Oliguric

Dehydration related, AKI related

Causes for AKI – **DODIVeryHappy**

Dehydration

Obstruction

Drugs

Infection

Vasculitis

Hypertensive emergency

Pre Renal- due to reduced renal blood flow

Renal- due to disease of glomerulus, interstitial or tubule

Post renal- due to obstruction impairing drainage of the kidneys

12.2.2 Staging of acute kidney injury

Acute kidney injury staging can be performed using serum creatinine or urine output criteria (Table 12.1). Patients should be staged according to whichever criterion gives them the highest stage.

Table 12.1 Staging system for acute kidney injury (AKI)

Stage	Serum creatinine (SCr) criteria	Urine output criteria
1	SCr increase ≥ 26 μmol/L or SCr increase ≥ 1.5 to 2-fold from baseline	<0.5 ml/kg/h for >6 consecutive hours
2	SCr increase ≥ 2 to 3-fold from baseline	<0.5mL/kg/h for >12 h
3	SCr increase ≥ 3-fold from baseline or SCr increase ≥ 354 μmol/L or commenced on renal replacement therapy irrespective of stage	<0.3mL/kg/h for >24 h or anuria for 12 h

Data from Acute kidney injury (March 2011). UK Renal Association. www.renal.org/Clinical/GuidelinesSection/AcuteKidneyInjury

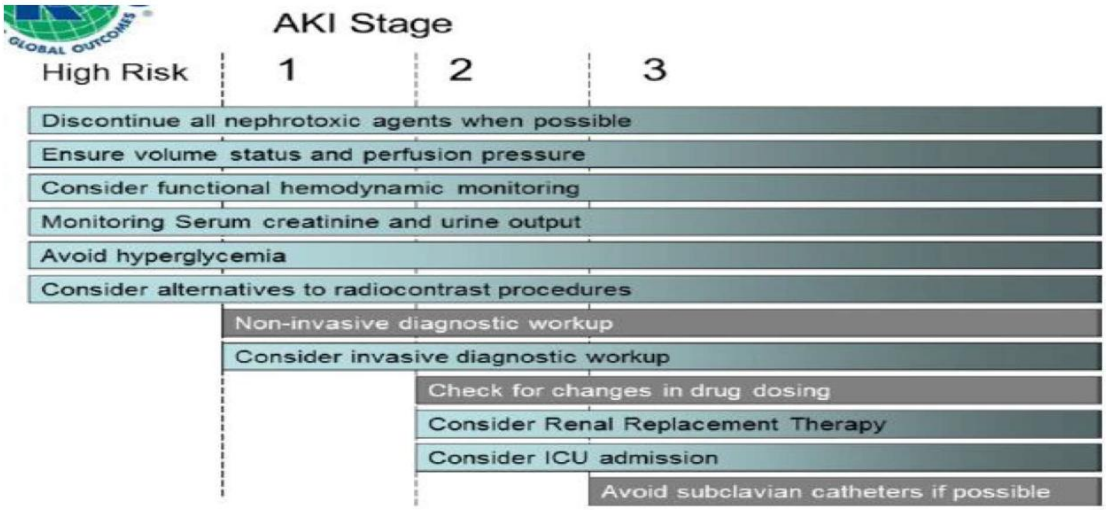
Table 12.2 Causes of intrinsic renal failure

Tubular disease	• Ischaemic acute tubular necrosis • Nephrotoxic drugs (e.g. aminoglycosides, radio-contrast, NSAIDs) • Rhabdomyolysis
Interstitial disease	• Acute interstitial nephritis (usually due to a drug induced allergic reaction, e.g. penicillins, NSAIDs) • Infiltrative disease: sarcoidosis, lymphoma • Autoimmune disease: SLE
Glomerular disease	• Glomerulonephritis
Vascular disease	• Malignant hypertension • Haemolytic uraemic syndrome • Renal vein thrombosis • Thrombotic thrombocytopenic purpura

Table 12.3 Level and causes of obstruction

Urethra and bladder	• Benign prostatic hypertrophy • Cancer of the bladder, prostate, cervix, or colon • Uretheral stricture • Neurogenic bladder (diabetes, spinal cord disease, multiple sclerosis, anticholinergic drugs)
Ureter	• Calculi • Cancer of the ureter, uterus, or colon • Vesicoureteric reflux • Aortic aneurysm • Pregnant uterus • Inflammatory bowel disease • Retroperitoneal fibrosis • Trauma • Papillary necrosis (sickle cell disease, diabetes, pyelonephritis)
Intra-renal	• Crystals: uric acid, aciclovir, sulphonamides • Protein casts: multiple myeloma, amyloidosis

Management


AKI Stage
High Risk
1
2
3
Discontinue all nephrotoxic agents when possible
Ensure volume status and perfusion pressure
Consider functional hemodynamic monitoring
Monitoring Serum creatinine and urine output
Avoid hyperglycemia
Consider alternatives to radiocontrast procedures
Non-invasive diagnostic workup
Consider invasive diagnostic workup
Check for changes in drug dosing
Consider Renal Replacement Therapy
Consider ICU admission
Avoid subclavian catheters if possible