Acute kidney injury (AKI) is a sudden reduction in kidney function over hours or days. It is most often seen during episodes of acute illness. It is diagnosed by a rise in serum creatinine and/or a reduction in urine output.

AKI is a clinical syndrome and not just a biochemical diagnosis. There is a need to ensure that test results are considered within the clinical context in which a blood test was taken.

Why was the blood test taken?

- Routine chronic disease monitoring
- Drug monitoring
- Assessment of acute illness

Creatinine rise within stable clinical context may reflect unstable CKD instead of AKI, especially if longer time period between current and baseline creatinine

Confirm or refute automated AKI Test Result comparing patient's current creatinine within clinical context against baseline creatinine

If clinical context is unknown, then assume high pre-test probability until proven otherwise

The following AKI Risk Factors/Clinical Features Should Prompt Earlier Review:

- Poor oral intake/urine output
- Evidence of hyperkalaemia, especially if moderate(K+ 6.0-6.4) or severe (K+ ≥ 6.5)
- Known history of CKD stages 4 & 5 or history of kidney transplant
- Deficient Immunity
- Frail with co-morbidities (CKD, diabetes, heart failure, liver disease, neurological or cognitive impairment) Past history of AKI
- Suspected intrinsic kidney disease
- Suspected urinary tract obstruction

AKI warning stage test result	LOW Pre-test Probability of AKI Stable Clinical Context	High Pre-test Probability of AKI Context of Acute illness
AKI Warning Stage 1 Current creatinine ≥ 1.5x baseline level (or creatinine rise > 26 µmol/L < 48 hrs)	**Consider clinical review ≤ 72 hours of e-alert** **If AKI confirmed** manage as below	**Consider clinical review ≤ 24 hours of e-alert** **Likely Stage 1 AKI** → manage as below
AKI Warning Stage 2 Current creatinine ≥ 2x baseline level	**Consider clinical review ≤ 24 hours of e-alert** **If AKI confirmed** manage as below	**Consider clinical review ≤ 6 hours of e-alert** **Likely Stage 2 AKI** → manage as below
AKI Warning Stage 3 Current creatinine ≥ 3x baseline level (or creatinine 1.5x baseline and > 354 µmol/L)	**Consider clinical review ≤ 6 hours of e-alert** **If AKI confirmed** → consider admission	**Consider immediate admission** Likely stage 3 AKI

"Think" Cause	"Think" Medications	"Think" Fluids	"Think" Review
History of acute illness? • Think Sepsis • Think Hypotension Intrinsic kidney disease? (E.g. vasculitis) • Think Urinalysis Urinary Tract Obstruction • Refer to urology	Any medications which could exacerbate AKI? Consider withholding • NSAIDs • Diuretics • Antihypertensive medication Any medication which may accumulate and cause harm during AKI? Any new medications that may cause AKI? (e.g. drug induced tubulointerstitial nephritis)	What is the patient's volume status If hypovolaemia present: • When did patient last pass urine? • Can the patient increase fluid intake/? • Is admission for IV fluid replacement and monitoring required? • Does the patient have and/or need carer support?	Does the patient need acute admission? Does the patient need SDEC or Renal medicine review? If not, when will you review? Have you ensured handover?

References and links:

1. Think Kidneys accessed 27/4/23 Primary Care - Acute Kidney Injury (thinkkidneys.nhs.uk)
2. RCGP AKI guidelines accessed 27/4/23 Acute Kidney Injury toolkit: Introduction (rcgp.org.uk)
3. NICE guideline [NG148]Published: 18 December 2019 Acute kidney injury: prevention, detection and management Overview | Acute kidney injury: prevention, detection and management | Guidance | NICE
4. London AKI SDEC pathway

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