

# Hyperkalemia

(January 2017)

---

## Rationale

Elevated serum potassium levels may be life-threatening and may also be indicative of the presence of other serious associated medical conditions.

## Causal Conditions

(list not exhaustive)

- Increased intake (usually associated with low excretion)
- Redistribution
  - a. Decreased entry into cells (e.g., insulin deficiency, beta 2 blockade)
  - b. Increased exit from cells (e.g., metabolic acidosis, rhabdomyolysis)
- Reduced urinary excretion
  - a. Decreased glomerular filtration rate (e.g., acute or chronic kidney injury)
  - b. Decreased secretion (e.g., aldosterone deficiency, drugs)

## Key Objectives

Given a patient with hyperkalemia, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan, including indications for specialized care. In particular, the candidate will recognize the urgency of hyperkalemia associated with electrocardiogram (ECG) abnormalities.

## Enabling Objectives

Given a patient with hyperkalemia, the candidate will

- list and interpret critical clinical findings, including

- a. perform a history and physical examination to determine the underlying cause (e.g., potassium sparing medications, signs of kidney injury);
- list and interpret critical investigations, including
  - a. those that can help in distinguishing between life-threatening hyperkalemia and pseudohyperkalemia;
  - b. an ECG to determine the severity of the case;
  - c. tests to distinguish between causes of hyperkalemia (e.g., serum creatinine, urine electrolytes);
- construct an effective initial management plan, including
  - a. initiate emergency measures (e.g., intravenous calcium, glucose/insulin, potassium binders, dialysis) in the case of hyperkalemia with ECG changes;
  - b. refer the patient for specialized care (e.g., nephrology), if necessary.