Post Renal Acute Kidney Injury (AKI) Diagnosis and Management

PLAY PICMONIC

Diagnosis

Physical Examination
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Physical Examination in a patient with post-renal AKI may reveal a distended bladder and abdominal pain.

**BUN:Creatinine ratio of 20:1 in the Initial Stages
**
Early Bird, Early-sun, Bun with Cr-eam Ratio of (20) Dollar-bill to (1) Wand
The BUN:Cr ratio in the initial stages of post-renal AKI is typically at or above 20:1. This is similar to pre-renal acute kidney injury and can be a source of confusion. As such, the BUN:Cr ratio cannot be used alone to establish a diagnosis of either pre-renal or post-renal AKI. Further diagnostic studies are needed to differentiate between these 2 diseases.

BUN:Creatinine ratio of 10:1 in the late stages
Running late runner, Late-moon Bun with Cr-eam Ratio of (10) Tin to (1) Wand
The BUN:Cr ratio in the late stages of post-renal AKI is typically at or above 10:1. This ratio is similar to that which is seen in intrinsic AKI and can be a source of confusion.

As the obstruction persists for a prolonged period of time and the kidney undergoes permanent damage, more tubular cells die. The increased tubular cell death is similar to that which is seen in acute tubular necrosis, a subtype of intrinsic AKI. Hence, the BUN:Cr creatinine ratio in the late stages of post-renal AKI is similar to that of intrinsic AKI.

 The BUN:Cr ratio cannot be used alone to establish a diagnosis of either intrinsic or post-renal AKI. Further diagnostic studies are needed to differentiate between these 2 diseases.

Urine Osmolality <350 mOsm/kg
Urinal Ozzy-mole Less-than 350, 3-tree and 50-cent Rapper
The Urine Osmolality in post renal AKI is typically below 350 mOsm/kg.

Variable Fractional Excretion of Sodium (FENa)
Up and Down Arrow FENA-agent
The FENA is variable and cannot be used to distinguish post-renal AKI from pre-renal or intrinsic AKI.

Ultrasound
Ultrasound
Ultrasound can be used to evaluate the degree of hydronephrosis present in patients with post-renal acute kidney injury.

CT Scan
Cat-scanner
CT scan can be used to diagnose the cause of the post-renal acute kidney injury as well as the degree of hydronephrosis.

Management

Treat Underlying Cause

Treat Underlying Attacker

There are multiple etiologies of post-renal acute kidney injury including: benign prostatic hyperplasia, neoplasms, incomplete bladder emptying due to autoimmune diseases such as multiple sclerosis, and other causes of bilateral kidney outflow obstruction. Severe acute obstructions can cause permanent damage to the kidney. Complete recovery is possible if the obstruction is relieved within 14 days of onset.
