

ANESTHESIOLOGY

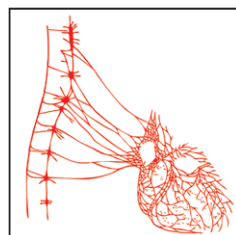


Jean Mantz, M.D., Ph.D., Editor



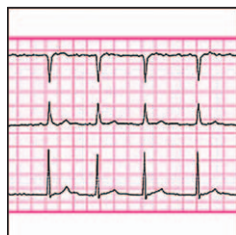
Aspirin in patients undergoing noncardiac surgery.
N Engl J Med 2014; 370:1494–503.

Guidelines for perioperative maintenance *versus* interruption of antiplatelets in patients undergoing noncardiac surgery are more empirical than based on robust data extracted from the perioperative context. The Perioperative Ischemic Evaluation 2 (POISE-2) Investigator group conducted this illuminating, multicenter randomized controlled trial including 10,010 patients at risk for vascular complications in which aspirin interruption *versus* maintenance (or introduction) in the perioperative period was tested. The primary goal was a composite score of death and nonfatal myocardial infarction at 30 days. Bleeding was a secondary outcome. The results showed no difference in the occurrence of the primary outcome in the intervention *versus* control group (hazard ratio in the aspirin group, 0.99; 95% confidence interval, 0.86 to 1.15; $P = 0.92$). Major bleeding was more common in the aspirin group. Therefore, preoperative interruption of aspirin is not systematically to be considered as a disaster when perioperative bleeding risk appears major. (Summary: J. Mantz. Image: J.P. Rathmell.)



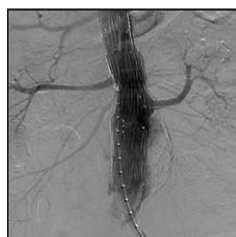
Clonidine in patients undergoing noncardiac surgery.
N Engl J Med 2014; 370:1504–13.

This paper is the companion article of the one above and reports the results of the randomized controlled trial in which administration of clonidine (0.2mg preoperatively and per day until 72 postoperative hours) *versus* placebo was examined in the same patient population. The primary endpoint was the same as for the aspirin trial. It was found that low-dose clonidine in patients undergoing noncardiac surgery did not reduce the rate of the composite outcome of death or nonfatal myocardial infarction; it did, however, increase the risk of clinically important hypotension and nonfatal cardiac arrest. Therefore, perioperative administration of a low dose of clonidine cannot be recommended in this context. (Summary: J. Mantz. Illustration: J.P. Rathmell [Sympathetic innervations of the heart, image based on original image available at <http://www.icnr.com/articles/sympathetic-nervous-system-and-heart-failure.html>].)



Comparison of the efficacy and safety of new oral anticoagulants with warfarin in patients with atrial fibrillation: A meta-analysis of randomised trials. **Lancet 2014; 383:955–62.**

Four new oral anticoagulants compare favorably with warfarin for stroke prevention in patients with atrial fibrillation; however, the balance between efficacy and safety in subgroups needs better definition. This meta-analysis was performed on 71,683 included in the pivotal phase 3 clinical trials for stroke prevention or systemic embolic events in patients with atrial fibrillation. It was found that new oral anticoagulants had a favorable risk–benefit profile, with significant reductions in stroke, intracranial hemorrhage, and mortality, and with similar major bleeding as for warfarin, but increased gastrointestinal bleeding. This study provides a comprehensive approach for prescribing new anticoagulants as a therapeutic option to reduce the risk of stroke in patients with atrial fibrillation. (Summary: J. Mantz. Image: J.P. Rathmell [Atrial fibrillation].)



Mortality from ruptured abdominal aortic aneurysms: Clinical lessons from a comparison of outcomes in England and the USA. **Lancet 2014; 383:963–9.**

Since the outcome of patients with ruptured abdominal aortic aneurysm (rAAA) varies by country, it can be hypothesized that the study of practice differences might allow the formulation of pathways to improve care. Data were used from the Hospital Episode Statistics for England and the Nationwide Inpatient Sample for the United States for patients admitted to hospital with rAAA from 2005 to 2010. Primary outcomes were in-hospital mortality, mortality after intervention, and decision to follow noncorrective treatment. In the United Kingdom 11,799 patients were included and in the United States 23,838 patients were included. In-hospital survival from rAAA, intervention rates, and uptake of endovascular repair were lower in the United Kingdom than in the United States. The lowest mortality for rAAA was observed in academic hospitals with larger bed capacities and doing a greater proportion of cases with endovascular repair. These data provide avenues for strategies improving outcome in patients with rAAA. (Summary: J. Mantz. Image: J.P. Rathmell.)



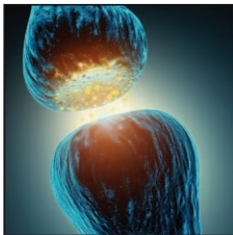
A randomized trial of protocol-based care for early septic shock. N Engl J Med 2014; 370:1683–93.

In a single-center study published more than a decade ago involving patients presenting to the emergency department with severe sepsis and septic shock, mortality was markedly lower among those who were treated according to a 6-h protocol of early goal therapy in which intravenous fluids, vasopressors, inotropes, and blood transfusions were adjusted to reach central hemodynamic targets. In a new multicenter study that had for goal to determine whether these findings were generalizable and whether all aspects of the protocol were necessary, the results show that a protocol-based resuscitation of patients whom septic shock was diagnosed in the emergency department did not improve outcomes compared with usual care. (Summary: J.F. Pittet. Image: J.P. Rathmell.)



Nutrition in the acute phase of critical illness. N Engl J Med 2014; 370:1227–36.

Critically ill patients requiring vital organ support in the intensive care unit (ICU) commonly have anorexia and may not be able to feed themselves by mouth for periods ranging from days to months. In this review article, Casaer and Van den Berghe report the most current recommendations for clinical nutritional practice in the ICU. Using the best evidence-based studies, these recommendations include (1) not to interfere with the early catabolic response of critical illness either with macronutrients or anabolic hormones; (2) to allow hypocaloric enteral feeding in the acute phase of critical illness for up to 7 days in previously well-nourished patients; and (3) to supply micronutrients to prevent refeeding syndrome. (Summary: J.F. Pittet. Image: J.P. Rathmell.)



Botulinum toxin B in the sensory afferent: Transmitter release, spinal activation, and pain behavior. Pain 2014; 155:674–84.

The use of agents based on one of the several serotypes of toxins produced by *Clostridium botulinum* has been advocated to control pain of many etiologies. Unclear, however, is how these agents might work in these settings. Marino *et al.* have now shown that botulinum toxin B may reduce pain through both local and spinal mechanisms. Although it was not surprising that the toxin would be observed to reduce local neurotransmitter release, the authors were able to show that the toxin was transported to central nerve terminals where it inactivated a key protein called VAMP (vesicle-associated membrane protein) involved in neurotransmitter release. Additional evidence suggested that some toxin may even act trans-synaptically in the

spinal cord to reduce neuronal activation. These observations shed light on the mechanisms by which these enigmatic toxins reduce pain, and may help us select specific clinical pain syndromes in which to conduct trials. (Summary: J.D. Clark. Image: ©Thinkstock.)



Development of the anesthesiology educational milestones. J Grad Med Educ 2014; 6(1 suppl 1):12–4. The anesthesiology milestone project. J Grad Med Educ 2014; 6(1 suppl 1):15–28.

Graduate medical education always struggles with how to define, teach, and evaluate knowledge, skills and attitudes that characterize the competent physician. The Accreditation Council for Graduate Medical Education has provided yeoman effort in this regard developing the concept of six core competencies: patient care, medical knowledge, interpersonal and communications skills, problem-based learning and improvement, professionalism, and systems-based practice. The Next Accreditation System for Anesthesiology builds upon this foundation describing a five-level progression through “Milestones” from level

1, the first postgraduate education year prior to the start of anesthesiology residency, through level 2, the beginning general education of the resident, followed by level 3, subspecialty experiences resulting in achieving levels 4 and 5, the transition to independent practice and beyond. This literature provides substance to the 25 Anesthesiology Milestones designed to be both comprehensive and practical with respect to being markers of education that can be learned and taught. (Summary: A.J. Schwartz. Image: J.P. Rathmell.)