing conditions, such as hypertension, coronary artery disease, and peripheral vascular disease.
- The rate of hospitalization and hospital days is 3 times greater than the general public
- The **first-year** mortality rate of patients on dialysis is **9.4%**, the **second-year** mortality rate is **32.3%**, and the **5-year** mortality rate is **60.8%.** In contrast, **diabetic ESRD** patients have a **first-year mortality rate of 23%.**

- In people with ESRD, heart disease, which is followed by sepsis and cerebrovascular disease, is the main cause of death
- The dialysis population in the United States has a **10- to 20-fold higher risk of death** due to cardiovascular complications than the general population

Possible symptoms of uremia

- **Neurological**-cognitive impairment, personality change, muscle spasms, seizures (rare)
- **Gastrointestinal**-nausea, vomiting, food distaste , loss of appetite, fill up easily
- **Blood**-anemia due to erythropoetin deficiency, easy bruising and bleeding due to abnormal platelets
- **Pulmonary**-fluid in the lungs, with breathing difficulties
- **Cardiovascular**-chest pain due to inflammation of the sac surrounding the heart (pericarditis), chest pain or pressure
- **Skin**-generalized itching from high phosphorus levels
- **Fatigue**-extremely tired and loss of energy
- **Insomnia**-despite fatigue, unable to rest or get good sleep
- **Edema**-increased swelling of legs, or any place in the body