St Helens and Knowsley Teaching Hospitals NHS
NHS Trust

ACUTE KIDNEY INJURY BUNDLE

ACT & BEAT AKI©

Hosp No
Name
Address

Date of Birth Age

Date _____ **Time** _____

ASSESSMENT BUNDLE 'ACT' (INITIATE ASAP & COMPLETE WITHIN FIRST 4 HOURS)

ASSESS RISK FACTORS: Tick all that apply

- ☐ Chronic Kidney Disease
- ☐ Diabetes
- ☐ Hypovolaemia
- ☐ Age ≥ 65
- ☐ Iodinated contrast in past week
- ☐ Recent Intraperitoneal surgery
- ☐ Heart failure
- ☐ history of AKI
- ☐ Sepsis
- ☐ Neurological or Cognitive impairment that limits access to fluids
- ☐ Symptoms suggesting complications of AKI
- ☐ New onset or significant worsening of urological symptoms
- ☐ Liver disease
- ☐ Oliguria
- ☐ Deteriorating EWS
- ☐ **NO RISK FACTOR**

IF RISK FACTOR IDENTIFIED COMMENCE AKI PREVENTION MEASURES BELOW

AKI PREVENTION MEASURES

- ☐ Measure Urea, Creatinine and electrolytes (U&E) immediately and repeat within 24hrs
- ☐ Initiate monitoring using Early Warning Score Chart and escalate as per policy
- ☐ Assess fluid requirement and aim to achieve urine output > 0.5ml/kg/hour and avoid hypotension
- ☐ Observe caution with iodinated contrast following Contrast Induced Nephropathy guidance
- ☐ Consider altering medications with nephrotoxic potential where practicable

CONFIRM & STAGE: Confirm AKI using **ANY** one of the following criteria

1. Serum creatinine rises by ≥ 26µmol/L within 48 hours **or**
2. Serum creatinine rises ≥ 1.5 fold from the reference value which is known or presumed to have occurred within one week **or**
3. Urine output is < 0.5ml/kg/hr for > 6 consecutive hours

AKI results will have a '? AKI' alert on IMS Maxims OCS

AKI CONFIRMED? ☐ **YES** (Indicate **Stage** below) ☐ **NO** (continue with AKI prevention measures)

Stage	Serum Creatinine Criteria	Urine Output Criteria
☐ 1	increase ≥ 26 µmol/L within 48hrs **or** increase ≥1.5 to 1.9 X reference Creatinine	<0.5 mL/kg/hr for > 6 consecutive hrs
☐ 2	increase ≥ 2 to 2.9 X reference Creatinine	<0.5 mL/kg/ hr for > 12 hrs
☐ 3	increase ≥3 X reference Creatinine **or** Creatinine ≥354 µmol/L **or** commenced on renal replacement therapy (RRT) irrespective of stage	<0.3 mL/kg/ hr for > 24 hrs or anuria for 12 hrs

TREAT CAUSE & COMPLICATIONS: Document Cause below and commence treatment of cause.

If cause is unknown within 4 hours - document as currently unknown. Mnemonic HOSPITAL may help

Hypoperfusion, **O**bstruction, **S**epsis, **P**arenchymal Kidney Disease (e.g glomerulonephritis),
Injury to muscle & cell lysis (Rhabdomyolysis), **T**oxins (Drug or Contrast),
Acute trauma/emergency surgery (particularly intraperitoneal), **L**iver decompensation.

CAUSE _____

- ☐ Patient Information leaflet given to patient / carer

IF AKI IS CONFIRMED COMMENCE MANAGEMENT BUNDLE OVERLEAF

Name	Grade	Bleep No.	Signature

St Helens and Knowsley Teaching Hospitals NHS
NHS Trust

ACUTE KIDNEY INJURY BUNDLE

ACT & BEAT AKI©

Hosp No
Name
Address

Date of Birth Age

Date _____ **Time** _____

MANAGEMENT BUNDLE 'BEATAKI' (INITIATE ASAP & COMPLETE WITHIN FIRST 24 HOURS)

BLOODS

Baseline creatinine:_____ Date:_____

☐ Check venous blood gas and add on bone profile if not already done

☐ If suspicion of sepsis perform cultures and lactate

☐ Measure U&Es and venous bicarbonate **at least daily** till creatinine improving

☐ Request U&E and bicarbonate daily on OCS MAXIMS for next 48hrs

EXAMINE URINE

☐ Urine dipstick performed **within 24hr** Date &Time of collection _____

Reason for not obtaining urine dipstick _____

Is the sample positive for blood and / or protein (in the absence of infection or trauma)?

☐ Yes ☐ No

ALTER DRUGS

☐ Stop NSAID/COX 2 Inhibitors/ACE-I/ARB/Aliskiren/K-sparing diuretics/Metformin

☐ Review and adjust all dosages for renally excreted drugs

☐ Withhold anti-hypertensives if hypotensive

☐ Pharmacy review of medications performed **within 24hr**

When making dose changes in patients with Heart failure with AKI refer to Heart Failure team
Dose alterations to regular medications must be reviewed and communicated on discharge

TREAT WITH IV FLUIDS

☐ Fluid status assessed

☐ IV Fluids prescribed as per Fluid Guidance ☐ IV Fluids not Indicated

☐ Fluid chart commenced

☐ Catheterise if urine output low/obstruction suspected ☐ Catheter not indicated

AVOID CONTRAST

☐ Avoid radiological contrast if possible. When no alternative follow Trust Contrast Induced Nephropathy protocol.

KIDNEY SCREEN

☐ Perform Renal screen* in patients with AKI Stage 1 & 2 in presence of Haematuria/Proteinuria and in all patients with AKI Stage 3

* Renal Screen = CK (Rhabdomyolysis), LFT, ANCA, Anti-GBM Ab, ANA, Immunoglobulin & Paraprotein, Urine BJP, Urine ACR
An urgent Hepatitis B, C and HIV screen should be done for all patients with likelihood of requiring dialysis

IMAGING

Request renal ultrasound scan only in the following circumstances (tick those that apply):

☐ Suspected /possible renal tract obstruction (**within 24 hours**)

☐ Cause of AKI unknown (**within 24 hours**)

☐ Suspicion of infected kidney (pyonephrosis) / obstructed single kidney **(within 6 hours)**

USS requested on Date:_____ Time:_____

☐USS not required Reason for not requesting Ultrasound _____

REFERRAL		Date & Time
Critical Care	Pulmonary Oedema, circulatory failure requiring Inotropes, multi-organ failure or severe acidosis (pH<7.2). Patients not responding to medical management who may need dialysis in centre without on-site renal teams	
Nephrology	AKI Stage 3 : Refer all patients **within 12hr of detection of AKI stage 3** AKI Stage 1 / 2: Complications or progression despite medical management or if possible cause that may need specialist renal treatment.	
Urology	Any renal tract obstruction **BUT immediately if pyonephrosis, bilateral obstruction, obstructed single kidney or complications of AKI.**	

Name **Grade** **Bleep No.** **Signature**