Kidney Injury Disorders

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INTRODUCTION

Acute kidney injury, also called acute renal failure, is a brief duration of kidney failure or damage that lasts a few hours or days. AKI causes waste products to build up in your blood, making it impossible for your kidneys to maintain a healthy fluid balance in your body.

AKI can be categorised as prerenal (due to reduced blood flow to the kidney), intrinsic renal (due to damage to the kidney itself), or postrenal (due to damage to the kidney itself) (due to blockage of urine flow). Sepsis, vomiting, excessive blood loss, cardiogenic shock, heart failure, cirrhosis, and some drugs like ACE inhibitors or NSAIDs are all prerenal causes of AKI.

Glioma, lupus nephritis, acute tubular necrosis, some antibiotics, chemotherapeutic agents, and contrast dye used in imaging are all intrinsic renal causes of AKI. Kidney stones, bladder cancer, neurogenic bladder, enlargement of the prostate, narrowing of the urethra, and some drugs like anticholinergics are all postrenal causes of AKI.

AKI is diagnosed based on a person's signs and symptoms, as well as lab testing for serum creatinine and urine production measurement. Urine microscopy and urine electrolytes are two other studies. When a postrenal cause is suspected, a renal ultrasound may be obtained. When intrinsic renal AKI is suspected and the cause is unknown, a kidney biopsy can be performed.

Acute Kidney Injury Study

AKI affects 10-15% of patients admitted to the hospital and more than 50% of those admitted to the intensive care unit (ICU). AKI can cause metabolic acidosis, high potassium levels, uremia, and changes in body fluid balance, among other complications. and death, as well as effects on other organ systems. People who have had AKI have a higher chance of having chronic

kidney disease later in life. Treatment of the root cause as well as supportive care, such as renal replacement therapy, are all part of the management process.

The underlying cause always dominates the clinical presentation. Acute kidney damage manifests itself in a variety of ways due to the disease's multiple impairments of kidney function. Symptoms include fatigue, lack of appetite, headache, nausea, and vomiting as urea and other nitrogencontaining compounds accumulate in the bloodstream. Potassium levels that rise dramatically can cause serious and life-threatening irregular heart rhythms. Though blood pressure may be high, low, or average, fluid equilibrium is frequently impaired.

Some disorders (such as clotting of the blood vessels in the kidneys or kidney inflammation) may cause pain in the flanks. Stretching of the fibrous tissue capsule that surrounds the kidney causes this. There may be thirst as well as signs of fluid loss on physical examination if the kidney injury is caused by dehydration. A rash in interstitial nephritis (or vasculitis) and a palpable bladder in obstructive nephropathy, for example, may provide additional clues as to the underlying cause of the kidney issue.

The detection and treatment of the underlying cause is critical in the management of AKI. The key goals of initial management are to avoid cardiovascular failure and death, as well as to seek nephrologist advice. AKI is commonly managed by avoiding compounds that are harmful to the kidneys, known as nephrotoxins, in addition to treating the underlying condition. NSAIDs like ibuprofen and naproxen, iodinated contrasts like those used in CT scans, many antibiotics like gentamicin, and a variety of other substances are among them.

Kidney function is regularly monitored using serial serum creatinine measurements and urine production testing. The insertion of a urinary catheter in the hospital aids in the monitoring of urine flow and the relief of potential bladder outlet obstruction, such as that caused by an enlarged prostate.

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