easily achieved if a fluid that is more normal than "normal" saline becomes commercially available.

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In Reply:—We are grateful to have the opportunity to respond to the thoughtful comments by Drs. Story *et al.*, Drummond, and Dorje *et al.* We entirely agree with Story *et al.* that the Stewart approach[1] provides a fundamental insight into acid-base equilibrium, and that in many cases this approach better explains the causes for metabolic pH changes than the Henderson-Hasselbalch[2] approach. Nevertheless, the Henderson-Hasselbalch equation is still correct, and most clinicians work well with this equation, despite the fact that the equation does not reflect the whole background of acid-base homeostasis. Consequently, it seemed appropriate to present a well-balanced discussion of our results in the light of the "traditional" Henderson-Hasselbalch approach and the "modern" Stewart approach.

We respond to the letter by Dr. Drummond by stating that we did not claim to be the first to evaluate acid-base changes under large saline infusions. However, probably because of unfortunately chosen key words, we did not come across the report by McFarlane and Lee while preparing our manuscript.[3]

The question asked by Dorje *et al.* whether artificial hyperchloremia has any important adverse effects cannot be answered with our data. Perioperative hyperchloremia seems to be benign in patients with normal renal function; however, we agree that for critically ill patients, especially those with acute or chronic renal failure, more "physiologic" crystalloid solutions would be advantageous. The proposal of Dorje *et al.* (Na^+ = 140 mM, Cl^- = 100 mM, and lactate or bicarbonate = 40 mM) would probably lead to an ongoing metabolic alkalosis in case of 40 mM bicarbonate content. Our experience with substitutes containing lactate suggests that these solutions will cause a slight but continuous increase in serum lactate concentration. Unfortunately, this artificial increase in serum lactate will lead to loss of an essential routine monitoring for inadequate tissue oxygenation. In summary, we conclude that the ideal electrolyte composition of crystalloids has not yet been found, and further investigations in this field are necessary.

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In Reply:—We appreciate the comments of Drummond[1] and Story *et al.*[2] Both letters address issues that clarify the report by Scheingraber *et al.*[3]

First, Drummond[1] appropriately calls additional attention to the important study by his colleagues at the Royal Infirmary in Edinburgh.[4] Both McFarlane and Lee[4] and Scheingraber *et al.*[3] conducted randomized clinical trials comparing 0.9% saline balanced salt solutions. The two studies differ in that McFarlane and Lee[4] enrolled patients under-