

# Acute Kidney Injury (AKI) Protocol

## PREVENTION

- Monitor serum creatinine and fluid balance closely in "at risk patients"
- Avoid dehydration
- Avoid hypotension (systolic BP < 100 mmHg)
- Caution in use of NSAIDs
- ACE - ARBs
  - Evening prescription
  - Stop if dehydrated / hypotensive or deteriorating renal function
- Monitor aminoglycosides closely

### Contrast Nephropathy

(GFR < 30 or GFR < 60 + risk factors)

- Omit ACE-ARB / NSAID 12hrs pre-procedure
- 0.9% saline OR 1.4% NaHCO<sub>3</sub> @ 3mls/kg/hr x 1 hr pre procedure then 1ml/kg/hr x 6 hrs post-procedure
- Check U+E 24 hrs post procedure.

## AT RISK PATIENTS

- Pre-existing chronic kidney disease (CKD)
- Older age (> 60 years old)
- Sepsis
- Co-existing illness including: Cardiac failure, Liver disease, Diabetes mellitus
- Use of NSAIDs or COX II inhibitor drugs)
- Use of ACE inhibitor or ARB medication particularly in the setting of hypovolaemia
- Hypotension (systolic blood pressure < 100 mmHg)
- Symptoms and signs of hypovolaemia (vomiting, diarrhoea, tachycardia hypotension)
- Urinary tract symptoms (especially reduced urine output or anuria)
- Those receiving intravenous contrast for diagnostic and therapeutic procedures)

## RECOGNITION

Creatinine ↑ by ≥ 30 µmol/L or ↑ from baseline by 50%  
and / or  
Urine output < 30mls / hr for > 6 hr

## TREATMENT - 5 points to consider

### 1. Correct Dehydration

- Rapid infusion repeated small volumes (250mls) to achieve Cap. Refill time < 3 secs / SBP > 100, visible JVP)
- Consider CVP if uncertain of volume status
- When dehydration corrected prescribe maintenance fluids @ hourly rate (total losses + 50 mls/hr)
- Avoid K<sup>+</sup> containing fluids if K<sup>+</sup> > 5.5 mmol/L

### 2. Review All Drugs

- Stop drugs which interfere with renal function (NSAID / ACE/ARB)
- Stop BP lowering medication in hypotensive/hypovolaemic patients.
- Review doses of all other drugs

### 3. Restore Effective BP

- Fluid challenges (250 - 500mls crystalloid or colloid to achieve systolic BP > 100 mmHg)
- If SBP < 100 mmHg despite 1.5L IV fluid over 1 hr consider vasopressor therapy in HDU - ICU

### 4. Relieve Obstruction

### 5. Treat Hyperkalaemia

## INDICATIONS FOR NEPHROLOGY REFERRAL

- Refractory hyperkalaemia (> 6.5)
- Refractory pulmonary oedema
- Refractory metabolic acidosis (pH < 7.2)
- Progressive renal failure (creatinine > 300 µmol/L or rise of > 100 µmol/L/day)
- Possible intrinsic renal disease

### INTRINSIC RENAL DISEASE

- Absence of obvious cause of AKI
- 3 - 4+ Protein ± Blood on Urinalysis
- ? Vasculitis (rash, arthralgia, pulmonary infiltrates - request urgent ANCA + anti GBM titres)
- Thrombocytopenia + haemolytic anaemia (HUS)