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Chloride-restrictive fluid resuscitation of septic patients

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Patients with sepsis often require large volumes of intravenous fluids during resuscitation. Historically, normal saline (NS) has been the default fluid for these patients. However, the composition of NS does not reflect physiologic concentrations of electrolytes and recent studies have associated NS administration with increased risk of hyperchloremic metabolic acidosis and kidney injury. In 2015, our institution's Emergency Department (ED) began using normosol, a more balanced crystalloid as their default resuscitation fluid. We performed a retrospective before and after cohort study of all patients admitted through our facility's ED with a diagnosis of sepsis, severe sepsis, or septic shock during two six month periods, when either NS or normosol was used as the default resuscitation fluid. Regression modeling controlling for baseline characteristics and 24h

fluid intake volume found no differences between groups for the primary outcomes of acute kidney injury ($P = 0.99$) and renal replacement therapy ($P = 0.88$). Patients in the Normosol TM-R cohort were found to have a lower rate of hyperchloremia at 72 h post admission (28% vs., 13%, $P < 0.0001$).

Biography

Ryan Duffy has completed his Bachelors in Science from Appalachian State University. He is currently a fourth year medical student at Virginia Tech Carilion School of Medicine, a research intensive medical school in Roanoke, Virginia. After obtaining his MD in May, he will begin his residency training in Internal Medicine in June 2019.

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