SEE 35B Overview

2019

{Music}

Host: Welcome to the SEE Podcast, presented by the American Society of Anesthesiologists. SEE, translating emerging anesthesia knowledge for your daily practice.

Natalie F. Holt, MD, MPH: Hello and welcome to Volume 35B of the SEE Program. My name is Natalie Holt and I’m one of the members of the SEE Editorial Board. For those of you who aren’t familiar with the program, SEE is a continuing medical education product written by practicing anesthesiologists and offered by the American Society of Anesthesiologists.

With each volume of SEE, we highlight 100 articles from over 30 leading journals with the goal of describing emerging knowledge, recent updates to guidelines, important reviews and other articles of interest. Here is a preview of a few of the articles covered in this edition.

Have you ever looked yourself up on an online physician rating website? Well, one in six of us has been rated on one of these sites; however, it’s unknown whether the information on these sites is really reliable. In fact, the authors of a recent study compared Press Ganey patient satisfaction survey results of physicians with and without negative online reviews. They found no significant difference between the groups, suggesting at the very least online physician reviews don’t reflect the results of more rigorous patient satisfaction surveys.
I would imagine we all have been in the position of administering clindamycin or vancomycin instead of cefazolin because a patient endorsed a penicillin allergy; however, compared to first-generation cephalosporins, both vancomycin and clindamycin are less effective against methicillin-resistant *Staphylococcus aureus* and gram negative bacteria. In addition, they are associated with more adverse effects. Furthermore, 95% of patients who report a penicillin allergy have negative results on skin testing. And even patients who experience a true type I (IgE-mediated) response to penicillin often lose their sensitivity as years go by. In this volume, we present an article that includes a decision algorithm for the perioperative management of patients reporting a penicillin allergy. In particular, the algorithm suggests that cephalosporins are appropriate for patients with only a vague history of penicillin allergy that occurred more than ten years ago.

More than half a century ago, the introduction of cardiopulmonary bypass machines allowed for significant advances in cardiac surgery; however, up until recently, there were no agreed-upon guidelines addressing the management of anticoagulation for patients requiring surgery with cardiopulmonary bypass. Recently, the Society of Thoracic Surgeons, the Society of Cardiovascular Anesthesiologists, and the American Society of Extracorporeal Technology created a work group to develop consensus recommendations. The guidelines recommend heparin administration guided by activated clotting time as first-line therapy. A target ACT of 480 is suggested. The direct thrombin inhibitor of bivalirudin is advised as the heparin alternative of choice for patients with a history of heparin-induced thrombocytopenia. At the end of cardiopulmonary bypass, heparin reversal with protamine is recommended. A dose of less than 2.6 mg protamine for every 100 units of heparin is suggested to minimize the risk of protamine overdose.
Also on the topic of anticoagulation, non-vitamin K antagonists are being used with increasing frequency as a substitute for warfarin in patients who require long-term anticoagulation because they appear to offer a better safety profile. A recent study used data from the American Heart Association/American Stroke Association Get With The Guidelines® stroke registry to compare in-hospital mortality rates among patients presenting with stroke who were taking a non-vitamin K oral anticoagulant, warfarin or no oral anticoagulant. They found that patients who were taking a non-vitamin K oral anticoagulant had a decreased risk of in-hospital mortality and better functional outcomes compared to patients who were taking warfarin. They also found that the use of antiplatelet therapy, such as aspirin, in combination with warfarin was associated with an increased odds of in-hospital mortality, whereas this increase in mortality was not seen among patients using an antiplatelet agent in combination with a non-vitamin K oral anticoagulant. These findings support the favorable safety profile of non-vitamin K oral anticoagulants over warfarin.

All of us know that opioid misuse is an epidemic in the United States and surgery is a known risk factor for chronic opioid use. Recently, authors of a retrospective review studied adults undergoing spinal fusion surgery to analyze factors that contributed to opioid use at 12 months after surgery. They found that preoperative opioid use was the most important predictor of postoperative opioid use. No link was found between continued postoperative use and intraoperative use of nonopioid analgesics such as ketamine or lidocaine. These findings suggest that multimodal intraoperative analgesic techniques may have little influence on chronic postoperative opioid use.

Even less is known about the risk of chronic opioid use among pediatric patients who receive opioids for painful procedures. A recent retrospective study followed over 80 children for 24 hours to evaluate the risk of persistent
opioid use after hospital discharge. They found that 29% of children were still using opioids 12 months after surgery and 13% continued to be on opioids at two years. The risk factors that best predicted persistent opioid use were higher daily average in-hospital pain scores and higher postoperative opioid consumption. Unlike in the previous study, preoperative opioid consumption was not related to persistent postsurgical opioid use.

Optimizing postoperative analgesia after orthopedic surgery has always been important but is especially significant with the recent push toward outpatient total joint arthroplasties. The authors of a recent randomized double-blind study thought to compare postoperative outcomes among patients undergoing total knee arthroplasty using three different analgesic techniques: 1) local anesthetic infiltration; 2) local anesthetic infiltration plus ultrasound-guided adductor canal blocks; and, 3) local anesthetic infiltration, adductor canal block, and the addition of intrathecal morphine to the spinal anesthetic. All patients received a spinal anesthetic with bupivacaine for the surgery. The authors found no difference in postoperative mobility among the groups; although cumulative opioid use at 24 hours was lower in the group that received intrathecal morphine, pain scores and opioid-related adverse events were similar. This study suggests that the postoperative analgesic regimen may have limited impact on functional outcomes after knee replacement surgery.

Those of you who work in the ICU know that bicarbonate is a mainstay of the treatment of metabolic acidosis; however, a multicenter randomized trial recently found bicarbonate therapy did not improve mortality, reduce days on mechanical ventilation, or lower the risk of ICU-acquired infections. Nevertheless, patients who received bicarbonate had a lower risk of requiring renal replacement therapy: 35% compared to 52%. This study provides some
of the best evidence to date that bicarbonate therapy is beneficial in the
treatment of critically ill patients with metabolic acidosis.

Similarly, steroids are routinely used in the management of patients with
septic shock; however, their mortality benefit has been debated for years. In a
recent trial, over 1,200 patients with septic shock were randomized to receive
intravenous hydrocortisone alone or with the addition of fludrocortisone. They
found that patients who received both hydrocortisone and fludrocortisone had
lower ICU and 90-day mortalities, as well as reduced vasopressor
requirements and less risk of organ failure. They also suggest the addition of a
mineralocorticoid agonist may increase expression of alpha adrenoreceptors,
increasing the response to vasopressor therapy.

In some of your hospitals, postoperative troponin measurement for high-risk
patients may now be routine. The advent of high-sensitivity cardiac troponin
has demonstrated that perioperative myocardial injury is far more common
than once appreciated. However, its impact is still not entirely clear. The
authors of a recent study followed over 2,000 patients who had serial troponin
values measured perioperatively. Elevated troponin of a cardiac origin was
detected in 13% of patients. Cardiac symptoms were present in only 6% of
these patients and ECG changes were only present in 25%. Even more
interesting, among patients in whom an elevated troponin was detected, the
30-day mortality rate was six times higher than among those without an
elevated troponin: 10% compared to 2%. The authors also found that the
combination of an elevated preoperative troponin level plus postoperative
troponin level conferred even more risk. This finding suggests preoperative in
addition to postoperative troponin measurement may be advisable in high-risk
patients.
I hope you’ve enjoyed these highlights from Volume 35B of the SEE Program. If you are not already a SEE subscriber, you can join by going to the ASA website at ASAHQ.org, then navigating to shop-asa and filtering for SEE in the category dropdown.

Thank you for listening and on behalf of the SEE Editorial Board, we hope you enjoy this edition of SEE.

Host: Thank you for listening to the SEE podcast, presented by the American Society of Anesthesiologists. For more information on SEE and other educational products, please visit shop-asa.

THE END