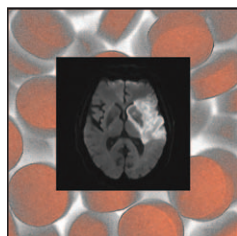


ANESTHESIOLOGY



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



Low-dose aspirin for primary prevention of cardiovascular events in Japanese patients 60 years or older with atherosclerotic risk factors: A randomized clinical trial. JAMA 2014; 312:2510–20. (See also accompanying editorial: When should aspirin be used for prevention of cardiovascular events? JAMA 2014; 312:2503–4.)

The aim of this Japanese randomized controlled trial was to determine the safety and efficacy of aspirin (100 mg daily) as a means of primary prevention in patients with high cardiovascular risk. The primary outcome was a composite of deaths from cardiovascular causes, nonfatal stroke, and nonfatal myocardial infarction with a median follow-up period of 5 yr. There was no difference in the primary outcome between the two groups. Ongoing studies will help to clarify which patient subpopulations would best benefit from aspirin therapy. At the moment, aspirin is indicated for patients at high short-term risk due to an acute vascular event and those undergoing certain vascular procedures; patients with evidence of vascular disease should also take aspirin on a daily basis. Patients at low risk of vascular events should not take aspirin for prevention of vascular events, even at a low dose. (Summary: J. Mantz. Illustration: J.P. Rathmell.)



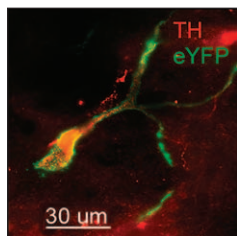
Nonoperative treatment with antibiotics versus surgery for acute nonperforated appendicitis in children: A pilot randomized controlled trial. Ann Surg 2015; 261:67–71.

There is growing interest in the nonoperative treatment of acute nonperforated appendicitis with antibiotics. However, data in support of this strategy for children still remain inconclusive. This small-size pilot randomized controlled trial (50 patients included) evaluated the feasibility and safety of nonoperative treatment with antibiotics in children with acute nonperforated appendicitis. Twenty-two of 24 patients (92%) treated with antibiotics saw an initial resolution of symptoms. Of these 22, only 1 patient (5%) had recurrence of acute appendicitis during follow-up. Overall, 62% of patients have not had an appendectomy during the follow-up period. This pilot trial suggests the feasibility and safety of treating nonperforated appendicitis with antibiotics in children. (Summary: J. Mantz. Image: J.P. Rathmell [computed tomography image of a patient with acute appendicitis].)



Televised medical talk shows—what they recommend and the evidence to support their recommendations: A prospective observational study. BMJ 2014; 349:g7346.

Television, radio, and printed media are frequently used to deliver medical information to the general public. The scientific reliability of many of the recommendations delivered to millions of people via these televised medical talk shows is often questionable. Two televised talk shows were examined in this prospective observational study. Approximately half of the recommendations given on both shows have either no robust scientific evidence or are contradicted by the best available evidence; significant conflicts of interests were rarely addressed. (Summary: J. Mantz. Image: ©Thinkstock.)



Optogenetic stimulation of adrenergic C1 neurons causes sleep state-dependent cardiorespiratory stimulation and arousal with sighs in rats. Am J Respir Crit Care Med 2014; 190:1301–10.

Sleep disturbances are common in the perioperative period and their consequences remain poorly understood. The C1 neurons are important lower brainstem nuclei for the control of sympathetic tone in the cardiovascular system. At rest, the function of these neurons is to minimize blood pressure fluctuations, but carotid body stimulation and increased blood pressure cause powerful activation in response to hypoxia. Through photoactivation of C1 cells in rats, the authors have shown that C1 neuron activation reproduces most of the effects of hypoxia, including arousal. These observations suggest that the C1 neurons contribute both to sleep disruption and to the adverse cardiovascular effects of apnea. (Summary: J. Mantz. Image from original article [catecholaminergic (tyrosine hydroxylase, red) neuron transduced with ChR2-EYFP (green) adeno-associated virus type 2], authored by Burke PG, Stephen B, Coates MG, Viar KE, Stornetta RL, Guyenet PG; reprinted with permission of the American Thoracic Society. Copyright © 2015 American Thoracic Society. The American Journal of Respiratory and Critical Care Medicine is an official journal of the American Thoracic Society.)



Mortality prediction in intensive care units with the Super ICU Learner Algorithm (SIC-ULA): A population-based study. *Lancet Respir Med* 2015; 3:42–52. (See also accompanying editorial: Mortality prediction in ICU: A methodological advance. *Lancet Respir Med* 2015; 3:5–6.)

Improving prediction of mortality for patients in intensive care units (ICUs) remains a challenge. Many severity scores have been proposed, but findings of validation studies have shown that they are poorly calibrated. The investigators of this study propose use of an ensemble machine learning approach (the nonparametric Super Learner²) to combine numerous individual models from a prespecified library to produce an optimum mortality prediction algorithm. Compared with conventional severity scores, Super Learner offers improved performance for predicting hospital mortality in ICU patients. A user-friendly implementation guide is available online and should be useful for clinicians seeking to externally validate scores. (Summary: J. Mantz. Image: J.P. Rathmell.)



Association between the choice of IV crystalloid and in-hospital mortality among critically ill adults with sepsis. *Crit Care Med* 2014; 42:1585–91.

There is ongoing controversy regarding the optimal crystalloid solution for resuscitation in critically ill patients with septic shock. Use of colloid administration has been markedly tempered in recent years and several lines of evidence suggest that balanced crystalloids (such as lactated Ringer's) may be superior to unbalanced choices (such as isotonic saline) with respect to outcome. In this large observational study, which enrolled 53,448 critically ill adults with vasopressor-dependent sepsis, it was found that the administration of balanced fluids during initial resuscitation was associated with a lower risk of in-hospital mortality compared with nonbalanced crystalloids. If confirmed in randomized trials, this finding could have significant public health implications, as crystalloid resuscitation is nearly universal in sepsis. (Summary: J. Mantz. Image: J.P. Rathmell.)



Tramadol use and the risk of hospitalization for hypoglycemia in patients with noncancer pain. *JAMA Intern Med* 2015; 175:186–93.

Tramadol is an analgesic with weak μ -opioid receptor agonist activity that also inhibits the reuptake of serotonin and norepinephrine. Use of tramadol is rising as physicians shift away from reliance upon strong opioids for the control of acute and chronic pain. Yet, this drug has numerous side effects. Recent case reports and a large pharmacovigilance study suggest that hypoglycemia may be an underappreciated side effect of tramadol use. Using a large database from the United Kingdom, the authors conducted a primary nested case-control analysis and two secondary analyses to examine the rates of hypoglycemia after initiation of tramadol *versus* codeine. The authors discovered a high incidence of hypoglycemia occurring generally early after the initiation of tramadol (0.7 per 1,000 per year), and an increased risk of hospitalization for hypoglycemia (odds ratio, 1.52 [95% confidence interval, 1.09–2.10]). Of these hospitalizations, 10.1% were fatal. Furthermore, many of the hospitalized patients had no other risk factors for hypoglycemia. This demonstrates a substantial incidence of a serious complication related to tramadol not generally appreciated by caregivers. (Summary: J.D. Clark. Image: J.P. Rathmell.)



Failure to cope: The hidden curriculum of emergency department wait times and the implications for clinical training. *Acad Med* 2015; 90:56–62.

You are starting an anesthetic when your resident suggests that the patient will benefit from an epidural catheter for postoperative analgesia. Your instinct tells you this is good for the patient's care. You pause as you realize that there are four more cases and efficiency of the operating room will be hampered by the time it will take you to guide this inexperienced resident. Have you ever been in this situation? Webster and colleagues explored the tensions between patient care and medical education in their ethnographic study of patients in an emergency department setting and concluded that efficient patient care was viewed by attending physicians as more important than education. This resulted in physicians describing "high-need" patients as those who displayed "failure to cope" and was seen as a unit of work and a barrier to efficiency rather than as an individual requiring care. The transferability of their conclusions to anesthesiology is obvious. Anesthesiology educators need to consider the "hidden curriculum" as they balance the needs for resident education with the call for greater efficiency. (Summary: A.J. Schwartz. Image: J.P. Rathmell.)