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**DISEASES OF THR RENAL SYSTEM**

 The urinary system, also known as the renal system or urinary tract, consists of the kidneys, ureters, bladder, and the urethra. The purpose of the urinary system is to eliminate waste from the body, regulate blood volume and blood pressure, control levels of electrolytes and metabolites, and regulate blood pH. The urinary tract is the body's drainage system for the eventual removal of urine. The kidneys have an extensive blood supply via the renal arteries which leave the kidneys via the renal vein. Each kidney consists of functional units called nephrons. Following filtration of blood and further processing, wastes (in the form of urine) exit the kidney via the ureters, tubes made of smooth muscle fibres that propel urine towards the urinary bladder, where it is stored and subsequently expelled from the body by urination (voiding). The female and male urinary system are very similar, differing only in the length of the urethra. Renal system disease, any of the diseases or disorders that affect the human urinary system. They include benign and malignant tumours, infections and inflammations, and obstruction by calculi. Diseases can have an impact on the elimination of wastes and on the conservation of an appropriate amount and quality of body fluid. Many of the manifestations of renal disease can be accounted for in terms of disturbance of these two functions, and the alleviation of symptoms in those renal diseases that cannot be cured depends on knowledge of how these two functions are affected.

These are commonly seen urinary system problems. This is a very minimized list. Some urinary problems can occur due to systemic autoimmune disorders. They are not problems of the urinary system, but rather the immune system affecting the urinary system. The same is true for other health issues, such as diabetes (type 1 is autoimmune, type 2 is not). Both can cause kidney problems.

1. Urinary Tract Infections: The most common problem with the urinary system is an infection. This infection is called a UTI and is caused by bacteria. A UTI can occur in any part of the renal system. It can be in the bladder, the kidney or the urethra.

2. Interstitial Cystitis – Painful Bladder: This is an inflamed painful bladder. Frequency and urgency can go with this. What can happen is the bladder can lose its elasticity from the inflammation over time. It can also develop ulcers. It can stiffen.

3. Bladder Control Problems: These are problems with frequency of urination, holding urine in, or releasing urine.

4. Kidney Stones: This is a solid deposit (or mass) in the kidney-formed out of substances in urine. It can stay in the kidney or move throughout the system and cause a lot of pain in the urinary system. If it is too large it can get stuck in any area of the urinary system. The stones have to be broken up and pass out of the body for the system to return to normal function. A backup or inability to urinate can occur depending on where the stone is located.

5. Proteinuria: This is a build-up of protein in the urine. This type of build-up is usually related to kidney disease and is a sign something is wrong in the kidney.

6. Amyloidosis: Although this term can be a systemic condition and not specific to the kidney, this condition can occur in the kidney. It is usually part of certain types of autoimmune disorders and periodic fever syndromes. The protein amyloid binds itself, or deposits itself, in or on organs causing malfunction or failure. There are different types of amyloidosis. To read more about amyloidosis check out this site. Of course, with any system cancer is a condition that can occur. It’s important to seek medical advice from a doctor if you are having any symptoms of a body system problem.

7. Blood cells

**Other Disorders of the Kidney**

There are a series of kidney inflammatory disorders. These causes of inflammation can be from disease or infection. They are usually caused by autoimmune disorders (those are disorders of the immune system, rather than the renal system). Because kidney symptoms show up frequently with autoimmune disorders, they include;

1. Glomerulonephritis: This is a glomerular disease. Remember 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. None of these things should be in the urine. The cause of this can actually come from diseases like chicken pox or strep throat. It can start with minimal symptoms like swollen feet or some discoloured urine. Eventually, it can become so severe it causes abdominal pain and blood pressure problems. Urine and blood tests done by your doctor will help with a diagnosis.

2. Membranoproliferative Glomerulonephritis (MPGN): This is seen mostly in children (and teens). The chronic inflammation of the glomerular in this condition leads to scarring. The scarring can create difficulty with kidney function. Signs include blood in urine, swelling around eyes, or in hands and feet. Creatinine levels can help determine if you have this disorder. Protein in your urine is another sign of this. Treatment with steroids, or other targeted medications, can help with protein loss and decrease inflammation.

3. Interstitial Nephritis: This is inflammation of kidney cells unrelated to fluid collection or release. It’s non-glomerular related. It can be caused by inflammatory disease, or by reactions to medications like antibiotics and medications (like ibuprofen or acetaminophen.) Blood in the urine, swelling in hands and feet and around eyes, nausea and fever are signs of this.

4. IgA Nephropathy: This is inflammation in the glomeruli. Blood and urine are allowed to pass out in the urine in IgA nephropathy. Pain in the sides and flu-like symptoms go with this disorder. Bloodwork and urine samples will be taken to measure for this.

5. Pyelonephritis: This is a UTI that moves from the bladder up into the kidney. It can be caused by kidney stones, problems in the urinary tract or bladder infection alone. There can be painful urination, blood, and puss in the urine, pain in the back and sides of the body. This can be treated by antibiotics.

**Autoimmune Disorders That Can Affect Renal System**

1. Lupus

2. Goodpasture’s Disease

3. Wegener’s Granulomatosis