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DEPARTMENT; PHARMACOLOGY

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QUESTION:

Discuss the diseases of the renal system.

ANSWERS:

Diseases of the kidneys or bladder can compromise urinary system functions. Below are some common diseases of the urinary system.

1. Kidney Stones Form from Substances in Urine: The kidneys produce urine to eliminate waste. Kidney stones can form when mineral and acid salts in the urine crystallize and stick together. If the stone is small, it can pass easily through the urinary system and out of the body. A larger stone can get stuck in the urinary tract, however. A stuck kidney stone causes pain and can block the flow of urine.

2. Urinary Incontinence Is the Loss of Bladder Control: Most bladder control issues arise when the sphincter muscles of the urethra are too weak or too active. If the sphincter muscles are too weak, a cough or sneeze can cause urination. Sphincter muscles that are too active can trigger a sudden, strong urge to urinate with little urine in the bladder. These issues are diagnosed as urinary incontinence (UI). Women experience UI twice as often as men. It becomes more common with age.

3. Fluid-filled Cysts Can Develop in the Kidneys: A simple kidney cyst is a rounded pouch or a closed pocket that is usually filled with fluid. In polycystic kidney disease (PKD), clusters of cysts form inside the kidneys and take the place of the normal tissue. The affected kidneys become enlarged and work poorly. PKD is an inherited condition that often leads to kidney failure, requiring dialysis or kidney transplantation. Acquired cystic kidney disease (ACKD) typically affects people already on dialysis from chronic kidney disease. In ACKD the kidneys do not enlarge and no other symptoms occur.

4. Chronic kidney disease: The most common form of kidney disease is chronic kidney disease. Chronic kidney disease is a long-term condition that doesn’t improve over time. It’s commonly caused by high blood pressure. High blood pressure is dangerous for the kidneys because it can increase the pressure on the glomeruli. Glomeruli are the tiny blood vessels in the kidneys where blood is cleaned. Over time, the increased pressure damages these vessels and kidney function begins to decline. Kidney function will eventually deteriorate to the point where the kidneys can no longer perform their job properly. In this case, a person would need to go on dialysis. Dialysis filters extra fluid and waste out of the blood. Dialysis can help treat kidney disease but it can’t cure it. A kidney transplant may be another treatment option depending on your circumstances.

Diabetes is also a major cause of chronic kidney disease. Diabetes is a group of diseases that causes high blood sugar. The increased level of sugar in the blood damages the blood vessels in the kidneys over time. This means the kidneys can’t clean the blood properly. Kidney failure can occur when your body becomes overloaded with toxins.

5. Glomerulonephritis: Glomerulonephritis is an inflammation of the glomeruli. Glomeruli are extremely small structures inside the kidneys that filter the blood. Glomerulonephritis can be caused by infections, drugs, or congenital abnormalities (disorders that occur during or shortly after birth). It often gets better on its own.

6. Urinary tract infections: Urinary tract infections (UTIs) are bacterial infections of any part of the urinary system. Infections in the bladder and urethra are the most common. They are easily treatable and rarely lead to more health problems. However, if left untreated, these infections can spread to the kidneys and cause kidney failure.

7. Kidney cancer: Kidney cancer is cancer that begins in the kidneys. Your kidneys are two bean-shaped organs, each about the size of your fist. They're located behind your abdominal organs, with one kidney on each side of your spine. In adults, renal cell carcinoma is the most common type of kidney cancer. Other less common types of kidney cancer can occur. Young children are more likely to develop a kind of kidney cancer called Wilms' tumor.