Acute Kidney Injury Care Pathway / Care Bundle

Apply in all patients where AKI is suspected or in all patients with a 1.5 x rise in creatinine or oliguria (<0.5mls/kg/hr) for >6 hours)

This is a Medical Emergency

Full set of physiological observations including fluid balance
Assess for signs of shock/hypoperfusion
If EWS triggering give oxygen to achieve target saturations and begin resuscitation.
Ensure medical review in accordance with Trust referral and escalation pathway.
Contact critical care outreach/ night practitioner where available

Fluid Therapy in AKI

Assess hydration status including heart rate, blood pressure, capillary refill (normal <2secs), conscious level.
If hypovolaemic, give bolus fluids(e.g. 250-500mls) crystalloid with regular review of response.
Ensure registrar contacted and aware of patient
If no improvement following >2 litres filling, contact registrar for review within 30 minutes
If the patient is euvolaemic, give maintenance crystalloids (estimated output plus 500mls)

Monitoring in AKI

Do venous blood gas and lactate. Do arterial blood gas if potassium result not available
Insert urinary catheter. If not catheterised document reasons why. Measure hourly urine volumes and strict fluid balance.
Measure urea, creatinine, bone, other electrolytes and venous bicarbonate at least daily while creatinine rising.
Measure daily weights, keep a fluid chart and perform a minimum of 4 hourly observations and EWS.

Clinical examination and investigation of AKI

Investigate the cause of all AKI unless multi-organ failure or obvious precipitant
Urine dipstick, MSSU, FBC, U&Es, LFTs, CRP and CKHCO3.
If proteinuria is present perform spot urine protein creatinine ratio (PCR).
USS should be performed within 24 hours unless AKI cause is obvious or AKI is recovering. USS ideally within 6 hours if obstruction with infection (pyonephrosis) is suspected.
Autoimmune screen if glomerulonephritis/ vasculitis suspected

Supportive AKI care

Treat sepsis – in severe sepsis intravenous antibiotics should be administered within 1 hour of recognition.
Stop nephrotoxic drugs including NSAID/ACE.ARB/Metformin/K-sparing diuretics. Review all drug dosages.
If ureamic and symptomatic, give proton pump inhibitor unless contra indicated.
If hypovolaemic consider stopping diuretics and anti-hypertensives.

Suspected vasculitis or pulmonary renal syndromes are renal emergencies. Inform nephrologist immediately. Seek nephrology advice if patient meets any of the referral criteria detailed below

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*Signs of Uraemia: nausea, vomiting, altered level of consciousness, abnormal bleeding

Referral from Pennine Acute Hospital to Nephrology: Who to refer

Requests for nephrology advice for all acute in patients should be made by liaising with in-reach nephrologist for hospital site or, if unavailable, to local on call renal team.

Contact details by site:

ROH: Dr PM Uthappa (on site Fridays only) sec 78015 or out of hours SRFT Renal SpR or on call Nephrology consultant (*via SRFT switchboard 0161 789 7373)*

FGH: Dr S Sinha (on site Tuesday/Thursday) 0161 778 2654 or fax 0161 778 3917) or out of hours SRFT Renal SpR or on call Nephrology consultant (via SRFT switchboard 0161 789 7373),

NMGH: Dr S Dulloo (on site) sec 42603 or out of hours MRI renal SpR or on call Nephrology consultant (via MRI switchboard 0161 276 1234)

Referral is recommended if:

- Possibility of AKI as an initiating event (with subsequent systemic decompensation) – i.e. AKI 3 early in illness
- Single organ failure
- AKI with possible vasculitis, lupus or autoimmune disease
- AKI in myeloma or malignancy or tumour lysis
- AKI with unexplained pulmonary infiltrates or pulmonary haemorrhage
- Haemolytic Ureamic Syndrome /Thrombotic Thromocytopaenic Pupura
- AKI with:
    - pregnancy
    - urological abnormalities
    - malignant hypertension
    - poisoning
    - Existing renal replacement therapy

Kidney transplant patients: Immediately inform MRI transplant unit for all pancreas and for renal transplant < 3mth *(0161 276 5106),* renal physician -on site tues/thurs *(0161 778 2654/ fax 778 3917)* or SRFT on call Nephrologist out of hours (*SRFT switch 0161 789 7373)*

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Transfer to Nephrology (Kidney) Ward

(Inter hospital transfer)

Phone Local Renal Team –

(*record on Tertiary referral form)*

Below is a guideline for ensuring the safe transfer of a patient to specialist renal wards *If the patient is accepted by the tertiary centre the following criteria should be discussed with the renal team in order to assess appropriateness of transfer. Discussion should be with minimum renal registrar level but patients outside these criteria should be discussed at consultant to consultant level .If the patient requires critical care at the receiving hospital, a critical care bed must be booked by the referring (Pennine) team with the ICU team at the receiving hospital. NB: Vascular patients who require ongoing vascular input will need to be transferred to MRI*

Metabolic

K^+ < 6.5 (with no hyperkalaemic ECG changes), ionised Ca > 1mmol/l
pH >7.25
Bicarbonate > 16 mmol/l
Lactate < 2

Respiratory

Respiratory rate >11/min and <26/min
Saturations >94% on not more than 35% oxygen
If patient required acute CPAP must have been independent of this treatment for 24 hours
Not in need of respiratory support

Circulatory

Heart rate > 50/min and < 120/min
BP > 90mmHg systolic
MAP > 60 mmHg
If given inotropes must have been inotrope independent > 24 hours

Neurological

Alert AVPU (unless stable, chronic neurological impairment)

Where these clinical criteria can not be met, advice should be sought from the critical care team regarding on stabilisation and ongoing management/ escalation of the patient