**NAME: ODODO PEACE OMOJO**

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DISCUSS THE DISEASES OF THE RENAL SYSTEM

* **Acute kidney injury (AKI),** previously called acute renal failure (ARF), is a rapidly progressive loss of renal function, generally characterized by oliguria (decreased urine production, quantified as less than 400 mL per day in adults, less than 0.5 mL/kg/h in children or less than 1 mL/kg/h in infants); and fluid and electrolyte imbalance. AKI can result from a variety of causes, generally classified as prerenal, intrinsic, and postrenal. An underlying cause must be identified and treated to arrest the progress, and dialysis may be necessary to bridge the time gap required for treating these fundamental causes.
* **Chronic kidney disease (CKD**) can also develop slowly and, initially, show few symptoms. CKD can be the long-term consequence of irreversible acute disease or part of a disease progression.

Acute kidney injuries can be present on top of chronic kidney disease, a condition called acute-on-chronic renal failure (AoCRF). The acute part of AoCRF may be reversible, and the goal of treatment, as with AKI, is to return the patient to baseline renal function, typically measured by serum creatinine. Like AKI, AoCRF can be difficult to distinguish from chronic kidney disease if the patient has not been monitored by a physician and no baseline (i.e., past) blood work is available for comparison

* **. Renal Failure Uremia**

Renal failure uremia is a syndrome of renal failure that includes elevated blood urea and creatinine levels. Acute renal failure can be reversed if diagnosed early. Acute renal failure can be caused by severe hypotension or severe glomerular disease. Diagnostic tests include BUN and plasma creatinine level tests. It is considered to be chronic renal failure if the decline of renal function is to less than 25%.

* **Nephroptosis (Floating Kidney)**

Nephroptosis is an abnormal condition in which the kidney drops down into the pelvis when the patient stands up. It is believed to result from deficiency of supporting perirenal fasciae. The renal fascia is a layer of connective tissue encapsulating the kidneys and the suprarenal glands. The deeper layers below the renal fascia are, in order, the adipose capsule of the kidney (or perirenal fat), the renal capsule and finally the parenchyma of the renal cortex.

* **Polycystic Kidney Disease**

Polycystic kidney disease (PKD) is a cystic genetic disorder of the kidneys. There are two types of PKD: autosomal dominant polycystic kidney disease (ADPKD), and the less-common autosomal recessive polycystic kidney disease (ARPKD). PKD is characterized by the presence of multiple cysts, typically in both kidneys. The cysts are numerous and are fluid-filled, resulting in massive enlargement of the kidneys. The disease can also damage the liver, pancreas, and, in some rare cases, the heart and brain. The two major forms of polycystic kidney disease are distinguished by their patterns of inheritance. Polycystic kidney disease is one of the most common life-threatening genetic diseases, affecting an estimated 12.5 million people worldwide.

Autosomal dominant polycystic kidney disease (ADPKD) is the most common of all the hereditary cystic kidney diseases, with an incidence of 1:1,000 to 2:1,000 live births. Studies show that 10% of end-stage renal disease (ESRD) patients treated with hemodialysis in Europe and the U.S. were initially diagnosed and treated for ADPKD. ADPKD does not appear to demonstrate a preference for any particular ethnicity. Studies show that the incidence of autosomal recessive polycystic kidney disease (ARPKD) is 1:20,000 live births, and is typically identified in the first few weeks after birth. Unfortunately, resulting hypoplasia results in a 30% death rate in neonates with ARPKD. In ARPKD, kidneys retain their shape, but are larger than the normal anatomical range with dilated collecting ducts from the medulla to the cortex.

The major extrarenal complications of ADPKD include cerebral aneurysms, hepatic cysts, pancreatic cysts, cardiac valve disease (especially mitral valve prolapse), colonic diverticula, and aortic root dilatation.

* **Glomerulonephritis**

This is a glomerular disease. The glomerular are the filtration “units” inside of the kidney. This disease is related to inflammation inside of the glomerular in the kidney. The signs of this include excess protein and red and white blood cells in the urine. It can start with minimal symptoms like swollen feet or some discolored urine. Eventually, it can become so severe it causes abdominal pain and blood pressure problems. Urine and blood tests done by a doctor will help with its diagnosis.