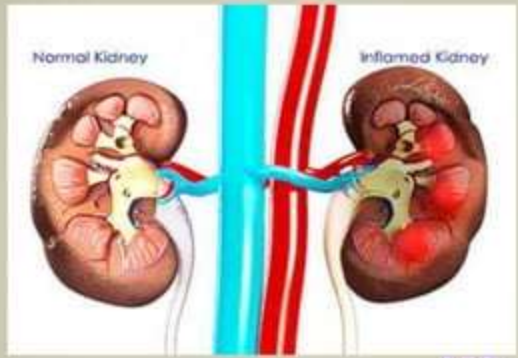
NEPHRITIS



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INTRODUCTION

Kidneys are the organs that play a major role in the functioning of different organs of the Human body. They are involved in the removal of waste matters from our body and also is involved in the purification of blood. The word *'Nephritis'* is a kind of disease that causes inflammation in the kidney bladder. It generally affects the interstitial tissues which surround the tubules and the glomeruli present in the kidney. It is also called as Acute nephritis.

This disease is caused due to the infections and also due to the immune disorders which not only affect the kidney but also the other organs present in the body. In General, it is the infection of the kidney. It also causes proliferation in the cell structure.

DEFINITION

It is a renal disease characterized by inflammation of the glomeruli or small blood vessels in the kidney.

-BRUNNER & SUDDARTH'S (2020)

❑ Infection and inflammation of the nephrons and its surrounding tissues.

- LEWIS (2021)

❑Nephritis is inflammation of the kidney and may involves the glomeruli, tubules or interstitial tissue surrounding the glomeruli and tubules

- www.Wikipedia.com (2021)

INCIDENCE RATE

- Female greater than male
- Age: elderly above 60
- The incidence ratio in INDIA was among 864 patients (2020) 29.8% were nephritis & 32.7% nephropathy with nephritis. The incidence of nephritis in the western country or part of Switzerland was low and remained stable over time.

CAUSATIVE AGENTS

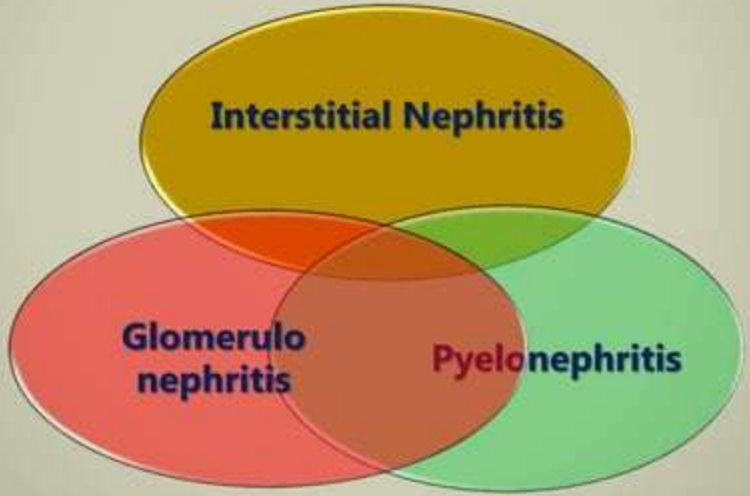
- E.coli
- Streptococcus
- Staphylococcus
- Saprophytes
- PROTEUS
- KLEBSIELLA

CAUSES/RISK FACTORS

- Streptococcus Infection Of The Throat
- Skin Infection (Impetigo)
- Hereditary Diseases
- Immune Deficiency Disorder E.G. Systemic Lupus Erythematous
- Diabetes Mellitus

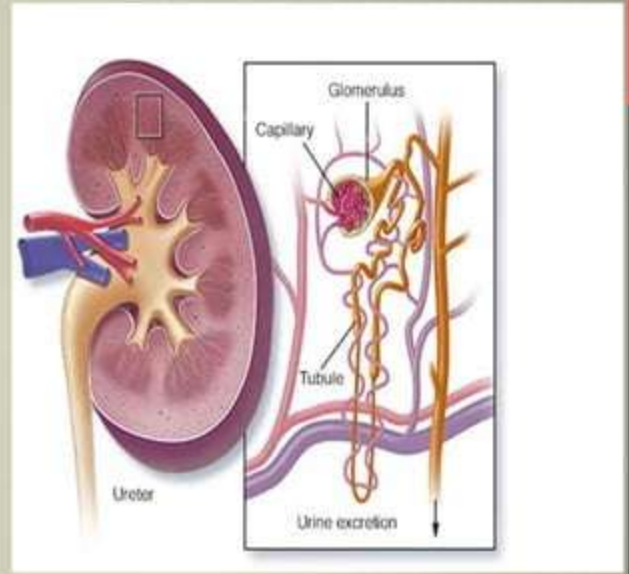
- `Vasculitis
- Viral Infections
- Endocarditis
- Family history of kidney disease & infection
- Taking many antibiotic and pain relieving medication > 5 years
- Recent surgery of the urinary tract

TYPES OF NEPHRITIS



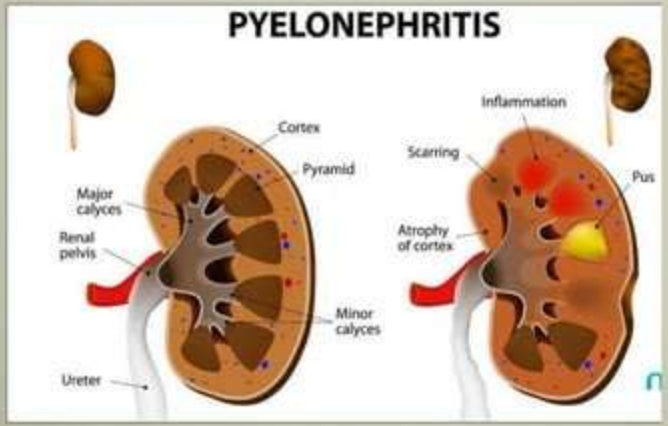
1. INTERSTITIAL NEPHRITIS

In interstitial nephritis the spaces between the kidney tubules become inflamed. This inflammation causes the kidneys to swell.



2. PYELONEPHRITIS

It's the inflammation of kidney parenchyma, pelvis, calyx and hilum, typically due to unspecified bacterial infection

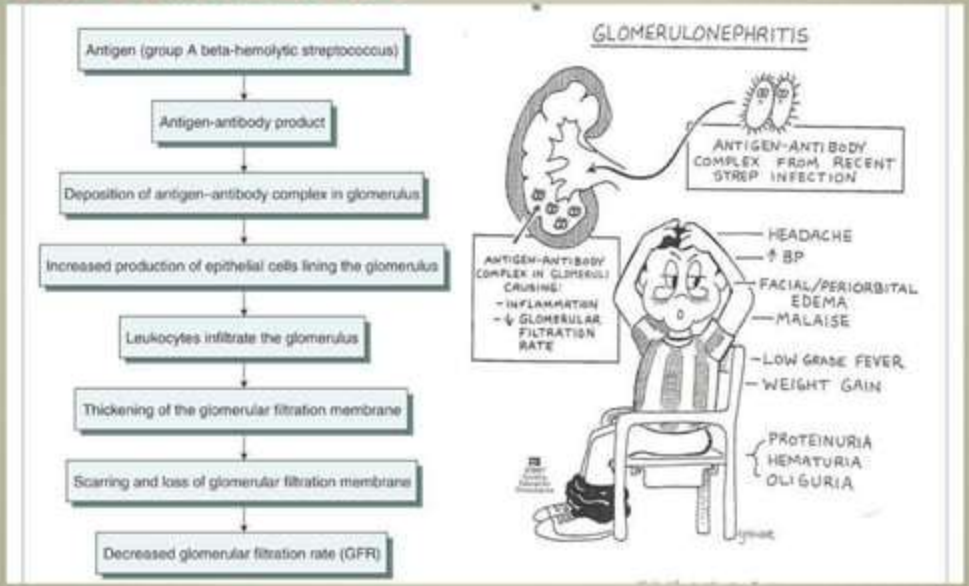


3. GLOMERULONEPHRITIS

This type of acute nephritis produces inflammation in the glomeruli. There are millions of capillaries within each kidney. Glomeruli are the tiny clusters of capillaries that transport blood and behave as filtering units. Damaged and inflamed glomeruli may not filter the blood properly.

GLOMERULO NEPHRITIS

PATHO PHSIOLOGY



CLINICAL MANIFESTATIONS

Symptoms will vary depending on the type of acute nephritis. The most common symptoms of all three types of acute nephritis are:

- Urinary frequency, urgency, hesitancy, intermittency (no continuous stream)
- cloudy urine
- Haematuria or pyuria (Blood or pus in the urine)
- pain in the FLANK area or abdomen or pelvic
- Swelling of the body, commonly in the face, legs and feet

- Fever
- Feel of pain or burning while urinating (BURNING MICTURATION)
- Vomiting & nausea
- high blood pressure

DIAGNOSTIC FINDINGS

- Complete history collection
- Physical examination
- urinalysis- which tests for the presence of blood, bacteria, and white blood cells(WBCs). A significant presence of these can indicate an infection.
- URINE CULTURE AND SENSITIVITY
- Two important indicators are blood urea nitrogen (BUN) and creatinine.

- An imaging scan, such as a CT scan or renal ultrasound, can show a blockage or inflammation of the kidneys or urinary tract.

- A renal biopsy is one of the best ways to diagnose acute nephritis. Because this involves testing an actual tissue sample from the kidney, this test isn't performed on everyone. This test is performed if a person isn't responding well to treatments, or if a doctor must definitively diagnose the condition.

MEDICAL MANAGEMENT

- **Antibiotic therapy:** To treat infection

E.g. Ampicillin, penicillin I.V. thrice in a day

- **Immunosuppressant's:** Severe cases of glomerulonephritis, caused by problems with the immune system, are sometimes treated with types of medicine known as immunosuppressant's. These medicines suppress your immune system.

E.g. Azathioprine, mycophenolate, mofetil,

Steroids: Steroids are used to reduce swelling and suppress immune system

E.g. prednisolone.

❑ Other medicines:

- **DIURETICS – ex: dytor, lasix**
- **Antihypertensive: It may need to take medicines that lower blood pressure and help reduce the amount of protein that leaks into urine, such as:**
  - ***angiotensin-converting enzyme (ACE) inhibitors***. E.g. enalapril, captopril
  - ***angiotensin receptor blockers (ARB)*** E.g.losartan, telmisartan
  - ***Calcium channel blockers*** E.g. nifedipine, amlodipine

In severe cases that cannot be improved with other treatments, it may require:

kidney dialysis – a treatment that takes over part of the kidney's job and removes waste products from your body

a kidney transplant – where a healthy kidney from a donor is surgically implanted to replace your own kidney

Nursing management

- Monitor fluid status
- Monitoring Vital signs for fever, hypertension.
- Monitor serum electrolyte status – hyperkalaemia, hypernatremia
- Monitoring of about strict intake and out put chart to rule out fluid retention.
- Monitoring levels of ascites by measuring abdominal girth.
- Monitor urine specific gravity.
- Screen for infection – fever, increased wbc etc.,
- Monitoring about complications – pulmonary edema, acidosis etc.,

- Provide adequate rest & comfortable devices
- Demonstrate about deep breathing and coughing exercises
- Change the position at least every 2 hourly.
- Make sure the patient's bed is free from crumbs or wrinkles of the sheets.
- Meet nutritional needs: Low salt diet, high protein diet.
- Encourage parents to bring the patient favoured food from home to over come the anorexia.
- Allow the child to eat with other family members.
- Provide emotional support

- Keep blood pressure and blood sugar within the healthy limits
- Prevent infections: Monitor signs of infection such as fever, increased malaise, elevated WBC.
- Educate parents, family & visitors about fluid restriction as a therapy to prevent over intake.
- Instruct family about hygiene & hand washing.
- Avoid unnecessary exposure of infections
- Continuous monitoring of an urine routine, characteristics, proteins and analysis
- Teach about regular exercises

NURSING DIAGNOSIS

1) Ineffective breathing pattern related to the inflammatory process.
2) Impaired urinary elimination related to decreased bladder capacity or irritation secondary to infection.
3) Excess fluid volume related to a decrease in regulatory mechanisms (renal failure) with the potential of water.
4) Risk for infection related to a decrease in the immunological defense.
5) Imbalanced nutrition less than body requirements related to anorexia, nausea, vomiting.
6) Risk for impaired skin integrity related to oedema and pruritus.
7) Hyperthermia related to the ineffectiveness of thermoregulation secondary to infection.

Preventive measures

Although it is not always possible to prevent nephritis, certain lifestyle practices can reduce the risk for many people. These practices include:

- maintaining a healthy weight
- quitting smoking
- keeping blood pressure and blood sugar within healthy limits
- exercising regularly
- Eating a nutritious, balanced diet can also help protect kidney health.

Complications

- Hypertension
- Electrolyte imbalance: Hyperkalaemia, Hypocalcaemia, hyperphosphatemia
- Acute and chronic renal failure
- Uraemia
- Acidosis
- Nephrotic syndrome
- Pulmonary oedema
- Congestive heart failure due to fluid overload


Thank
You