

NEPHROTIC SYNDROME

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BGI

Nephrotic syndrome

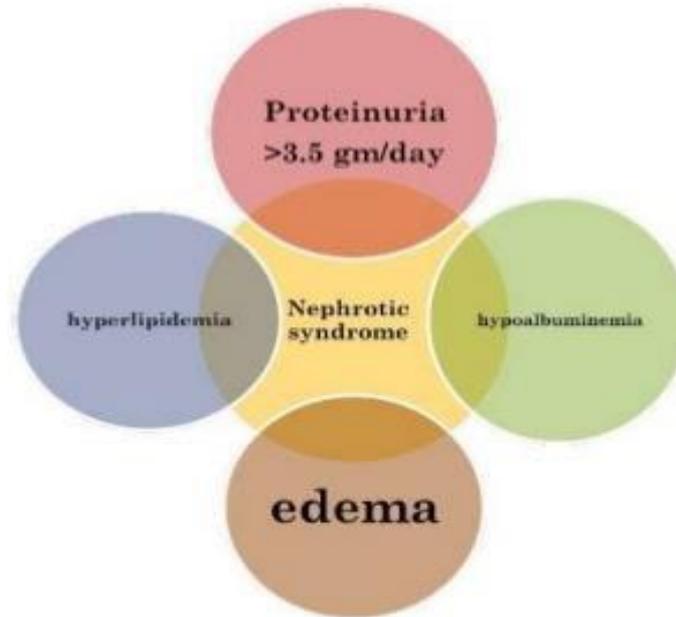
Definition

Nephrotic syndrome is a clinical disorder characterized by

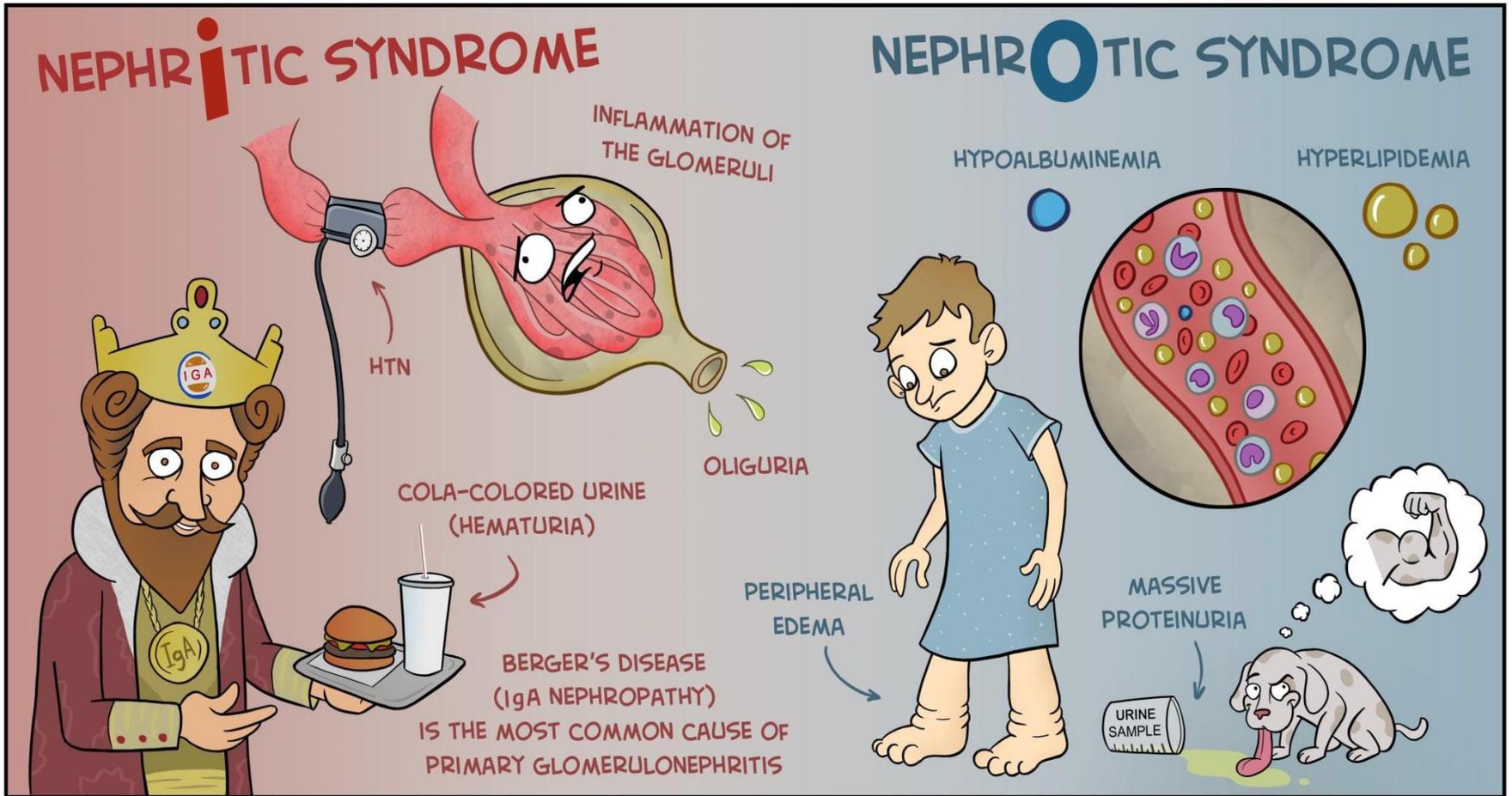
- Marked increase of protein in the urine (proteinuria).
- Decrease in albumin in the blood (hypoalbuminemia).
- Edema.
- Excess lipids in the blood (hyperlipidemia).

Nephrotic syndrome

NEPHROTIC SYNDROME IS NOT A DISEASE



Nephrotic syndrome



Nephrotic syndrome

Classification of nephrotic syndrome

❖ **ETOLOGICAL CLASSIFICATION**

1. Primary NEPHROTIC syndrome.
2. Secondary NEPHROTIC syndrome.

❖ **HISTOLOGICAL CLASSIFICATION**

1. MCD (Minimal change disease)
2. FSGN (Focal segmental glomerulosclerosis)
3. MN (Membranous nephropathy)
4. MPGN (membranous proliferative glomerulonephrosclerosis)

Nephrotic syndrome

Classification of nephrotic syndrome

❖ ETIOLOGICAL CLASSIFICATION

- **Primary:-** being a disease specific to the kidneys.
- **Secondary:-** being a renal manifestation of a systemic general illness

Nephrotic syndrome

Classification of nephrotic syndrome

❖ Histological Classification

- **Minimal Change Disease:** This is the most common cause of nephrotic syndrome in children. Minimal change disease results in abnormal kidney function, but when the kidney tissue is examined under a microscope, it appears normal or nearly normal. The cause of the abnormal function typically can't be determined.
- **Focal segmental glomerulosclerosis.** :Characterized by scattered scarring of some of the glomeruli, this condition may result from another disease or a genetic defect or occur for no known reason.
- **Membranous nephropathy.** This kidney disorder is the result of thickening membranes within the glomeruli. The exact cause of the thickening isn't known, but it's sometimes associated with other medical conditions, such as hepatitis B, malaria, lupus and cancer.

Nephrotic syndrome

Etiology

❖ Membranous nephropathy (MN)

- Hepatitis B
- Sjogren's syndrome
- Systemic lupus erythematosus (SLE)
- Diabetes mellitus
- Sarcoidosis
- Syphilis
- Drugs
- Malignancy (cancer)

Nephrotic syndrome

Etiology

❖ Focal segmental glomerulosclerosis(FSGS)

- Hypertensive Nephrosclerosis
- Human immunodeficiency virus (HIV)
- Diabetes mellitus
- Obesity
- Kidney loss

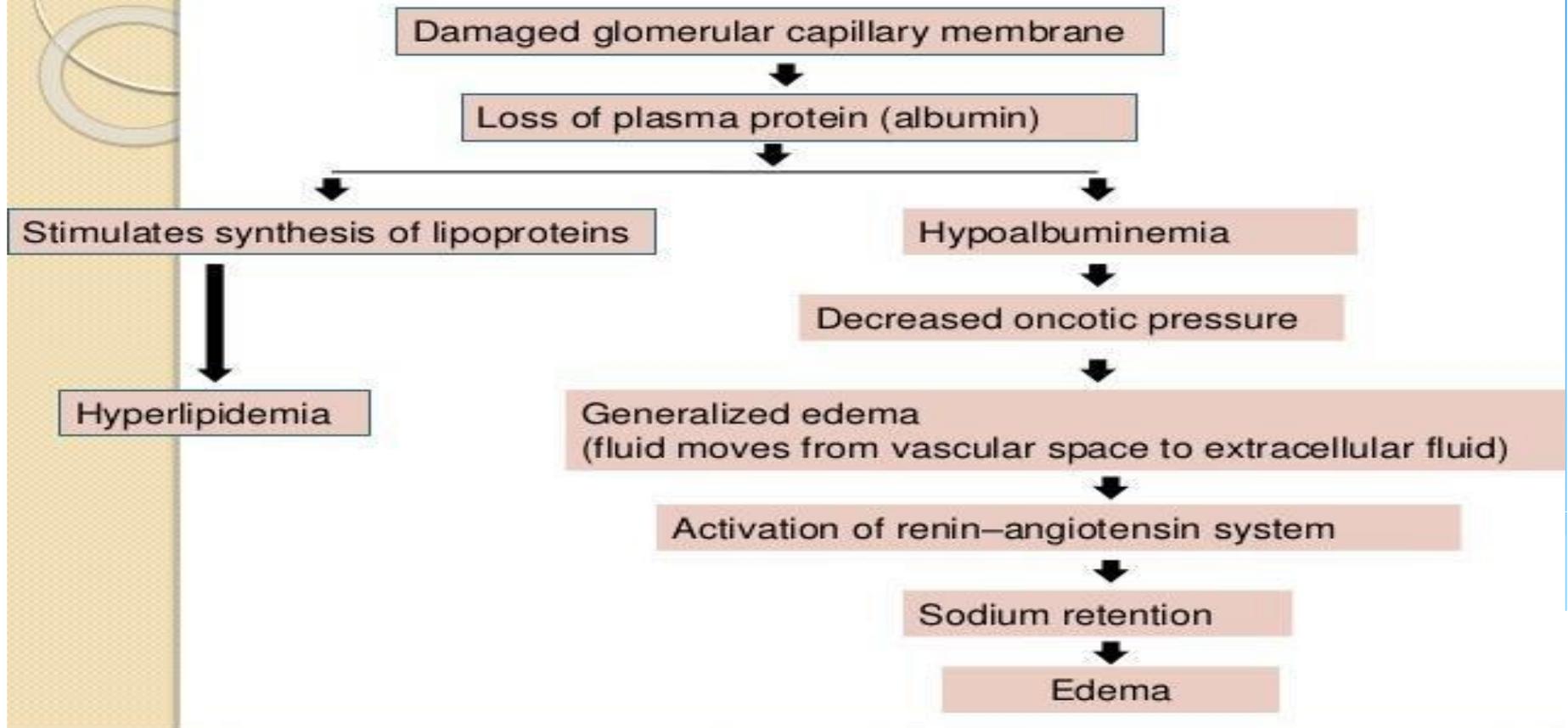
❖ Minimal change disease (MCD)

- Drugs
- Malignancy, especially Hodgkin's lymphoma

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Pathophysiology

pathophysiology



Nephrotic syndrome

Clinical Features

- Severe swelling (edema), around the eyes (periorbital), in dependent areas (sacrum, ankles, and hands), and in the abdomen (ascites).
- Foamy urine, which may be caused by excess protein in your urine
- Weight gain due to excess fluid retention
- Fatigue
- Loss of appetite

Nephrotic syndrome

Diagnostic evaluation

- Urinalysis- marked proteinuria, microscopic hematuria, 24-hour urine for protein (increased) and creatinine clearance (decreased)
- Protein electrophoresis and immunoelectrophoresis of the urine to categorize the proteinuria
- Needle biopsy of kidney for histologic examination of renal tissue to confirm diagnosis
- Serum chemistry- decreased total protein and albumin, normal or increased creatinine, increased triglycerides, and altered lipid profile

Nephrotic syndrome

Complications

Complications of nephrotic syndrome include-

- Infection (due to a deficient immune response)
- Thromboembolism (especially of the renal vein)
- Pulmonary emboli
- ARF(due to hypovolemia)
- Accelerated atherosclerosis (due to hyperlipidemia)

Nephrotic syndrome

Management

Treatment for nephrotic syndrome involves treating any underlying medical condition that may be causing nephrotic syndrome. Doctor may also recommend medications that may help control signs and symptoms or treat complications of nephrotic syndrome.

Nephrotic syndrome

Medical Management

- ❖ **Anti hypertensives:** Drugs called angiotensin converting enzyme (ACE) inhibitors reduce blood pressure and also reduce the amount of protein released in urine. Medications in this category include benazepril (Lotensin), captopril and enalapril (Vasotec).
- ❖ **Diuretics:** Help to control swelling by increasing kidneys' fluid output. Diuretic medications typically include furosemide (Lasix). Others may include spironolactone (Aldactone) and thiazides, such as hydrochlorothiazide.

Nephrotic syndrome

Medical Management

- ❖ **Statins:** Medications called statins can lower cholesterol levels. Statins include atorvastatin (Lipitor), fluvastatin (Lescol), lovastatin (Altoprev), pravastatin (Pravachol), rosuvastatin (Crestor) and simvastatin (Zocor).
- ❖ **Anticoagulants:** Medications called anticoagulants helps to decrease blood's ability to clot and may be prescribed if patient had a blood clot to reduce risk of future blood clots. Anticoagulants include heparin, warfarin (Coumadin, Jantoven), dabigatran (Pradaxa), apixaban (Eliquis) and rivaroxaban (Xarelto).

Nephrotic syndrome

Medical Management

❖ **Immune system-suppressing medications:** Medications to control the immune system, such as corticosteroids, may decrease the inflammation that accompanies underlying conditions, such as minimal change disease, lupus and amyloidosis

General management of edema

- Sodium and fluid restriction; liberal potassium
- Infusion of salt-poor albumin
- Dietary protein supplements
- Low-saturated-fat diet

Nephrotic syndrome

Nursing Management

❑ **Excess Fluid Volume** related to decreased kidney function or fluid accumulation as evidenced by Pitting edema or periorbital and facial puffiness in morning

GOAL:- To maintain the fluid volume in to patient body or to reduce the chances of edema.

- ✓ Strictly monitor and record intake and output.
- ✓ Determine potential sources of excess fluid (e.g., food, medications used).
- ✓ Advised to limit fluid intake as ordered.
- ✓ Administer corticosteroid (e.g., prednisone) as prescribed
- ✓ Teach parents on how to do dipstick urine testing and urine collection and instruct to keep a record of results.
- ✓ Teach parents regarding kidney function and disease condition

Nephrotic syndrome

Nursing Management

❑ **Imbalanced Nutrition: Less Than Body Requirements** May be related to inability to ingest and digest foods and absorb nutrients as evidenced by **Anorexia or Loss of protein**

GOAL:- to maintain the nutritional status of the patient

- ✓ Monitor client's weight daily
- ✓ Assess nutritional daily patterns including food preference, caloric intake, and diet history.
- ✓ Encourage high potassium, low-fat, low sodium diet with moderate amounts of protein.
- ✓ Provide comfortable and delightful environment during meal times.
- ✓ Consider six small nutrient-dense meals instead of three larger meals daily to reduce the feeling of fullness.
- ✓ Schedule medications in such a way that they are not administered immediately prior meals.

Nephrotic syndrome

Nursing Management

❑ **Fatigue (An overwhelming, sustained sense of exhaustion and decreased capacity for physical and mental work at usual level) may be related to discomfort as evidenced by easily fatigued with any activity or extreme edema.**

GOAL:- to reduce the discomfort of the patient

- ✓ Assess extent of fatigue, weakness, degree of edema and difficulty in
- ✓ movement or activity in bed
- ✓ Plan activities with consideration and observe for changes in behavior following an activity.
- ✓ Provide chosen play activities as tolerated and modify the schedule to allow for rest periods and after activity.

Nephrotic syndrome

Nursing Management

❑ Risk for Infection related to Inadequate secondary defenses.

GOAL:- To reduce the risk of infection

- ✓ Assess for an increase in temperature, respiratory changes (dyspnea, productive cough with yellow sputum), urinary changes (cloudy, foul-smelling urine), skin changes (tenderness, redness, swelling).
- ✓ Maintain and teach medical aseptic techniques and hand washing when providing care.
- ✓ Provide private room or share room with person who are free from infections.
- ✓ Administer antibiotic therapy as ordered.

Thank you!
Jim

