ACUTE KIDNEY INJURY
Acute kidney injury (AKI) is a sudden episode of kidney failure or kidney damage that happens within a few hours or a few days. AKI causes a build-up of waste products in our blood and makes it hard for our kidneys to keep the right balance of fluid in our body. Acute kidney failure also called acute renal failure, is most common in hospitalized people, particularly critically ill people undergoing intensive care. Acute kidney failure can be fatal and requires intensive treatment.
Symptoms

Signs and symptoms of acute kidney injury differ depending on the cause and may include:

- **Decreased urine output**, although occasionally urine output remains normal
- **Fluid retention**, causing swelling in your legs, ankles or feet
- **Confusion**
- **Chest pain** or pressure
- **Drowsiness**
- **Shortness of breath**
- **Fatigue**
- **Nausea**
- **Seizures** or coma in severe cases
Acute kidney injury can have many different causes. AKI can be caused by the followings:

**Decreased blood flow**

Diseases and conditions that may slow blood flow to the kidneys and lead to kidney failure includes:

- Blood or fluid loss
- Liver failure
- Infection
- Blood pressure medications
- Heart attack
- Heart disease
- Use of aspirin
- Ibuprofen, naproxen or related drugs
- Severe dehydration
- Severe allergic reaction
- Severe burns
Direct damage to the kidneys

These diseases, conditions and agents might damage the kidneys which could lead to acute kidney failure:

- Blood clots in the veins and arteries in and around the kidneys
- Cholesterol deposits blocking blood flow in the kidneys
- Glomerulonephritis, inflammation of the tiny filters in the kidneys
- Hemolytic uremic syndrome, a condition that results from premature destruction of red blood cells
- Infection
- Lupus, an immune system disorder causing glomerulonephritis
- Medications, such as certain chemotherapy drugs, antibiotics, dyes used during imaging tests and zoledronic acid, used to treat osteoporosis and high blood calcium levels
- Multiple myeloma, a cancer of the plasma cells
- Scleroderma, a group of rare diseases that affect the skin and connective tissues
- Thrombotic thrombocytopenic purpura, a rare blood disorder
- Toxins, such as alcohol, heavy metals and cocaine
- Vasculitis, an inflammation of blood vessels

Blockage of urinary tract

In some people, conditions or diseases can block the passage of urine out of the body and can lead to AKI. Blockage can be caused by:

- Bladder, prostate, or cervical cancer
- Enlarged prostate
- Problems with the nervous system that affect the bladder and urination
- Kidney stones
- Blood clots in the urinary tract
Diagnosis

Diagnosis and test procedure depends upon the cause of acute kidney disease. It is important that AKI is found as soon as possible because it can lead to chronic kidney disease, or even kidney failure. It may also lead to heart disease or death. The following tests may be done:

Urine output measurements
The amount of urine excreted in a day may help to determine the cause of kidney failure.

Urine tests
Analyzing a sample of urine, a procedure called urinalysis, may reveal abnormalities that suggest kidney failure.

Blood tests
A sample of blood may reveal rapidly rising levels of urea and creatinine - two substances used to measure kidney function.

Imaging tests
Imaging tests such as ultrasound and computerized tomography may be used to help to determine kidney diseases.

Removing a sample of kidney tissue for testing
In some situations, doctors may recommend a kidney biopsy to remove a small sample of kidney tissue for lab testing.
Treatment

**Most people with acute kidney failure are already hospitalized.** Treatment for acute kidney failure involves identifying the cause illness or injury that originally damaged the kidneys. Treatments that help prevent complications include -

**Treatments to balance the amount of fluids in your blood.** If acute kidney failure is caused by a lack of fluids in blood, doctor may recommend intravenous (IV) fluids. In other cases, acute kidney failure may cause you to have too much fluid, leading to swelling in your arms and legs. In these cases, your doctor may recommend medications (diuretics) to expel extra fluids.

**Medications to control blood potassium.** If kidneys aren't properly filtering potassium from blood, doctor may prescribe calcium, glucose or sodium polystyrene sulfonate to prevent the accumulation of high levels of potassium in blood. Too much potassium in the blood can cause dangerous irregular heartbeats (arrhythmias) and muscle weakness.

**Medications to restore blood calcium levels.** If the levels of calcium in our blood drop too low, doctor may recommend an infusion of calcium.

**Dialysis to remove toxins from your blood.** If toxins build up in our blood, one may need temporary hemodialysis - often referred to simply as dialysis - to help remove toxins and excess fluids from your body while our kidneys heal. Dialysis may also help remove excess potassium from our body. During dialysis, a machine pumps blood out of your body through an artificial kidney (dialyzer) that filters out waste. The blood is then returned to our body.
Thank You

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