
# SURGICAL DISEASES OF THE KIDNEYS AND URINARY TRACT

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https://doi.org/10.5281/zenodo.8077475

**ANNOTATION:** The importance of the kidney in managing the activity of the body is very great. The kidney removes waste products, excess water, salts, and some drugs from the body. Thus, this organ actively participates in water-salt exchange, management of acid-base balance, osmoregulation. It ensures the stability of the internal environment.

**KEYWORDS:** Endocrine, nephrons, Proximal, kidney patients, filtration, secretion, reabsorption.

Endocrine activity is manifested in the production of renin, erythropoiesis, and urokinase substances. It has been established that the kidney actively participates in the exchange of proteins, fats, carbohydrates, and mineral salts. Proteins of mother's milk are broken down in the kidneys of newborn children. The kidney, ureters, urinary bladder, and urethra are part of the urinary system. It is the main member of the kidney system. The kidney spine is located on both sides of the lumbar spine. It is bean-shaped and has a hollow on its concave surface, where vessels and nerves are located. The kidney is surrounded by a bark consisting of thin connective tissue. The kidney is 10-12 cm in size and weighs 150-170 g. When the kidney is cut longitudinally, it shows the kidneys consisting of two areas - bark and medulla. The boundary between the bark and pulp is uneven and has sunk into each other. The pulp penetrates into the pulp as Bertin's columns, while the pulp penetrates into the pulp as Ferrein's rays.

The structural and functional unit of the kidney is a nephron. 1 million in each kidney. Gacha is a nephron. Between the nephron and the collecting tubules is a connective tissue, which contains blood vessels, nerves, and prostaglandin-producing interstitial cells.

There are three different types of nephrons depending on their location in the cortex and medulla:

1. Superficial nephrons.
2. Intracortical nephrons.
3. Supramedullary nephrons.

The first two types of nephrons make up 80-85 percent and are of great importance in renal hypertension. The rest corresponds to the supramidullary nephrons. The following sections of nephrons are distinguished:

1) renal corpuscle;
2) proximal section of nephrons;
3) a thin section of nephrons;
4) distal section of nephrons.

The distal sections of several nephrons are interconnected and open into a single tube. The renal corpuscle consists of a capsule that surrounds and covers the vessels. The visceral and parietal sheets of the capsule are differentiated. Endocrine apparatus of the kidney - juxtaglomerular apparatus (YUGA) is located in the renal corpuscle. YUGA is not present in nephrons. The endothelium of the entangled capillary, the basement membrane, and podocytes - the cells of the visceral sheet of the kidney capsule together form a filtration barrier consisting of 3 layers. Through this barrier, components of blood plasma are filtered into the capsule space and form primary urine. This barrier does not pass shaped elements of blood, proteins with a large molecular mass, immune cells, fibrogen, etc. In kidney diseases, shaped elements and large proteins pass through this barrier, resulting in proteinuria.

The cells of the proximal section are cylindrical in shape and ensure reabsorption of about 80% of primary urine. Especially protein and sugar are completely absorbed. Cells are rich in lysosomes that store proteolytic enzymes. the rest of the primary urine is absorbed in the thin (the shape of the cells is flat) and distal part of the nephron (the shape of the cells is cubic) and secondary urine is formed.

Renin, erythropoietin, and prostaglandin are processed in the cells performing the endocrine function of the kidney. Renin and erythropoietin are processed in the cells of YUGA. Prostoglandins are produced in the interstitial cells of the medulla of the kidney. According to the modern theory, the following processes are important in the production of urine: 1) filtration; 2) secretion; 3) reabsorption. About 1000 ml to 2000 ml of primary urine is formed in the human kidney in one night.

In nephron tubules, primary urine changes and separates into secondary urine. A large amount of water, protein, glucose, and salt ions are reabsorbed into the nephron tubules. Thus, the production of urine in the kidney takes place in 2 stages. In the 1st stage, ultrafiltration of urine occurs in the renal corpuscles. In the 2 nd stage, resorption and secretion are observed in the nephron channels and esophageal tubes. A healthy person secretes up to 1.5 liters of urine per day. The color of urine is pale yellow and clear. urine reaction is weakly acidic or neutral, pH 4.5-8.0. the relative specific gravity of urine is in the range of 1020-1026 and depends on the amount of food eaten and liquid drunk. The composition of secondary urine mainly consists of urea, uric acid, curine bases, creatinine, indicator, etc., formed from the decomposition of nitrogen products.

The main clinical signs of diseases of the kidney and urinary system.

Specific clinical symptoms of the kidney and urinary system are: swelling, changes in urine output (diuresis), changes in the color and composition of urine, increased arterial pressure, pain in the lower back, and fever.

Edema is different in kidney patients. (depending on location, degree of spread and duration). Most often, it is detected mainly in the morning on the face. In the more visible swelling syndrome, swelling is also detected in the legs (in the calf area). In some cases, the swelling is larger and can be in the entire subcutaneous fat pad (anasarca), chest (hydrothorax), abdominal cavity (astitis).

Change in urine output (diuresis) is one of the main symptoms of kidney and urinary system diseases. Edema is usually noted along with decreased urine output-oliguria (diuresis 500 ml/day). A sudden significant decrease in urine output (less than 200ml/day) can be caused by natural anuria, acute inflammation of the kidneys, poisoning with acute renal failure, persistent vomiting and diarrhea, i.e. large amounts of fluid or causes hardening.

Anuria can also be due to acute urinary retention, in which case the urine is in the bladder, but not separated (in spasm of the urinary tract, urinary stone obstruction, tumors of the urinary tract; paralysis of the urinary bladder). In such cases, urine is removed through a catheter.

Increased urine output (more than 2000ml/day) - polyuria - causes rapid return of edema (a sign of kidney inflammation). Polyuria often occurs in patients suffering from chronic kidney disease for a long time and can cause chronic kidney failure (usually more polyuria is accompanied by nocturia, i.e. increased diuresis at night).

Dysuric state is painful, and sometimes accelerated urination is more common in urinary tract inflammation (cystitis, urethritis, prostatitis), sometimes in urinary bladder stone diseases.

Change in the color of urine. Mixing of blood with urine - macrohermatria is observed in renal stone disease, that is, renal colic. A kidney tumor should be ruled out if the urine is painless, sudden, with a large amount of blood or a blood clot.

In some cases, the color of urine can change due to the intake of drugs. The color of urine mainly depends on changes in the concentration of salts in urine (urate salts). Residues of urate salts enter the urine, changing the clarity of the urine and making it cloudy. If this urine is left to rest, it will quickly become clear. An increase in leukocytes in the urine (leukocyturia) also causes cloudy urine, and this cloudy urine remains for a long time.

Changes in the composition of urine are determined as a result of laboratory tests. Proteinuria - excretion of protein in the urine (more than 50 mg/day). This sign is the most common sign of kidney diseases, and in some cases it can also be found in a healthy body (during sudden physical exertion and in sportsmen). Proteinuria also occurs independently of the kidney (in inflammatory diseases of the urinary tract, cylinduria also occurs when the cells are destroyed by sperm.

In urinalysis, the detection of proteinuria, cylinduria, and swelling in the field of nephrotic syndrome, the finding of 5 leukocytes or more than 4,000 leukocytes in 1 ml of urine is called leukocyturia (Nicheporeko test), which occurs in pyelonephritis and diseases of the urinary tract.

Many kidney diseases are accompanied by an increase in arterial pressure, characteristic of which is an increase in diastolic pressure. One of the rare clinical signs of kidney disease is pain in the lower back and an increase in body temperature.

## References:

1.Gapparov, A. (2023). DIACHRONIC ANALYSIS OF SOCIO-POLITICAL VOCABULARY. Евразийский журнал академических исследований, 3(4 Part 3), 140-147.
2.Gapparov, A. (2023). DIACHRONIC ANALYSIS OF SOCIO-POLITICAL VOCABULARY. Евразийский журнал академических исследований, 3(4 Part 3), 140-147
3.Shamsikamar, A., & Ziyodullayevna, M. B. (2022). Interiors of Historic Hospitals. EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION, 2(5), 227-229.
4.Shamsikamar, A. (2021). Historical architectural rules when designing buildings. Journal of Architectural Design, 1, 6-9.

5.Karshiboyevich, G. A. (2023). ON THE SOCIAL POSITION OF SOCIO-POLITICAL VOCABULARY IN A JOURNALISTIC TEXT. American Journal Of Social Sciences And Humanity Research, 3(04), 23-31.
6.Ziyadullayevna, A. S. (2023). Historical Sources About the City of Afrosyoob. Nexus: Journal of Advances Studies of Engineering Science, 2(6), 36-38