

# Kidney Disease and Failure

March 2018

# Objectives

- State the function of the kidney
- Define kidney disease
- Identify tests and abnormal test results for kidney function
- Recognize prevention and treatment strategies
- Understand conditions related to kidney disease

# Function of the Kidney

- The kidneys are a bean-shaped organ about the size of your fist located in the middle of the back on the left and right of the spine under the rib cage.
- The main function of the kidneys is to filter blood, remove wastes, mineral, and excess water to create urine. These organs also help control blood pressure and produce hormones that the body needs to stay healthy. When the kidneys are damaged, however, wastes can build up within the body, this deterioration of function is known as kidney disease.

# Kidney Disease

- Kidney disease is the result of damaged kidneys that can no longer remove wastes and excess water from the blood as they should.
- According to the CDC, more than 20 million Americans may have kidney disease.

# Kidney Disease cont.

- Risk factors for developing kidney disease are:
  - Diabetes
  - High Blood Pressure
  - Cardiovascular disease
  - A family history of kidney failure

# Kidney Disease cont.

- Every kidney contains around 1 million filtering units comprised of blood vessels, known as glomeruli. Conditions such as diabetes and high blood pressure can damage these blood vessels, but this damage often occurs slowly, over many years. This gradual deterioration is called chronic kidney disease. As glomeruli are damaged, kidneys become less effective at maintaining proper health.

# How Can YOU Help?

- Ensure that patients are informed and educated about blood and urine testing for kidney disease.
- Monitor and manage conditions such as diabetes, high blood pressure, high cholesterol, and/or heart disease.
- Encourage a healthy diet with fresh fruits, vegetables, whole grains, low-fat dairy foods, and limited salt.
- Encourage physical activity and weight loss, as appropriate.
- Assist and educate patients in taking medications as prescribed by the physician.

# Symptoms and Diagnosis

- Kidney disease is often called a “silent” disease, because most people have no symptoms with early kidney disease. Unfortunately, it is possible for those with kidney disease to “feel fine” until the kidneys have almost completely stopped working.
- Blood and urine tests are the only way to check for kidney damage or measure kidney function.
- If a patient has any of the risk factors previously mentioned, testing for kidney disease may be recommended.



# Kidney Failure

- Kidney disease can get worse over time, ultimately leading to kidney failure.
- Kidney failure is advanced kidney damage where the kidneys perform less than 15% of the normal function. End-stage renal disease (ESRD) is kidney failure treated by dialysis or kidney transplant.
- If the kidneys fail, treatment options such as dialysis or kidney transplant can help replace kidney function.

# Dialysis

- Dialysis is a treatment that takes waste products and extra fluid out of the body.
- There are two main forms of dialysis:
  - Hemodialysis
  - Peritoneal Dialysis

# Dialysis cont.

- In hemodialysis, the blood passes through a filter located outside of the body, where the blood is cleaned and returned to the body.
- Peritoneal dialysis uses the lining of the patients abdominal cavity to filter the blood. It works by putting a special fluid into the abdomen that absorbs waste products in your blood as it passes through the small blood vessels in this lining. This fluid is drained away. Peritoneal dialysis can often be done t home while the patient sleeps.

# Kidney Transplant

- Instead of dialysis, some people with kidney failure may be able to receive a kidney transplant. This treatment requires having a healthy kidney from a person surgically placed into the body. The donated kidney replaces the failed kidney
- A donated kidney can come from:
  - An anonymous donor who has recently died
  - A living person-usually a relative
  - An unrelated donor, including a spouse or friend

# Kidney Transplant cont.

- Unfortunately, due to the shortage of donated kidneys, patients on the waiting list for a donor kidney may have to wait many years.
- It is important for patients to understand that a kidney transplant is not a cure. Patients will need to be seen by a physician regularly and will need to take medications for as long as they have the transplant to suppress the immune system to limit the risk of rejection of the transplanted kidney.

# Age and Kidney Function

- Kidneys may be significantly impacted by aging. As kidneys age, there may be a decrease in the number of filtering units in each kidney, kidney tissue may decrease, and the blood vessels that supply the kidney may harden-all of which cause the kidneys to filter blood more slowly.

# Age and Kidney Function cont.

- With a decrease in filtering function, a person may be more likely to have complications from certain medications and/or an unsafe buildup of medicines that are removed from the body by the kidneys in a healthy person.
- Kidneys may also become more sensitive to certain medications.

# Additional Conditions

- Kidney disease can lead to other health problems. While working with patients who suffer from kidney disease, home health staff should be aware of the following related condition:
  - Depression
  - Heart disease
  - Bone disease
  - Arthritis
  - Nerve damage
  - Malnutrition



# Closing

- To help keep patients safe and healthy, report any noticeable changes in a patient's condition to a supervisor.
- Kidney disease is a difficult condition to diagnose early on. Discuss the risk factors and prevention tips discussed in this lesson with your patients and help kidney disease sufferers get the treatment they need before additional complication arise.