TABLE OF CONTENTS

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In a retrospective observational cohort study in patients presenting for elective inpatient surgery between April 2020 and April 2021, patients with a previous positive test for COVID-19 before the surgery had an elevated risk of perioperative mortality and pulmonary complications but not kidney injury. The risk was less if the positive test was more than 2 weeks before surgery.

The pharmacokinetic-pharmacodynamic relationships between remimazolam concentrations and Modified Observer's Assessment of Alertness and Sedation scores and bispectral index were assessed in 24 healthy volunteers using step-up and step-down target-controlled infusions to determine clinically appropriate target concentrations. Target concentration–dependent sedation was observed with little effect on vital signs. A difference in the sedative effects of remimazolam at identical target concentrations was observed between the step-up and step-down parts of the titration scheme that could not be explained by a bias in the predicted target concentrations. Pharmacodynamic models for Modified Observer's Assessment of Alertness and Sedation scores and bispectral index that assumed tolerance development described the observed difference in the sedative effects between the step-up and step-down parts of the titration scheme.

Among 733,406 primary total knee arthroplasty surgeries between January 1, 2011, and December 31, 2016, in the Medicare database, 90.7% of patients identified as White, 4.7% as Black, and 4.6% as Other. Black patients did not have a statistically different probability of receiving a regional anesthetic compared to White patients (adjusted estimates: Black, 53.3% [95% CI, 52.5 to 54.1%]; White, 52.7% [95% CI, 52.4 to 54.1%]; $P = 0.132$). After adjustment for other patient-level confounders, 42.0% of the variation in block administration was attributable to the hospital, compared to less than 0.01% to race. Race was not associated with administration of regional anesthesia in Medicare patients undergoing primary total knee arthroplasty.

◇ *Refers to This Month in ANESTHESIOLOGY*
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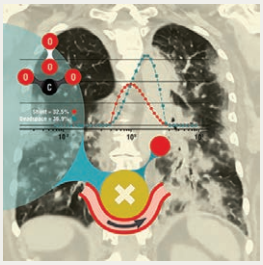

ON THE COVER: A state-of-the art assessment of the different causes of hypoxemia (shunt, ventilation–perfusion mismatch, and diffusion limitation) in COVID-19 acute respiratory distress syndrome (ARDS) is currently lacking. In this study, Busana *et al*. hypothesized a multifactorial genesis of hypoxemia and aimed to measure the relative contribution of each of the different mechanisms and their relationship with the distribution of tissue and blood within the lung. In an accompanying editorial, Capaccione and Vidal Melo examine the physiologic determinants of hypoxemia, relevant techniques and methods to identify and address hypoxemia, and new research on hypoxemia during COVID-19 ARDS. Cover illustration: A. Johnson, Vivo Visuals Studio.

- Busana *et al*.: Causes of Hypoxemia in COVID-19 Acute Respiratory Distress Syndrome: A Combined Multiple Inert Gas Elimination Technique and Dual-energy Computed Tomography Study, p. 251
- Capaccione and Vidal Melo: Structure–Function Relationships Determining Hypoxemia in COVID-19 Acute Respiratory Distress Syndrome, p. 186

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