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References

1. Celli BR, Cote CG, Marin JM, Casanova C, Montes de Oca M, Mendez RA, *et al*. The body-mass index, airflow obstruction, dyspnea, and exercise capacity index in chronic obstructive pulmonary disease. *N Engl J Med* 2004;350:1005–1012.
2. Bloom CI, Ricciardi F, Smeeth L, Stone P, Quint JK. Predicting COPD 1-year mortality using prognostic predictors routinely measured in primary care. *BMC Med* 2019;17:73.
3. Criner GJ. Giants in chest medicine: Bartolome Celli, MD, FCCP. *Chest* 2016;150:995–997.
4. Woywodt A, Matteson E. Should eponyms be abandoned? Yes. *BMJ* 2007;335:424.

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Should We Avoid Saline in Sepsis? It's Probably Too Early to Definitively Conclude

To the Editor:

We read with great interest the study entitled "Balanced Crystalloids versus Saline in Sepsis: A Secondary Analysis of the SMART Clinical Trial" (1). This study shows an increase in mortality in patients with sepsis receiving saline compared with balanced crystalloids. An increase in major adverse kidney events within 30 days (MAKE30) has already been found in a subgroup analysis of patients with sepsis (2, 3).

However, we have some remarks to make. This study was not planned in the SMART (Isotonic Solutions and Major Adverse Renal Events Trial) study protocol. The primary outcome of this study was death from any cause in patients with sepsis in the medical ICU. Moreover, the clinical trial number cited by the authors (NCT02444988) corresponds to "Isotonic Solutions and Major Adverse Renal Events Trial in the Medical Intensive Care Unit (SMART-MED)," in which the primary outcome measure was MAKE30 in all medical ICU patients, not only in patients with sepsis; 30-day in-hospital mortality was a secondary outcome.

Some patients received nonassigned intravenous fluids before or after enrollment, and the volume of crystalloids administered was higher in the balanced crystalloids group at Days 3 and 7, as previously found in another study (4). The amount of saline seems to be associated with an increase in MAKE30, particularly in patients with sepsis (2, 3). In animal studies, chloride-containing solutions led to renal vasoconstriction and a decrease in the glomerular filtration rate. In their analysis, did the authors take into account the amount of crystalloids (particularly saline) received before ICU admission in both groups? Did the authors find a relationship between the volume of chloride or saline administered and the incidence of kidney injuries, as suggested in different studies (2, 4)?

Several vasopressors were administered to the patients and converted to norepinephrine equivalents. However, these drugs are not strictly equivalent, particularly with regard to inotropism, heart rate, severe arrhythmias, and perhaps lactate concentration (5, 6). Did the patients in both groups receive the same vasopressors?

We congratulate the authors for this interesting study, which provides important information about crystalloids in sepsis. These results should be confirmed by a randomized study. ■

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References

1. Brown RM, Wang L, Coston TD, Krishnan NI, Casey JD, Wanderer JP, *et al*. Balanced crystalloids versus saline in sepsis: a secondary analysis of the SMART clinical trial. *Am J Respir Crit Care Med* 2019;200:1487–1495.
2. Semler MW, Self WH, Wanderer JP, Ehrenfeld JM, Wang L, Byrne DW, *et al*.; SMART Investigators and the Pragmatic Critical Care Research Group. Balanced crystalloids versus saline in critically ill adults. *N Engl J Med* 2018;378:829–839.
3. Semler MW, Wanderer JP, Ehrenfeld JM, Stollings JL, Self WH, Siew ED, *et al*.; SALT Investigators and the Pragmatic Critical Care Research Group. Balanced crystalloids versus saline in the intensive care unit: the SALT randomized trial. *Am J Respir Crit Care Med* 2017;195: 1362–1372.
4. Yunos NM, Bellomo R, Hegarty C, Story D, Ho L, Bailey M. Association between a chloride-liberal vs chloride-restrictive intravenous fluid administration strategy and kidney injury in critically ill adults. *JAMA* 2012;308:1566–1572.
5. Myburgh JA, Higgins A, Jovanovska A, Lipman J, Ramakrishnan N, Santamaria J; CAT Study investigators. A comparison of epinephrine and norepinephrine in critically ill patients. *Intensive Care Med* 2008; 34:2226–2234.
6. Levy B, Bollaert PE, Charpentier C, Nace L, Audibert G, Bauer P, *et al*. Comparison of norepinephrine and dobutamine to epinephrine for hemodynamics, lactate metabolism, and gastric tonometric variables in septic shock: a prospective, randomized study. *Intensive Care Med* 1997;23:282–287.