281. Part 2 - Acute Kidney Injury (AKI) in children, young people and adults

This briefing looks at the prevention, detection and management of AKI in line with NICE guidance (NG148). It provides advice and support to assist a range of primary care health professionals including GPs, nurses and pharmacists to improve the care of people with AKI. A separate bulletin considers Acute Kidney Injury (AKI) - Sick day guidance.

AKI covers a spectrum of injury to the kidneys which can result from a number of causes. It is a clinical syndrome rather than a biochemical diagnosis and it is characterised by a decline in renal excretory function over hours or days that can result in failure to maintain fluid, electrolyte, and acid-base homeostasis.[1] It is rarely caused by trauma to the kidneys.[2]

Key recommendations

- People who are acutely unwell and have one or more risk factors for AKI (see 1.1.1 and 1.1.2 in NICE NG148) should be tested by measuring the serum creatinine and comparing it to baseline.
- Consider AKI in anyone with nausea, vomiting, diarrhoea, evidence of dehydration, reduced urine output, changes to urine colour, confusion, fatigue, and drowsiness.
- Consider AKI in anyone with an illness with no clear acute component, but has CKD, urological symptoms, symptoms of AKI, or signs/symptoms of disease affecting the kidneys and other organs (e.g. signs/symptoms of AKI, plus a purpuric rash).
- Consider AKI in anyone with CKD and no obvious acute illness and a rise in serum creatinine as this may indicate AKI rather than a worsening of their chronic disease.
- Serum creatinine should be monitored regularly in people of any age who have, or are at risk of AKI.
- Primary care health professionals should be aware of AKI warning stage test results and know how to respond to them. Further information is available from https://cks.nice.org.uk/topics/acute-kidney-injury/diagnosis/responding-to-aki-warning-stage-test-results/
- To test for AKI measure serum creatinine and compare with baseline.
  - To obtain a baseline value for the initial AKI use the lowest creatinine value within seven days of the current value, or (if this is not available), look at older results and use the lowest or mean creatinine value from between seven days and one year before the current value.
  - If no baseline creatinine value is available, it may be appropriate to repeat the creatinine measurement after 48-72 hours.
  - Use clinical judgement - monitor the person closely, and do not let waiting for a second creatinine result delay treatment or referral if AKI is possible, particularly if the person is unwell or the serum creatinine level is high.
- Detect AKI in line with the any of the following criteria:
  - A rise in serum creatinine of 26micromol/L or greater within 48 hours.
  - A 50% or greater rise in serum creatinine known or presumed to have occurred within the past seven days.
  - A fall in urine output to less than 0.5mL/kg/hour for more than six hours in adults and more than eight hours in children and young people.
  - A 25% or greater fall in eGFR in children and young people within the past seven days.
- Identify and record the cause(s) of AKI in the person's notes. When being admitted to hospital, good transfer of information could support hospital care and outcomes.
- Discuss the risk of developing AKI, particularly the risk associated with conditions leading to dehydration (for example, diarrhoea and vomiting) and drugs that can cause or exacerbate kidney injury (including 'over-the-counter' NSAIDs), with those who are at risk of AKI. Particularly for people who have:
  - CKD with an eGFR less than 60mL/min/1.73m^2.
  - Neurological or cognitive impairment or disability, which may mean limited access to fluids because of reliance on a carer.

Key recommendations

- Discuss and give information to people (include parents and carers if appropriate) on immediate and long-term treatment options, monitoring, prognosis, self-management and support options.
- Do not routinely offer low-dose dopamine or loop diuretics to treat AKI.
- Serum creatinine should be monitored after AKI and referral to a nephrologist considered when eGFR is 30 mL/min/1.73 m2 or less in adults, children and young people.
- Consider temporarily stopping ACE inhibitors and ARBs in anyone with diarrhoea, vomiting or sepsis until their clinical condition has improved and stabilised.
- People with AKI should have all of their medicines reviewed. If the person is not being promptly admitted to hospital this review will need to be undertaken in primary care. Seek advice from a pharmacist about optimising medicines and drug dosing in anyone with, or at risk of AKI.
- Reassess renal function and drug dosing in situations where eGFR and/or CrCl change rapidly, such as in patients with AKI.

References

1. Clinical Knowledge Summary. Acute Kidney injury. Last revised August 2021. https://cks.nice.org.uk/topics/acute-kidney-injury/
2. NHS England and UK Renal Registry. 'Think Kidneys'. Communities at risk of developing acute kidney injury. Reviewed November 2018. https://www.thinkkidneys.nhs.uk/aki/wp-content/uploads/sites/2/2018/11/Nov-18-Communities-at-risk.pdf

Additional resources available	Bulletin	https://www.prescqipp.info/our-resources/bulletins/bulletin-281-implementing-nice-guidance-in-ckd-and-aki/
	Tools	

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