PODCAST TRANSCRIPTION

Hi, this is Evan Kharasch, Editor-in-Chief of ANESTHESIOLOGY, with some highlights from the January 2019 issue, as selected by the journal editors.

This January podcast coincides with the premier of a new message for our readers, and a new layout for the print edition of Anesthesiology. Featured prominently on the cover and on the website is our expression of the value proposition of the journal: Trusted evidence: Discovery to practice. Readers tell us that Anesthesiology is their authoritative source for clinical practice and research information, which they consider highly credible. Our readers tell us that our content is trustworthy and is usually treated with phenylephrine or ephedrine. Norepinephrine was recently found to not have these effects.

Let’s turn now to this month’s articles.

Next, ANESTHESIOLOGY is pleased this month to publish the 2019 Up-to-Date podcast. The association between the type of anesthesia used and cancer recurrence remains controversial. Our next article was a retrospective cohort study, comparing the influence of total intravenous anesthesia versus inhalation anesthesia on recurrence-free survival after breast cancer surgery. Dr. Seokha Yoo and colleagues at Seoul National University in Seoul, Korea, reviewed the electronic medical records of nearly 7,700 patients who had breast cancer surgery at their institution. They evaluated the influence of anesthesia type on recurrence-free survival and overall survival and compared risks of cancer recurrence and all-cause mortality between both types of anesthesia. After propensity score matching, each group included 1,766 patients. The authors found no significant difference in recurrence-free survival between the two groups. The 5-year recurrence-free survival rate was 93% in the intravenous anesthesia group and 94% in the inhalation anesthesia group. Inhalation anesthesia had no significant impact on either recurrence-free survival (hazard ratio <1) or overall survival (hazard ratio 0.96), neither of which was significantly different. Yoo et al. found no association between the type of anesthesia used and the long-term prognosis of breast cancer.

Our next feature story on this animal model that examines how positive end-expiratory pressure (PEEP), along with tidal volume, gas flow, and respiratory rate, contributes to the mechanical power required to ventilate the lung. Dr. Francesca Collino of the University of Göttingen, Germany, and colleagues there and elsewhere investigated the effects of increasing mechanical power by selectively modifying its PEEP component. They ventilated 36 healthy pigs in prone position for 50 hours, at 30 breaths per minute, and a tidal volume equal to functional residual capacity. They applied PEEP levels (0, 4, 7, 11, 14, 18 cmH2O) to 6 groups of animals. The authors recorded respiratory, gas exchange and hemodynamic variables every 6 hours. They also measured oxygenation and oxygen delivery from baseline to hyperoxic and hypoxic inspired gas samples. The lung mechanical power was similar at 0, 4 and 7 cmH2O PEEP, averaging 9 Joules/min. Lung mechanical power increased linearly thereafter, at 11, 14 and 18 cmH2O PEEP, 16 to 19 to 22 Joules/min. Lung elastances, vascular congestion, atelectasis, inflammation, and septal rupture were less with 4-7 cmH2O PEEP compared with zero PEEP. Lung weight and lung wet-to-dry ratios were not significantly different across groups. The lung mechanical power level that best discriminated between more severe versus less lung damage was 15 Joules/min. Collino et al. concluded that an increase in PEEP reduced the risk of ventilator-induced lung damage.

Next, ANESTHESIOLOGY is pleased this month to publish the 2019 Update of the Practice Advisory for Perioperative Visual Loss Associated with Spine Surgery. Published by the American Society of Anesthesiologists, the Practice Advisory for Perioperative Visual Loss, together with the North American Neuro-Ophthalmology Society, and the Society for Neuroscience in Anesthesiology and Critical Care. This advisory focuses on the perioperative management of patients who are undergoing spine procedures.
while they are positioned prone and receiving general anesthesia. This practice parameter up-
dates the previous version, which was approved in 2011 and published in 2012. In preparing
the revised practice parameter, the task force assessed 484 relevant journal articles published
between 2012 and mid-2018 and determined that 27 new studies met the stringent criteria
to be accepted as evidence for the revised advisory. These new studies were combined with
47 pre-2012 articles that had been used in the previous advisory. They were combined
with 8 articles provided by task force members, resulting in a total of 82 articles accepted as
evidence, their findings forming the basis of the revised advisory. The Practice Advisory ad-
dresses preoperative patient evaluation and preparation; intraoperative management includ-
ing blood loss, fluid administration, vasopressor use, patient and head positioning devices,
and staging of surgical procedures; and, postoperative management. The full Advisory is
available free of charge at the Journal website.

Finally, our review article this month examines the role of behavioral economics in the
design of physician incentives, authored by Dr. David Lubarsky and colleagues at the Univer-
sity of Miami. They observe that behavioral economics principles, when applied to physician
behavior, have primarily been used to construct optimized financial incentives. Despite the
widespread application of incentive systems in healthcare to enhance physician productivity
and quality, they have not been well studied, and, often do not produce the desired results.

The review article introduces and evaluates the essential components of building successful
financial incentive programs for physicians, and which adhere to the principles of behavioral
economics. Lubarsky and colleagues discuss physician leaders, healthcare administrators, and
practicing anesthesiologists regarding the issues to consider when designing physician incen-
tive programs to maximize effectiveness and minimize unintended consequences. They note
that benchmarking to peers and national norms should accompany or precede a financial
incentive, as doing so may yield the results desired without expenditure (for metrics un-
related to additional hours of work). The financial incentive must be sized sufficiently to
attract notice (recommended at least 10-15% of salary) and be paid without contingency.
The incentive should combine a reward moderately difficult to achieve, as targets that are
too easy or too hard attract little engagement. The number of metrics should be limited to
3-5, given the finite ability of humans to focus. Financial incentives are only one part of a
change management strategy. Fixing systems that support faultless delivery of
care and simply appealing to the powerful forces that have guided physicians’
 altruism and self-image as a healer might be more effective.

I believe 2019 is shaping up to be an interesting year in our specialty
and look forward to keeping you informed as ANESTHESIOLOGY contin-
ues to publish important research each month. Until next time!