Nephrotic Syndrome

Nephrotic syndrome is a kidney disease that causes *proteinuria*. This is the loss over 3.5 grams per day of protein in the urine. This loss leads to low levels of *albumin* (protein) in the blood. Low protein in your blood lets fluids in your vessels ooze out into the tissues. This causes edema. Edema is a swelling of the entire body but is more noticeable in your hands, feet, legs, and around the eyes. The most common early symptom of nephrotic syndrome, in both children and adults, is edema and may not cause problems which are noticed before this. Blood levels of cholesterol and triglycerides (hyperlipidemia) may be high. Blood urea nitrogen (BUN) levels are usually normal. Nephrotic syndrome is uncommon and occurs at any age, but more often in boys between the ages of 2 to 6 years of age. Adults with this do not respond to treatment as well as children. Nephrotic syndrome is caused by damage to the tiny blood vessels in the kidneys that filter waste and excess water from the blood.

CAUSES

- Diseases such as diabetes and lupus, immune disorders, multiple myeloma, and amyloidosis.
- Unknown factors (idiopathic).
- Various medications and street drugs.
- Conditions such as pre-eclampsia.
- Complications of pregnancy such as pre-eclampsia and eclampsia.
- Infections such as HIV, hepatitis B, hepatitis C, syphilis, malaria, or tuberculosis.
- Various cancers.
- Graft rejection following an organ transplant.
- Allergic reactions.

SYMPTOMS

Most noticeable symptoms are due to the edema and are:

- Swelling around the eyes, face, abdomen, feet and ankles.
- Unexplained weight gain from fluid retention.
- High blood pressure.
- Foamy appearance of the urine.
- Poor appetite.

DIAGNOSIS

- Blood tests are used to determine the amount of protein, albumin, cholesterol, and *electrolytes* (salts) in your blood. Other tests may be done to make sure this is not caused by another disease or problem.
- Urine tests may be used to look for blood or protein in the urine. Fat may also be seen in the urine.
- Sometimes a kidney biopsy is done to confirm the diagnosis. This is more commonly done in adults. A biopsy is usually done with a needle under fluoroscopic guidance (a type of x-ray). The needle removes a very small piece of tissue which is then looked at under a microscope by a specialist.

TREATMENT

- The nephrotic syndrome is usually treated with medications that decrease the inflammation in the kidneys. If high blood pressure is present, it will be treated with blood pressure medications.
- Adults do not respond as well as children.
- Medications to treat high blood cholesterol and triglycerides may reduce the risks of atherosclerosis. Dietary restrictions of cholesterol and saturated fats seem to be of little benefit. Most of these fats are the results of production in the liver rather than from excessive fat intake
- Blood thinners may be required to treat or prevent clot formation.

COMPLICATIONS

- Infection such as peritonitis, cellulitis, and sepsis.
- Blood clots, especially pulmonary embolism (PE) and deep vein thrombosis (DVT).
- Increased cholesterol and triglyceride levels in the blood (hyperlipidemia).

- Malnutrition and vitamin D deficiency.
- *Chronic* (long lasting) kidney disease or *acute* (sudden) complete renal failure.
- Growth delays in children.

HOME CARE INSTRUCTIONS

Follow your diet and take your medications as directed.

SEEK MEDICAL CARE IF ANY OF THE FOLLOWING OCCUR:

- Blood in your urine or a dark smoky colored urine or decreased output.
- Increasing swelling and shortness of breath.
- A cough.
- A weight gain of more than five pounds in three days.
- A severe headache.
- Pain or discomfort with urination.

SEEK IMMEDIATE MEDICAL CARE OR CALL 911 IF *CONVULSIONS* (SEIZURES) OCCUR.

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