

Hypokalemia: A Bedside-Oriented Approach

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Hypokalemia is a commonly-encountered electrolyte disorder in clinical practice. Our aim is to suggest better diagnostic bedside tools and therapeutic principles. An assessment of urine potassium (K^+) excretion can quickly differentiate the various causes of hypokalemia. The collection of 24-hour urine is the gold standard for urinary K^+ excretion and provides the additional information on the quantitative analysis of how much K^+ needed to administer to replace K^+ deficit. However, it can be cumbersome, frequently erroneous because of inaccurate timing and calculation, impractical in emergent conditions and misinterpreted in several clinical settings. Instead, a spot urine collection can be more practical to reflect the disease state in assessing urine K^+ excretion and offering a faster bedside alternative to the 24-hour urine collection. Five $\diamond\diamond$ spot $\diamond\diamond$ urinary indices of renal response to hypokalemia can be used; these are urine K^+ concentration, fractional excretion of K^+ , TTKG, K^+/Cr ratio and U_{osm}/Cr . In addition, the measurement of blood acid-base status, hormone profiles such as plasma renin activity, aldosterone and cortisol for high blood pressure, and urine Na^+ and Cl^- and divalent for normal blood pressure aid in the correct diagnosis of hypokalemic causes. An algorithm for this approach is provided for the case illustration with hypokalemia. The treatment of hypokalemia includes medical emergency or not, magnitude of K^+ deficit, route of K^+ administration, K^+ preparations, adjuncts to therapy, risks of the therapy, and special associated conditions.