COVID-19 rapid guideline: acute kidney injury (AKI)
(Last update: 6 May 2020)

Admission or transfer
In all patients with suspected or confirmed COVID-19, assess for AKI and record:
- Medical history and comorbidities, including any factors that further increase the risk of AKI
- Fluid status by clinical examination
- Fluid status by fluid balance
- Full blood count
- Serum urea, creatinine and electrolytes

Stop medicines that can cause or worsen AKI, unless essential

Managing fluid status
Aim for optimal fluid status (euvolaemia) in all patients
- If there is hypovolaemia, and fluid needs cannot be met orally or enterally, give IV fluids as part of a protocol to restore and maintain optimal fluid status
- Review the patient's IV fluid management plan daily: base choice of fluids on biochemistry results and fluid status
- Do not routinely offer loop diuretics, but consider them for treating fluid overload
- Manage hyperkalaemia according to local protocols

Ongoing monitoring
Record and monitor:
- Fluid status by clinical examination daily
- Fluid status by fluid balance daily
- Serum urea, creatinine and electrolytes at least every 48 hours, or more often if clinically indicated

Indicators of AKI
Detect AKI using the NHS England AKI algorithm, or any of:
- An increase in serum creatinine of 26 micromol/litre or more in 48 hours
- An increase of 50% or more in serum creatinine known or presumed to have occurred in the past 7 days
- A fall in urine output to less than 0.5 ml/kg/hour for more than 6 hours

AKI detected
- Do urinalysis for blood, protein and glucose
- Do imaging if urinary tract obstruction is suspected

Referral
Refer patients for further specialist advice if:
- Further tests or imaging are needed because of diagnostic uncertainty
- Urinalysis results show possible COVID-19-induced kidney damage or other intrinsic renal disease
- Fluid management needs are complex
- AKI is worsening despite initial management or has not resolved in 48 hours
- There are usual indications for renal replacement therapy, particularly if there is no urine output

Factors that further increase the risk of AKI:
- Chronic kidney disease
- Heart failure
- Liver disease
- Diabetes
- History of AKI
- Age 65 years or over

Assessments:
Fluid status by clinical examination:
For example, peripheral perfusion, capillary refill, pulse rate, blood pressure, postural hypotension, jugular venous pressure, pulmonary or peripheral oedema

Fluid status by fluid balance:
Fluid intake, urine output and weight

Electrolytes:
Sodium, potassium and bicarbonate

Useful links:
NICE has produced a guideline on acute kidney injury: prevention, detection and management
For help with fluid management, see the algorithms and composition of commonly used crystalloids in the NICE guideline on intravenous fluid therapy in adults in hospital
See Think Kidneys guidelines for medicines optimisation in patients with acute kidney injury

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