
THE MAIN FACTORS IN THE ORIGIN OF NEPHROTIC SYNDROME

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Annotation: Nephrotic syndrome, group of signs of kidney malfunction, including a low level of albumin (a protein) and a high level of lipids (fats) in the blood, proteins in the urine, and the accumulation of fluid in the tissues. Nephrotic syndrome typically results in the loss of more than 3.5 grams of proteins per day. It may result from streptococcal infection, lupus erythematosus, renal vein thrombosis, or heavy-metal poisoning.

Key words: Syndrome, kidney, nephrotic, nephritic.

The nephrotic syndrome occurs usually in young children or young adults. Persons affected may lack appetite and experience irritability, vomiting, and diarrhea. High levels of fluids in the tissues can cause a 50 percent increase in body weight. In children the syndrome includes gross swelling of the face, while in adults the legs are most frequently afflicted. Low blood pressure and low plasma volume from lack of serum proteins occasionally cause severe vascular collapse. Protein malnutrition also leads to muscle wasting and growth retardation, especially in children. In treatment, attention is given to alleviation of the underlying disease and to elimination of the tissue fluids by increasing urine output.

Nephrotic syndrome is a kidney disorder that causes your body to pass too much protein in your urine.

Nephrotic syndrome is usually caused by damage to the clusters of small blood vessels in your kidneys that filter waste and excess water from your blood. The condition causes swelling, particularly in your feet and ankles, and increases the risk of other health problems.

Kidney cross section

The kidneys remove waste and excess fluid from your blood through filtering units called nephrons. Each nephron contains a filter (glomerulus) that has a network of tiny blood vessels called capillaries. When blood flows into a glomerulus, tiny molecules — water, essential minerals and nutrients, and wastes — pass through the capillary walls. Large molecules, such as proteins and red blood cells, do not. The filtered solution then passes into another part of the nephron called the tubule. The water, nutrients and minerals your body needs are transferred back to the bloodstream. The excess water and waste become urine that flows to the bladder.

Treatment for nephrotic syndrome includes treating the condition that's causing it and taking medications. Nephrotic syndrome can increase your risk of infections and blood clots. Your doctor might recommend medications and dietary changes to prevent complications.

Nephrotic syndrome is usually caused by damage to the clusters of tiny blood vessels (glomeruli) of your kidneys.

The glomeruli filter your blood as it passes through your kidneys, separating things your body needs from those it doesn't. Healthy glomeruli keep blood protein (mainly albumin) — which is needed to

maintain the right amount of fluid in your body — from seeping into your urine. When damaged, glomeruli allow too much blood protein to leave your body, leading to nephrotic syndrome.

Tests and procedures used to diagnose nephrotic syndrome include:

Urine tests. A urinalysis can reveal abnormalities in your urine, such as large amounts of protein. You might be asked to collect urine samples over 24 hours.

Blood tests. A blood test can show low levels of the protein albumin and often decreased levels of blood protein overall. Loss of albumin is often associated with an increase in blood cholesterol and blood triglycerides. The creatinine and urea nitrogen levels in your blood also might be measured to assess your overall kidney function.

Kidney biopsy. Your doctor might recommend removing a small sample of kidney tissue for testing. During a kidney biopsy, a needle is inserted through your skin and into your kidney. Kidney tissue is collected and sent to a lab for testing.

Treatment for nephrotic syndrome involves treating any medical condition that might be causing your nephrotic syndrome. Your doctor might also recommend medications and changes in your diet to help control your signs and symptoms or treat complications of nephrotic syndrome.

Medications might include:

Blood pressure medications. Drugs called angiotensin-converting enzyme (ACE) inhibitors reduce blood pressure and the amount of protein released in urine. Medications in this category include lisinopril (Prinivil, Qbrelis, Zestril), benazepril (Lotensin), captopril and enalapril (Vasotec).

Another group of drugs that works similarly is called angiotensin II receptor blockers (ARBs) and includes losartan (Cozaar) and valsartan (Diovan). Other medications, such as renin inhibitors, also might be used, though angiotensin-converting enzyme (ACE) inhibitors and angiotensin II receptor blockers (ARBs) are generally used first.

Water pills (diuretics). These help control swelling by increasing your kidneys' fluid output. Diuretic medications typically include furosemide (Lasix). Others include spironolactone (Aldactone, Carospir) and thiazides, such as hydrochlorothiazide or metolazone (Zaroxolyn).

Cholesterol-reducing medications. Statins can help lower cholesterol levels. However, it's not clear whether cholesterol-lowering medications can improve the outcomes for people with nephrotic syndrome, such as avoiding heart attacks or decreasing the risk of early death.

Statins include atorvastatin (Lipitor), fluvastatin (Lescol XL), lovastatin (Altoprev), pravastatin (Pravachol), rosuvastatin (Crestor, Ezallor) and simvastatin (Zocor).

Blood thinners (anticoagulants). These might be prescribed to decrease your blood's ability to clot, especially if you've had a blood clot. Anticoagulants include heparin, warfarin (Coumadin, Jantoven), dabigatran (Pradaxa), apixaban (Eliquis) and rivaroxaban (Xarelto).

Immune system-suppressing medications. Medications to control the immune system, such as corticosteroids, can decrease the inflammation that accompanies some of the conditions that can cause nephrotic syndrome. Medications include rituximab (Rituxan), cyclosporine and cyclophosphamide.

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