AKI (Acute Kidney Injury)

Patients gave very short history (days) of decrease urine output and renal dysfunction, usually associated with swelling over face and feet with deceased appetite and occasionally nausea and vomiting.

Best part is "it is reversible" usually completely but delay in treatment will lead to incomplete/ partial recovery of kidney function.

Worst part is "it may have stormy course" delay in treatment can be life threatening.

Treatment is completely dependent on the cause. Based on the cause of kidney injury we can divide kidney injury in 3 main types-

1. **Pre-renal (before actual Kidney)-**

   In these cases, blood volume decreased (water/ blood loss from body, as in case of vomiting, diarrhea or blood loss from trauma) or blood supply to kidney decreased (any type of shock leads to very low blood pressure or when kidney blood vessels narrowing/ blockade happen).

   If we are able to maintain blood pressure or volume (of water/ blood) on time **its completely reversible.**

   "Prevention is better than cure" is best suited for this type of kidney injuries. Prevention of blood/ volume loss while ongoing loss is happening or supplementing them at the earliest and maintaining BP is needed to avoid its complication- irreversible loss of kidney function and occasionally life threatening complications!

2. **Renal (Actual kidney is affected!)**

   In these cases, usually we need early Nephrologists' attention and in most of the cases kidney biopsy is required to diagnose the exact cause before start of specific treatment. Time is very important…they may become dialysis dependent BUT after specific treatment almost all come out of dialysis and most of them reach to previous good renal function. Delay increase dialysis dependent duration and leads to incomplete recovery!

3. **Post-renal (After actual Kidney)**

   Here urine flow is obstructed (by stone, stricture, tumor, prostate) somewhere in between kidney to outward…usually we require uro-surgeon's help! It's usually completely reversible but delay will cause partial recovery and electrolyte imbalance.

Outcome of treatment of Acute Kidney injury is completely dependent on "How bad the disease was?" (severity of the disease). Based on the severity we can divide Acute Kidney injury in 5 stages.

"RIFLE" criteria, include five categories ***(Risk, Injury, Failure, Loss, ESRD)***

1. **Risk**- To organ, usually completely reversible.

2. **Injury**- worse than Risk…but most of them completely reversible, few might require transient dialysis support.
3. **Failure** – worse than Injury…but chances of irreversibility increases, most require transient dialysis support, but most come out of it!
4. **Loss**- Remain dialysis dependent for >4weeks but <3 months, almost all have residual kidney dysfunction remained.
5. **End stage**- Remain dialysis dependent for >3 months, they ultimately require Renal Replacement Therapy in the form of Hemodialysis/ Peritoneal dialysis/ Transplant