In Reply:

We are grateful for the valuable comments of Dr. Stapelfeldt on our article titled "Cumulative Duration of 'Triple Low' State of Low Blood Pressure, Low Bispectral Index, and Low Minimum Alveolar Concentration of Volatile Anesthesia Is Not Associated with Increased Mortality."[1] The letter indicated that we included adult patients undergoing "noncardiac anesthesia" and that the "triple low state does not appear to be independently associated with adverse long-term patient outcome following adult noncardiac surgery." Precise language is crucial in preventing misunderstanding; we would like to clarify that we included patients who underwent general anesthesia for noncardiac surgery, and the findings of our study indicated that there was no association between cumulative duration of triple low state and perioperative or intermediate-term mortality in noncardiac surgery patients.

Much of the letter, from its title forward, seems to use our study of the triple low state as an opportunity to discuss potential effects of intraoperative hypotension. While hypotension contributes to the triple low state, it was not at all the focus of our investigation or the subject of our hypothesis. We freely acknowledge that extended periods of hypotension may be independently associated with adverse outcome, and thus welcome the author's alert to those who may have failed to distinguish our conclusions about the triple low state from hypotension alone. In our article, we stated that "the low blood pressure component of the triple low state may lead to poor outcome." Furthermore, we noted that, in a subanalysis comparing effects of the triple low state with low mean arterial pressure, cumulative duration of low mean arterial pressure showed a significant association with risk for 30-day mortality (in a model also accounting for the Cleveland Clinic Risk Index score, age, and duration of low bispectral index). However, we could not find an association between the cumulative duration of low mean arterial pressure and *intermediate-term* mortality.[1] This latter finding likely indicates that patient- and procedure-related characteristics are more significant determinants of the intermediate-term mortality than cumulative duration of intraoperative low mean arterial pressure.

The letter also questions whether adjusting for "procedural risk" (referring to the Cleveland Clinic Risk Score)[2] is appropriate because some of the procedural risk may be attributable to the triple low state (or to hypotensive exposures). It should be noted first that the risk score is based not only on International Classification of Procedures, version 9, billing codes* but also on codes for diseases, thus including comorbidities. The main point here is that our hypothesis, and our analysis strategy, seeks to reveal the independent effect of the triple low state, separate from any overlap with patient- and procedure-related effects. Thus, adjusting for those covariable effects on outcome is critically important. In the search for modifiable factors to improve patient outcomes, we must be as rigorous and specific as our science permits.

* International Classification of Diseases and Procedures version 9. Available at: http://www.cdc.gov/nchs/icd/icd9cm.htm. Accessed August 12, 2013.

Competing Interests

The authors declare no competing interests.

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Aspiration during Monitored Anesthesia Care

To the Editor:

An important study by Savilampi *et al.*[1] demonstrating the rate of pulmonary aspiration in adults undergoing monitored anesthesia care with remifentanil was recently published in Anesthesiology. There is an important limitation of the study worth considering when interpreting the study results. The method of aspiration detection does not differentiate between pharyngeal-to-pulmonary aspiration (either oropharyngeal or nasopharyngeal) and gastric-to-pulmonary aspiration. A radionuclide-labeled solution was introduced into the nasopharynx during the study period; therefore, it is not clear whether its detection in the thorax represents aspiration of nasopharyngeal/oropharyngeal secretions, gastric contents, or both. The importance of this point is that gastric-to-pulmonary aspiration (*via* macroaspiration or gastroesophageal reflux disease) has been implicated in the development of aspiration pneumonitis, pneumonia, and acute respiratory distress syndrome,[2–5] whereas aspiration of oropharyngeal secretions may contribute to the development of pneumonia but not necessarily pneumonitis or acute respiratory distress syndrome (other than acute respiratory distress syndrome secondary to pneumonia).[6]

Competing Interests

The author declares no competing interests.

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