

Nephrotic Syndrome

Prepared by

Assist Prof/ Eman Hassan

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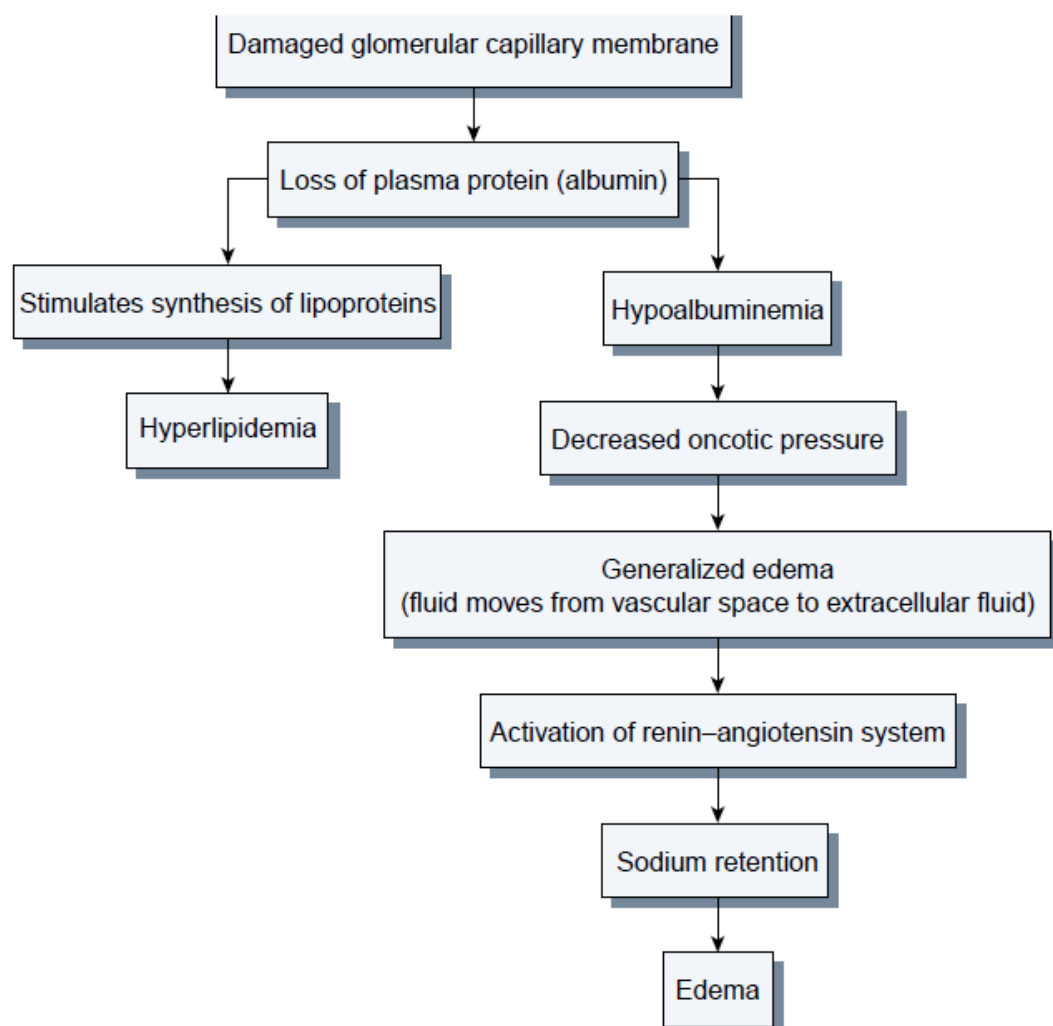
(Nephrosis)

Definition:

Nephrotic Syndrome (NS) in children is a common chronic disorder and serious medical condition, characterized by alterations of the glomerular capillary wall, resulting in

- Albuminuria
- Hypoalbuminemia
- Hyperlipidemia

Pathophysiology of nephrotic syndrome:-



Incidence:-

Approximately 80% of children with NS have a type of primary disease called minimal change nephrotic syndrome (MCNS) which incidence of 3 per 100.000 children. The annual incidence of Nephrotic Syndrome in Egypt ranged between 0.03 - 0.05 % of children presented to the Pediatric Nephrology Clinic, Ain Shams University.

Epidemiology:

- Age > 3 years, usually 2-7 years.
- Boys more than girls

Types:-

- **Primary nephrotic Syndrome** (Idiopathic) or minimal change nephrotic syndrome results from a disorder within the glomerulus of the kidney and is the common type seen in children and representing more than 90 percent of cases before 10 years of age and 50 percent after 10 years of age .

- **Secondary nephrotic syndrome** can acquire as the result of systemic disease such as; systemic lupus erythematosus, heavy metal poisoning, and cancer.

- **Congenital nephrotic syndrome** is an autosomal recessive disease caused by mutations in a major podocyte protein, Infants who have nephrotic syndrome are small for gestational age, proteinuria and edema are manifested early. The disease dose not responds to the usual therapy, and death in the first year of life

Clinical Manifestations:

- Edema

The characteristic symptom of nephrotic syndrome is edema. This occurs slowly; the child does not appear to be sick. It is noticed at first about the eyes and ankles but later generalized.



- Weight gain

The child weight gains because of the accumulation of the fluid, the abdomen may become so distended.



- The child is
 - Pale
 - Irritable
 - Restless
 - Poor appetite.



- The child becomes more susceptible to infection
- Anorexia & malnutrition.
- Vomiting & abdominal distention.
- ↓ Urinary out put due to edema.
- Pain and respiratory difficulty due to ascites, pleural effusion and pulmonary edema.
- Diarrhea due to edema of intestinal wall.
- Bp is normal or slightly↓
- The child is febrile & irritable.

Causes:

The main cause is unknown. It depends on clinical and microscopic finding, as different types of nephrotic syndrome differ in their clinical course, response to drugs and prognosis.

Complications:-

1-Increase susceptibility to infection due to:-

(Edema fluid is a good culture medium).

- Hypoproteinemia.
- ↓ Immunoglobulin levels
- ↓ Splenic function.
- ↓ Bactericidal activity of leukocytes
- Immunosuppressive therapy.

The most common site of infection is peritonitis.

2- Arterial or venous thrombosis

3- Acute or Chronic kidney failure

4- High blood cholesterol and elevated blood triglycerides

5- Poor nutrition :- Loss of too much blood protein can result in malnutrition.

Treatment:

1- Hospitalization & investigations

- Physical examinations
- Tuberculin test, chest x- ray.
- Urine culture.
- Vital signs.
- Daily monitoring of weight.

2- Physical activity as tolerated by child.

3- Restriction of salt and water if edema is sever.

4- Diuretics → in case of sever edema.

5- Specific therapy:-

- Prednisone 2 mg/kg/ day given in 3- 4 divided doses for 4 weeks then start alternate day therapy for 3-6 months.

Nursing care:-

1) Edema: -

- Skin should be dry & clean.
- Skin care to the edematous area.
- Change position frequently.

2) Weighing the child every day at the same time.

3) Well balanced and complete diet is given with:

- Limit salt intake for short time.
- Protein is given according to the degree of dysfunction of the kidney.
- Intake and output chart

4) Ascites: -

- The child should be put in semi- sitting position → to facilitate breathing.
- The nurse should be ready to help in paracentesis procedure if ordered.
- The child should void before the procedure.
- Observe and chart child's condition, amount and color of drainage.

5) Heart failure: -

- Activity is restricted, the child is put in semi-setting position and O2 therapy is given.

6) Protect the child from infection by:

- Keeping him warm & dry and don't expose him to infected persons
- Use good hand washing and aseptic technique.

7) Emotional support to parents and child and allow parents to visit the child.

8) Health teaching to parent on discharge about.

- Diet.
- Medication given.
- Prevention of infection.
- Skin care.
- Follow up.
- Frequent urine analysis for protein.

The objectives of the nursing care for children with NS start with education of the mother regarding the chronic relapsing and remitting nature of the disease, as well as the need for compliance with medications.

The child's family goals include:

- Instructing about the disease and treatment.
- Learning ways to cope with the child's long term care.
- Routine medical follow up care

References

- **Datta,P., (2007):** Pediatric Nursing, Chapter 19, P, 361 : 363.
- **Beevi, A., (2009):** Textbook of Pediatric Nursing, El Sevier, P; 306.