

Acute Kidney Injury

Case 1

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Definition

-is the sudden loss of your kidneys' ability to perform their main function of eliminating excess fluid and salts (electrolytes) as well as waste material from your blood. When your kidneys lose their filtering ability, dangerous levels of fluid, electrolytes and wastes accumulate in your body.

-Develops rapidly over a few hours or a few days. It is most common in people who are already hospitalized, particularly in critically ill people who need intensive care.

-can be fatal and requires intensive treatment. However, acute kidney failure may be reversible.

Problems and Hypothesis

Bleeding	Drop in blood pressure	Decreased urine output	Required blood transfusion (intra)
<ul style="list-style-type: none"> -Ibuprofen effect(antiplatelet) -Thrombocytopenia -Increase in blood pressure -Decrease in clotting factors -Decrease in vitamin K (Responsible for clotting factor production) -Vessels injury 	<ul style="list-style-type: none"> -Hypovolemia(due to bleeding) -Anesthesia(leads to vasodilation) -Lisinopril effect (ACEI= antihypertensive agent) -Renal failure -Parasympathetic nervous system stimulation -Heart failure 	<ul style="list-style-type: none"> -Acute kidney injury= Acute renal failure= Acute tubular necrosis -Hypovolemia -Hypotension -Increase in fluid retention -Urinary tract obstruction -Kidney stone -Renal Hypoperfusion -Glomerulonephritis -Acute interstitial nephritis 	<ul style="list-style-type: none"> -Hypovolemia -Drop in blood pressure

Causes

1-Diseases and conditions that slow blood flow to the kidneys	2-Diseases and conditions that may damage the kidneys	3-Diseases and conditions that block urine from leaving the body
<ul style="list-style-type: none">-Blood loss-Blood pressure medications-Heart attack-Heart disease-Infection-Liver cirrhosis-Nonsteroidal anti-inflammatory drugs, such as aspirin, ibuprofen and naproxen-Severe allergic reaction (anaphylaxis)-Severe burns-Severe dehydration	<ul style="list-style-type: none">-Blood clots in the veins and arteries in and around the kidneys-Cholesterol deposits that block blood flow in the kidneys-Glomerulonephritis-Hemolytic uremic syndrome-Infection-Lupus-Medications levels (hypercalcemia)-Multiple myeloma-Scleroderma-Thrombotic thrombocytopenic purpura-Toxins, such as alcohol, heavy metals and cocaine-Vasculitis	<ul style="list-style-type: none">-Bladder cancer-Blood clots in the urinary tract-Cervical cancer-Colon cancer-Enlarged prostate-Kidney stones-Nerve damage involving the nerves that control the bladder-Prostate cancer

Sign and symptoms

- Decreased urine output, although occasionally urine output remains normal
 - Fluid retention, causing swelling in your legs, ankles or feet
 - Drowsiness
 - Shortness of breath
 - Fatigue
 - Confusion
 - Nausea
 - Seizures or coma in severe cases
 - Chest pain or pressure
- *Sometimes acute kidney failure causes no signs or symptoms and is detected through laboratory tests done for another reason.

Tests and diagnosis

- Urine output measurements.
- Urine tests.
 - BUN
 - Creatinine Clearance
 - Serum Creatinine
 - Urinalysis
- Blood tests.
- Imaging tests.(e.g. CT for the kidney)
- Removing a sample of kidney tissue for testing.

Treatment

- Treating the underlying cause of your kidney failure
- Treating complications until your kidneys recover:
 - Treatments to balance the amount of fluids in your blood.(IV fluid or diuretics)
 - Medications to control blood potassium.
 - Medications to restore blood calcium levels.
 - Dialysis to remove toxins from your blood.

Complications

-Permanent kidney damage:

acute kidney failure can causes permanent loss of kidney function, or end-stage renal disease.

-Death.

Prevention

- Follow instructions on over-the-counter medications.
- Work with your doctor to manage kidney problems.

Risk Factor

- Being hospitalized, especially for a serious condition that requires intensive care
- Advanced age
- Blockages in the blood vessels in your arms or legs (peripheral artery disease)
- Diabetes
- High blood pressure
- Heart failure
- Kidney diseases
- Liver disease
- Taking zoledronic acid (Reclast, Zometa), by people with moderate to severe kidney impairment