Nephrotic Syndrome

Definition:

It is a glomerular syndrome characterized by

1. Massive proteinurea
2. Hypoalbuminia
3. Generalized edema
4. Hyperlipidemia & lipid urea

Cause:

1. Primary cause
    - Membranous glomerulopathy
    - Minimal change diseases
    - Focal segmental glomerulosclerosis
2. Secondary cause
    - Systemic disease. e.g: DM, SLE
    - Drugs- Penicillin, heroin, NSAID
    - Infection- malaria, syphilis, hepatitis b & c
    - AIDS
    - Malignant disease

Pathophysiology: Nephrotic syndrome refers to the symptoms caused by renal injury in which **large amounts of protein are lost in the urine**. Common manifestations of the syndrome are proteinuria, edema, hypoalbuminemia, hyperlipidemia, and hypercoagulability.

C/F:

Symptoms:

1. Generalized swelling of body
2. Anorexia
3. Bigness
4. Abdominal pain
5. Diarrhea
6. Burning sensation during micturition

Sign:

1. General examinations:
    - Pitting edema

- Anemia
- Leukenychia

2. Systematic examination:
    a. Alimentary system
       Ascites may be present
    b. Respiratory system:
       Bilateral pleural effusion may be present
    c. CVS
       Feature of pericardial effusion

Complications:

- Renal failure
- Thrombosis
- Anaemic heart failure.

Nursing Management:

Nursing Care Planning and Goals

- Relieving edema.
- Improving nutritional status.
- Maintaining skin integrity.
- Conserving energy.
- Preventing infection.

Nursing Intervention:

- **Monitoring fluid intake and output.** Accurately monitor and document intake and output;
- **Improving nutritional intake.** Offer a visually appealing and nutritious diet;
- **Promoting skin integrity.** Inspect all skin surfaces regularly for breakdown; protect skin surfaces from pressure by means of pillows and padding; protect overlapping skin surfaces from rubbing by careful placement of cotton gauze; bathe regularly;
- **Promoting energy conservation.** Bed rest is common during the edema stage of the condition; balance the activity with rest
- **Preventing infection.** Protect from anyone with an infection: staff, family, visitors, and other children; handwashing and strict medical asepsis are essential; and observe for any early signs of infection.

Investigation:

- Urinary findings:
  - Proteinuria: 3+ or 4+
  - 24 hr protein in urine in children >1 gm/M2/24 hrs, in adult >3.5gm/24 hrs
  - Hyaline cast
  - Microscopic hematuria may be present in some cases
- In serum:
  - Serum cholesterol & triglyceride level>250gm/dl
  - Albumin <2.5gm/dl
  - Serum c3 normal
- Renal biopsy in steroid resistant cases

Treatment:

1. Supportive care:
   - Diet: balanced diet adequate in protein & calorie
   - Fluid & salt are not restricted unless edema is severe
   - If edema is severe then diuretics is given
   - Physical activity: as tolerated
   - Prophylactic daily oral penicillin against pneumococcal infection
   - Treatment of complication.
2. Specific:
   - Initial attack: prednisolone 60 mg/m2 body surface area daily for 6 weeks. then 40 mg/m2 body surface area single morning dose in alternate days for next 6 weeks. The alternate day dose then slowly tapered & discontinued over the next 2-3 months
   - Infrequent relapse: prednisolone 60mg/m2 body surface area daily until there is no trace of urinary protein for 3 consecutive days then 40mg body surface area single alternative days for next 6 weeks
     The alternate days dose then slowly discontinued over 2-3 months
   - Frequent relapse & steroid dependent NS: prednisolone 60 mg/m2 body surface area daily until there is no trace of urinary protein for 3 consecutive days
     - If not improved by prednisolone, then by cyclophosphamide
       - ✓ 2 mg/kg/day for 8 weeks in frequent relapse
       - ✓ 2 mg/kg/day for 12 weeks in steroid dependent case.