

Gabor D. Kelen  
David M. Cline

## REFERENCES

- Berend K: Diagnostic use of the base excess in acid-base disorders. *N Engl J Med* 378: 1419, 2018. [PMID: 29641969]
- Emmett M, Narins RG: Clinical use of the anion gap. *Medicine (Baltimore)* 56: 38, 1977. [PMID: 401925]
- Berend K, de Vries APJ, Gans ROB: Physiological approach to assessment of acid-base disturbances. *N Engl J Med* 371: 1434, 2014. [PMID: 25295502]
- Ramadoss J, Stewart RH, Cudd TA: Acute renal response to rapid onset respiratory acidosis. *Can J Physiol Pharmacol* 89: 227, 2011. [PMID: 21423296]
- Winter SD, Pearson JR, Gabow PA, et al: The fall of the serum anion gap. *Arch Intern Med* 150: 311, 1990. [PMID: 2302006]
- Moviat M, van den Boogaard M, Intven F, et al: Stewart analysis of apparently normal acid-base state in the critically ill. *J Crit Care* 28: 1048, 2013. [PMID: 23910568]
- Treger R, Pirouz S, Kamangar N, Corry D: Agreement between central venous and arterial blood gas measurements in the intensive care unit. *Clin J Am Soc Nephrol* 5: 390, 2010. [PMID: 9546014]
- Contenti J, Corraze H, Lemoel F, Levraut J: Effectiveness of arterial, venous, and capillary lactate as a sepsis triage tool in ED patients. *Am J Emerg Med* 33: 167, 2015. [PMID: 25432592]
- Talan DA, Moran GJ, Abrahamian FM: Severe sepsis and septic shock in the emergency department. *Infect Dis Clin N Am* 22: 1, 2008. [PMID: 18295681]
- Singer AJ, Taylor M, LeBlanc D, et al: ED bedside point-of-care lactate with suspected sepsis is associated with reduced time to iv fluids and mortality. *Am J Emerg Med* 32: 1120, 2014. [PMID: 25082597]
- Kraut JA, Madias NE: Treatment of acute metabolic acidosis: a pathophysiologic approach. *Nat Rev Nephrol* 8: 589, 2012. [PMID: 22945490]
- Kraut JA, Xing SX: Approach to the evaluation of a patient with an increased serum osmolal gap and high-anion-gap metabolic acidosis. *Am J Kidney Dis* 58: 480, 2011. [PMID: 21794966]
- Lepeyre F, Ghannoum M, Ammann H, et al: Formulas for calculated osmolality and osmolal gap: a study of diagnostic accuracy. *Am J Kidney Dis* 70: 347, 2017. [PMID: 28578820]
- Berend K, van Hulsteijn LH, Gans ROB: Chloride: the queen of electrolytes? *Eur J Intern Med* 23: 203, 2010. [PMID: 22385875]
- Semler MW, Self WH, Wanderer JP, et al: Balanced crystalloids versus saline in critically ill adults. *N Engl J Med* 378: 829, 2018. [PMID: 29485925]
- Self WH, Semler MW, Wanderer JP, et al: Balanced crystalloids versus saline in noncritically ill adults. *N Engl J Med* 378: 819, 2018. [PMID: 29485926]
- Serpa Neto A, Martin Loeches I, Klanderman RB, et al: Balanced versus isotonic saline resuscitation—a systematic review and meta-analysis of randomized controlled trials in operation rooms and intensive care units. *Ann Transl Med* 5: 323, 2017. [PMID: 28861420]
- Al-Jaghbeer M, Kellum JA: Acid-base disturbances in intensive care patients: etiology, pathophysiology, and treatment. *Nephrol Dial Transplant* 30: 1104, 2015. [PMID: 25213433]
- Gehlbach BK, Schmidt GA: Bench-to-bedside review: treating acid-base abnormalities in the intensive care unit—the role of buffers. *Crit Care* 8: 259, 2004. [PMID: 15312208]
- Boyd JH, Walley KR: Is there a role for sodium bicarbonate in treating lactic acidosis from shock? *Curr Opin Crit Care* 4: 379, 2008 [PMID: 18614899]
- Andrade OV, Ihara FO, Troster EJ: Metabolic acidosis in childhood: why, when and how to treat. *J Pediatr (Rio J)* 83: S11, 2007. [PMID: 17508091]
- Adeva-Andany M, Fernandez-Fernandez C, Mourino-Bayolo D, et al: Sodium bicarbonate therapy in patients with metabolic acidosis. *Sci World J* 2014: 627673, 2014. [PMID: 25405229]
- Kraut JA, Kurtz I: Use of base in the treatment of severe acidemic states. *Am J Kidney Dis* 38: 703, 2001. [PMID: 11576874]
- Dellinger RP, Levy MM, Rhodes A, et al: Surviving Sepsis Campaign. International guidelines for management of severe sepsis and septic shock: 2010. *Crit Care Med* 41: 580, 2013. [PMID: 23353941]
- Velissaris D, Karamouzou V, Ktenopoulos N, et al: The use of sodium bicarbonate in the treatment of acidosis in sepsis: a literature update on a long term debate. *Crit Care Res Pract* 2015: 605830, 2015. [PMID: 26294968]
- Adrogué HJ: Management of life-threatening acid-base disorders. Second of two parts (alkalemia). *N Engl J Med* 338: 107, 1998. [PMID: 9420343]
- Guffey JD, Haas CE, Crowley A: Hydrochloric acid infusion for the treatment of metabolic alkalosis in surgical intensive care unit patients. *Ann Pharmacother* 52: 522, 2018. [PMID: 29359573]