Role of the Kidneys

- Important in filtering blood to help remove wastes and toxins
- Important in keeping our electrolytes in balance
- Involved in controlling blood pressure
- Involved in bone health and bone marrow health
What is Chronic Kidney Disease (CKD)

- A condition in which the kidneys are damaged and cannot do its functions as well as healthy kidneys

- Defined as abnormal kidney function persisting more than 3 months
  - This differs from Acute Kidney Injury (or AKI) which is acute in onset and often reversible

- Kidney tests include both blood and urine
  - Serum creatinine, Glomerular Filtration Rate (GFR), urine protein levels
Burden of CKD

- Almost 30 million Americans have kidney disease
  - Prevalence of about 14% of the adult population

- Kidney disease ranks as the 9th leading cause of death in the USA
  - Almost 47,000 Americans died from kidney disease in 2013

- 1 in 3 American adults are at risk for developing CKD

- About 50% of individuals with CKD also have diabetes and/or self-reported heart disease

NIDDK
https://www.niddk.nih.gov/health-information/health-statistics/kidney-disease
Trends in total Medicare Parts A, B, and D fee-for-service spending for CKD patients aged 65 and older, by claim type, 2004-2016

Data source: Medicare 5% sample. Part D data occurring since 2006. Abbreviations: CKD, chronic kidney disease; ESRD, end-stage renal disease.
Kidney Disease

- Two most common causes of kidney disease are:
  - Diabetes
  - Hypertension

- But there are many other conditions that can cause kidney disease
  - Circulating factors (suPAR)
  - Inherited disease (polycystic kidney disease)
  - Autoimmune diseases (e.g. Lupus)
  - Blockage
  - Medications
Kidney Involvement in Lupus

- Lupus is an autoimmune disease in which the body’s immune system attacks the organs.

- The kidneys can be involved in almost 40% of patients who have lupus.
  - The kidneys are commonly one of the major organs involved.

- Lupus Nephritis
Lupus Nephritis

How do you know if you have lupus nephritis?

Urine tests
- Blood – not visible, seen under the microscope
- Protein – again not visible

Blood tests
- Serum Creatinine
- Lupus labs – typically very abnormal
Lupus Nephritis

- Kidney Biopsy
  - Typically needed to confirm the diagnosis
  - Helps guide treatment choices
  - Help determine long term damage

- The procedure requires a hospital stay (short)

- Risks vs benefits
6 different classes of lupus nephritis which are diagnosed based on the biopsy results

The findings on the biopsy along with any other lupus symptoms/organ involvement will determine the type of treatment
Treatment

Induction Phase

Maintenance Phase
Treatment

- **Steroids**
  - Mainstay of treatment if needed based on the biopsy
  - Higher doses
  - Stopped over time

- **Combined with medications such as**
  - MMF (Cellcept), Azathioprine (Imuran), Cyclophosphamide (Cytoxan)
Lupus and Kidney Disease

- Kidney disease due to Lupus can range from mild disease requiring no specific treatment to severe disease requiring targeted treatment.

- Most patients do very well with treatment.

- You may need to take medication for years to keep the kidney disease in check.
Lupus and Kidney Disease

- If you have kidney disease, there are other steps we can take to help protect our kidneys
- Smoking can accelerate kidney damage
- Controlling your blood pressure
- If you have diabetes, controlling your blood sugar
- Avoid medications even if they are over the counter unless recommended by your healthcare team
Lupus and Kidney Disease

- In the most severe cases, patients may develop worsening kidney disease.

- If your kidneys fail, there are options at that time which include dialysis and possibly a kidney transplant.

- Lupus patients do well with both of these as do patients who have other types of kidney disease.
Symptoms of Kidney Disease

- Most patients with early kidney disease may not have symptoms

- In later stages, some symptoms may arise including:
  - Loss of appetite; nausea, vomiting
  - Feeling tired or short of breath
  - Having trouble thinking clearly
  - Swollen feet and/or ankles
  - Weird or metallic taste
When is Dialysis needed?

- You need dialysis when the function of the kidneys have deteriorated to less than 10-15%
- You may or may not feel symptoms such as:
  - Nausea/Vomiting
  - Loss of appetite
  - Weight loss
  - Itching
  - Swelling from fluid build-up
  - Difficult to control blood pressure
  - Fatigue (feeling weak)
Lupus and Kidney Disease Prevention

- Make sure to follow up with your primary care and lupus doctor regularly

- If there is any evidence of kidney involvement, you will be referred to a kidney doctor
Thank You