

Care of an End Stage Renal Disease Patient



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Objectives



Provide an overview of:

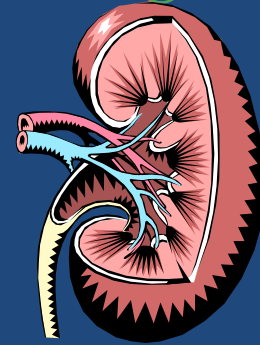
- Dialysis Basics
 - Vascular Access Basics
 - Renal Diet
 - Basic Labs
 - Medications
 - Coordination of Care
 - Emergency Considerations

Dialysis Basics



The kidneys are bean shaped, multifunctional organs.
Kidney Functions include:

- Removing waste products and excess water
- Produces erythropoietin which stimulates the bone marrow to produce red blood cells
- Produces renin which regulates blood pressure
- Produces calcitriol, the active form of vitamin D, which helps maintain calcium balance in the body for both bones and for normal chemical balance



Dialysis Basics cont



There are 410,000 patients on dialysis according to the USDR report 2012

- Chronic Kidney Disease (CKD) is a progressive degeneration of kidney function with 5 stages
- Causes of CKD include:
 - Hypertension 30%
 - Diabetes 35%
 - Kidney Diseases i.e. polycystic kidney disease
 - Medications: NSAIDS, antibiotics

Dialysis Basics cont



When CKD reaches stage 5 or End Stage Renal Disease (ESRD) then dialysis is required.

It varies by individual, but dialysis is normally needed by the time the kidneys are functioning at 20% of normal capacity.

Dialysis Basics cont



Dialysis modalities include:

Traditional in-center hemodialysis, treatments run anywhere from 2.5 hours to 5.5 hours, usually three days a week

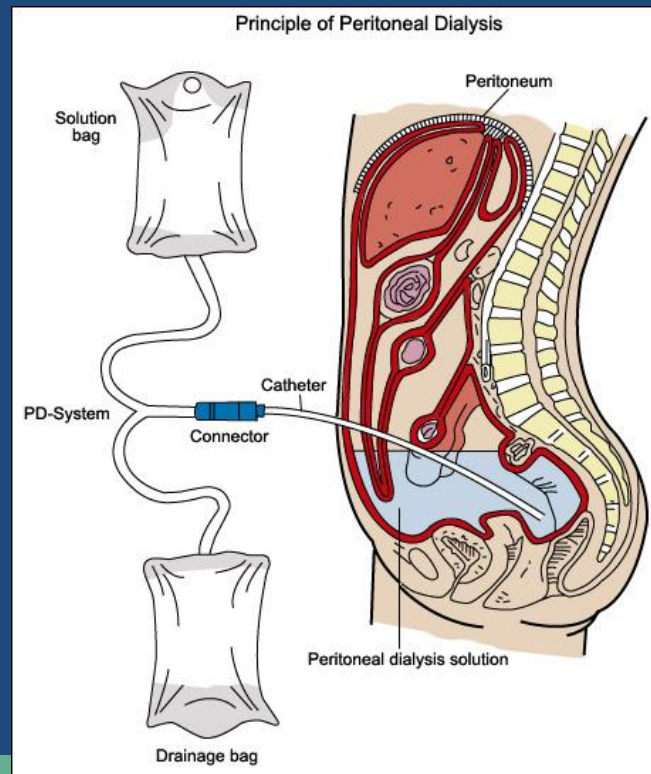


Nocturnal in-center hemodialysis, treatments run 6-8 hours overnight usually three days a week

Dialysis Basics cont



Peritoneal Dialysis: specialized fluid is placed in the peritoneal cavity four to six exchanges a day with by gravity or with a cycler



Dialysis Basics cont



Home Hemodialysis, treatments run at home with a machine like the in-center machine 5-7 times a week, a care partner is usually required for this modality



These are two examples of at-home machines



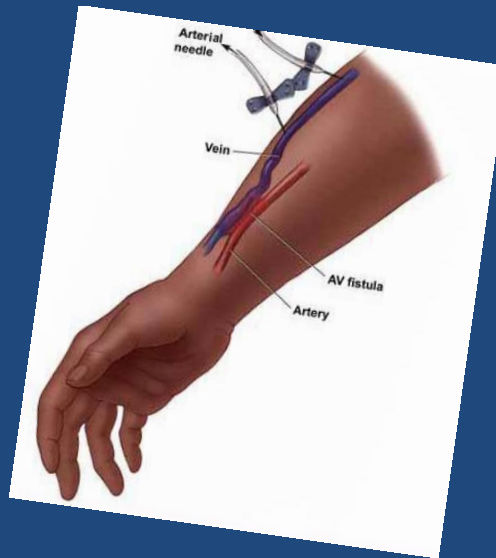
Vascular Access Basics



Three basic access types-

(for in-center or home hemodialysis)

Arteriovenous fistula- preferred access type, requires day-surgery usually and maturation time



Vascular Access Basics cont



Arteriovenous graft- requires day-surgery usually and is prone to replacement every couple of years

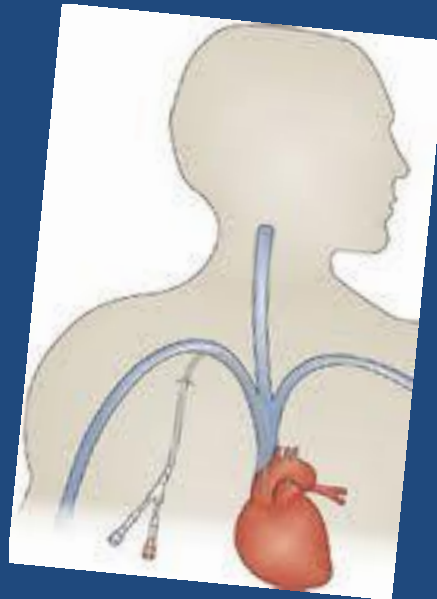


Vascular Access Basics cont



Central Venous Catheter (CVC)-

Fastest application with immediate use, highly prone to infections, catheter end is located directly into the heart



Vascular Access Basics cont



Save their Life Line

Do not use the “access arm” to take blood pressures or to draw blood.

Do remove soiled bandages as needed to wash the fistula or graft site with soap and water and replace the dressing.

Do not change the CVC dressings unless visibly soiled, then use sterile technique.

Do report signs of infection or prolonged bleeding to the dialysis facility as soon as possible.

Do protect other potential access sites for future use

Renal Diet



Dietary restrictions will vary depending on the type of dialysis and of course the individual patient.

Feel free to contact and work with the dialysis facility's registered dietician for the exact diet for your patient.

Fluid restriction is very important since the kidneys can no longer remove any excess fluid.

In center hemodialysis is the most dietarily restrictive.

Renal Diet cont



Fluid restriction is the most difficult aspect
for a majority of patients

The most obvious is do not allow patients to drink a lot of
fluids. (That is easy, right?)

Restricting the sodium in their diets is recommended to
reduce thirst.

A good resource is a short new movie about fluid and dialysis
It is available @ this website:
www.esrdnet15.org/treatmnt.htm#fluid

Renal Diet cont.



Issues that result from fluid overload

- High blood pressure
- Sudden drop to low blood pressure during dialysis
- Shortness of breath
- Cardiac issues:
 1. Fast pulse
 2. Weakened muscles
 3. Cardiomyopathy

Renal Diet cont



Potassium levels need to be regulated to a lab value of- 3.5 - 5.5 mg/dL

Hyperkalemia (high potassium) symptoms include:

- Arrhythmias
- Cardiac Arrest
- Many times patient is symptom free

Hypokalemia (low potassium) symptoms include:

- Arrhythmias
- Muscle spasms
- Fatigue

Renal Diet cont



Foods high in potassium include:

- Potatoes
- Dairy products
- Beans, nuts or seeds (including peanut butter)
- Oranges, bananas, cantaloupe, avocados, nectarines
- Salt substitutes
- Tomatoes, winter squash, spinach, artichokes
- Chocolate

Renal Diet cont



Phosphorous needs to be regulated to a lab value
of 3.5 - 5.5 mg/dL

High phosphorous levels symptoms include:

- Itching
- Burning eyes
- Calcium-phosphorus deposits in:
 - *Heart* (early heart attack)
 - *Skin, Lungs* and other *organs*
 - *Blood vessels*- including those used for dialysis access and those needed for a transplant

Renal Diet cont



Food with high Phosphorous include:

- Prepared food
(phosphorous is often used as a preservative)
- Fast food
- Dairy Products
- Dark colas
- Organ meats
- Whole grains

Renal Diet cont



To assist in regulating phosphorous many patients take phosphorous binders.

Most binders need to be taken with the meal or snack.



Work with the dialysis facility's Registered Dietician to ensure adherence to prescribed binders.

Basic Labs for Dialysis Patients



Dialysis patients have lab samples drawn and tested on a regular basis.

Monthly Labs:

- Adequacy of dialysis
- Calcium, phosphorous
- Hemoglobin
- Albumin
- Iron Saturation, TIBC

Please contact the dialysis facility for lab results or other labs tested.

Medications



Caution needs to be taken with medications prescribed to dialysis patients.

Due to the compromised kidney function, medications may not be excreted and have a dangerous build up in the blood stream.

Any changes in a patient's medications should be communicated to the dialysis facility.

As mentioned in the renal diet slide, binders need to be taken as prescribed, which is usually with meals and snacks.

Coordination of Care



Communication between the care facility and the dialysis facility will ensure the best care for the patient.

Treatments:

- Many dialysis facilities run on a tight patient schedule, so the patient needs to be on time
- Some medications (blood pressure, antibiotics) may need to be held prior to dialysis

Patient Issues:

- Any bleeding or fall issues should be reported to the facility

Emergency Considerations



During an emergency, if you must do things differently with your patients, the dialysis facility must also

Dialysis facilities must:

- have their own emergency plan.
- must make arrangements with a near-by facility to dialyze their patients if they cannot.
- must have emergency contact numbers and provide them to you
- have your facility's numbers as well.

Emergency Considerations cont



If your patients must be evacuated, it is most important that the receiving staff know:

- that the dialysis patient is currently receiving dialysis
- the physician's order for the dialysis
- how long it has been since the last dialysis treatment.

Emergency Considerations cont



There are other materials available that will assist you in caring for the extra needs of a dialysis patient during an emergency.

Please feel free to contact:

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or @ 206-923-0714

Questions?



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Northwest Renal Network



Network Mission

The mission of Northwest Renal Network is to promote optimal dialysis and transplant care for kidney patients in Alaska, Idaho, Montana, Oregon and Washington.

