

Acute Renal Failure

Definition:

It refers to the abrupt loss or sudden decline of kidney function.

Or

It is sudden decline in renal function caused by failure of the renal circulation or by glomerular or tubular dysfunction.

Causes:

A. Pre renal cause

Result from conditions that decrease renal blood flow

- Hypovolaemia
- Shock
- Burns
- Impaired cardiac output
- Diuretic therapy

B. Post renal cause

Arise from obstruction to urine flow

- Ureteral
- Urethral

C. Intra renal causes

Result from ischemic, toxic or immunologic mechanism from intrinsic disease of renal parenchyma including glomerular, tubo-intestinal and vascular diseases.

Sign and symptoms:

- ✓ Patient become critically ill and lethargy
- ✓ Persistence nausea, vomiting and diarrhea
- ✓ Manifestation of sign and symptoms of dehydration.
- ✓ Breath may have odor of urine (uremic fetor).
- ✓ Drowsiness, headache, muscular twitching and convulsion.
- ✓ Urinary output becomes scanty.
- ✓ Low specific gravity and increase serum creatinine.

Diagnostic Evaluation:

1. Urine analysis- reveals proteinuria, hematuria
2. Rising serum creatinine and blood urea nitrogen (BUN) levels.
3. Urine chemistry examination to diminish various form of acute renal failure.
4. Renal ultrasonography for estimate of renal size and to exclude a treatable obstructive uropathy.

Management

1. Correction of any reversible cause of acute renal failure.
2. Attention to the correction of underlying fluid excess or deficit.
3. Correction and control of biochemical imbalances- treatment of hypokalaemia.
4. Restoration or maintenance of blood pressure.
5. Maintenance of nutrition.
6. Initiation of hemodialysis or continuous hemodilution for patients with progressive azotemia (abnormal retention of nitrogenous product in the blood) and other life threatening complication.

Complications

1. Infection
2. Arrhythmias due to hyperkalemia.
3. Electrolyte abnormalities (sodium, potassium, uric acid, calcium, phosphorus).
4. Gastrointestinal bleeding due to stress ulcer.
5. Multiple organ system failure.