

## Acute renal failure.

- A sudden decrease in the renal function is called Acute renal failure.
- It is often reversible as long as permanent injury to the kidney has not occurred.

### CLINICAL MANIFESTATIONS:

- Oliguria
- Possible edema and fluid retention
- Elevated blood urea nitrogen (BUN) and serum creatinine.
- Alteration in serum electrolytes.

### ETIOLOGY:

- Myocardial infarction
- Decreased blood flow
- Obstruction
- Hemolytic uremic syndrome
- Glomerulonephritis.

Acute renal failure is classified as pre-renal, intra-renal and post-renal failure.

#### (1) Pre-renal failure:

- It results from impaired or reduced blood flow to the kidney.
- It can occur due to -
  - ~ Shock
  - ~ Hypotension
  - ~ Anaphylaxis
  - ~ Ischemic formation.



## (2) Intra-renal failure:

- It results from acute damage to renal structures.
- It can occur due to -
  - ~ Acute glomerulonephritis ; pyelonephritis.
  - ~ May also result from acute tubular necrosis (ATN) → **most common cause.**
  - ~ Damage of kidney structure from exposure to toxins, solvents, drugs and heavy metals

## (3) Post-renal failure:

- It results from conditions like blockage of urine outflow.
- It can occur due to -
  - ~ Obstruction of urine outflow by calculi.
  - ~ Tumors
  - ~ Prostatic hypertrophy.

## SYMPTOMS :

- Decreased kidney function
- Obstruction in urinary tract
- Blood in urine
- Reduced urine output.
- Dehydration
- Detectable abnormal mass
- Pale skin
- Poor appetite.

## DIAGNOSIS :

- (1) Routine laboratory test (creatinine & BUN)
- (2) ultrasound ~~test~~ of kidney helps to continue



whether kidney failure is acute or chronic.

(3) kidney biopsy

(4) CT scan

### TREATMENT:

- Prevention of acute renal failure through support of blood pressure and volume.
- correction of fluid and electrolytes imbalance
- Dialysis
- low protein, high carbohydrate diet to minimize the formation of nitrogenous waste.



## chronic renal failure.

- It is the end result of progressive kidney damage and loss of function.
- chronic renal failure is classified into four progressive stages based on the loss of GFR.

### 4 stages:

- (1) Diminished renal reserve  
(GFR decreased to 35 to 50% of normal)
- (2) Renal insufficiency  
(GFR decreased to 20 to 35% of normal)
- (3) Renal failure  
(GFR reduced to less than 20% of normal)
- (4) End-stage renal disease  
(GFR is less than 5% of normal)

### ETIOLOGY :

- chronic glomerulonephritis
- chronic infection
- Renal obstruction
- Exposure to toxic chemicals, toxins or drugs  
(Aminoglycoside antibiotics & nephrotoxicity)
- Diabetes.
- Hypertension
- Nephrosclerosis
- Diabetic nephropathy
- Polycystic kidney disease
- Acetaminophen syndrome.



**SYMPTOMS :**

- Anemia, increased levels of phosphates (in blood) are complication of the kidney failure.
- Malaise
- Dry skin
- Poor appetite
- Vomiting
- Bone pain
- Metallic taste in mouth
- Detectable abdominal mass

**TREATMENT :**

- Careful management of fluids and electrolytes
- Prudent use of diuretics
- Dietary management; restriction of dietary protein intake
- Renal dialysis
- Recombinant erythropoietin to treat anemia.
- Renal transplantation.