

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

## Perioperative Medicine

### Association of major and minor ECG abnormalities with coronary heart disease events. *JAMA* 2012; Apr 11;307:1497–505.

This prospective observational cohort study assessed 2,192 Medicare patients age 70–79 yr with no known history of cardiovascular disease. Baseline electrocardiograms were assessed for all subjects. Minor and major electrocardiogram changes were significantly associated with coronary heart disease events for up to 7.3 yr of follow-up, even after adjusting for other cardiovascular disease risk factors. Electrocardiogram changes did not independently predict all-cause mortality. These findings suggest that in older adults electrocardiogram changes may be informative for identifying individuals at risk for developing adverse coronary heart disease events.

### Gene polymorphisms and cytokine plasma levels as predictive factors of complications after cardiopulmonary bypass. *J Thorac Cardiovasc Surg* 2012; doi: 10.1016/j.jtcvs.2011.12.022.

This genotyping study of patients undergoing cardiopulmonary bypass was conducted to assess the relationship between circulating cytokines and polymorphisms and the incidence of postoperative adverse events. Single nucleotide polymorphisms *IL6-572GC+CC/IL10-592CC* were associated with postoperative death, low cardiac output syndrome, myocardial infarction, sepsis, and acute renal insufficiency. *IL6-572G>C* was associated with interleukin-10 (IL-10) plasma levels 24 h after cardiopulmonary bypass and apolipoprotein E polymorphisms were associated with decreased IL-6 levels. Based on the results of this study, genetic testing for these single nucleotide polymorphisms may be useful to identify patients undergoing coronary artery bypass who are at high risk for poor clinical outcomes.

### General anesthesia alters time perception by phase shifting the circadian clock. *PNAS* 2012; 109:7061–6.

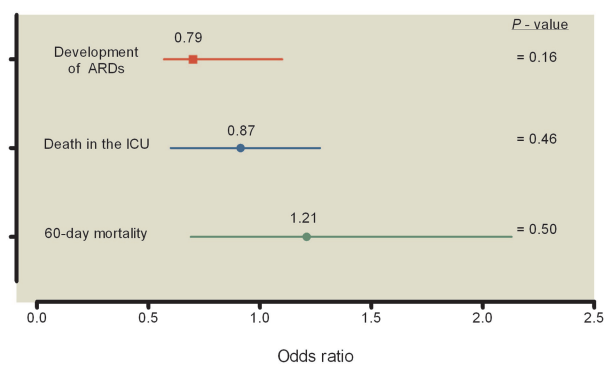
Patients who receive general anesthesia are often confused, or experience sleep disruption and fatigue. This study investigated the effects of isoflurane on time perception and the

circadian clock in honeybees. After a 6-h anesthetic treatment, the bees demonstrated a delay in the start of foraging and whole-hive locomotor-activity rhythms. Messenger RNA of circadian clock genes were also altered by anesthetic exposure. This study suggests that general anesthesia alters the circadian clock in a manner consistent with jet lag.

## Critical Care Medicine

### Statin therapy as prevention against development of acute respiratory distress syndrome: An observational study. *Crit Care Med* 2012; 40:1–8.

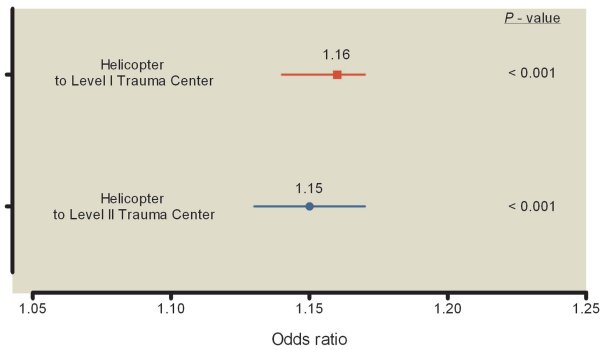
The antiinflammatory properties of statins may provide prevention against development of acute respiratory distress syndrome (ARDS). This large, prospective study followed critically ill patients with risk factors for ARDS. After patient propensity matching, statin therapy within 24 h of intensive care unit admission did not lower the risk of development of ARDS (fig. 1). Despite preclinical evidence, this and other studies do not support the use of statins to reduce the risk of ARDS in critically ill patients.



**Fig. 1.** After multivariate propensity score-matching, the use of statins was not associated with a reduced risk of development of acute respiratory distress syndrome (ARDS) death in the intensive care unit (ICU), or 60-day mortality.

### Association between helicopter versus ground emergency medical services and survival for adults with major trauma. *JAMA* 2012; 307:1602–10.

A retrospective cohort study was performed in adults with major trauma comparing survival after ground or helicopter transport to U.S. level I or II trauma centers. The outcome



**Fig. 2.** Helicopter transport was associated with an improved odds of survival compared with ground transport, when assessed using a propensity score-matched multivariable regression model.

measures were survival to discharge and discharge disposition. There were 61,909 patients who were transported by helicopter and 161,566 by ground. Patients transported by helicopter had a higher mortality (12.6% *vs.* 11%); however, they also had a higher injury severity score. After adjusting for confounding factors, survival was improved in the helicopter group regardless of whether they were transported to level I or level II trauma centers (fig. 2).

## Pain Medicine

### Pain sensitivity and opioid analgesia: A pharmacogenomic twin study. *Pain* 2012; doi: 10.1016/j.pain.2012.02.022

Although interindividual differences in response to opioids are well documented, the mechanisms are for this variability are not well understood. This study evaluated genetic and environmental contributions of interindividual differences in pain sensitivity and analgesic opioid effects using a twin paradigm. Up to 60% of the observed response variance in pain tolerance and opioid-mediated elevations in heat and cold pressor pain thresholds were attributed to genetic effects. Further detailed studies are needed to fully elucidate the genetic mechanisms involved in these observed variations.

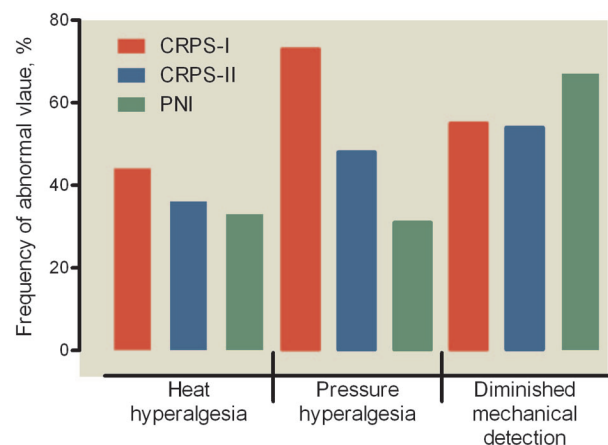
### Persistent postsurgical pain in a general population: Prevalence and predictors in the Tromsø study. *Pain* 2012; <http://dx.doi.org/10.1016/j.pain.2012.02.041>

Studies on persistent postsurgical pain may provide insights into the switch from acute to chronic pain conditions. This

questionnaire-based study queried nearly 13,000 patients who had surgery within the past 3 yr. Almost half (40%) of patients reported persistent pain in the area of surgery and of these 51% reported chronic pain. Both increased sensitivity and decreased sensitivity near the surgery were associated with chronic pain, suggesting a nerve injury phenotype. This study supports an association between sensory abnormalities in a major proportion of patients with chronic pain after surgery.

### Sensory signs in complex regional pain syndrome and peripheral nerve injury. *Pain* 2012; 153:765–74.

Although certain symptoms and signs are thought to be associated with neuropathic pain, very little thorough, systematic quantification has been done on carefully selected patient groups. This study fills an important need by characterizing complex regional pain syndrome (CRPS) patients with (CRPS-II) and without (CRPS-I) evidence of nerve injury, as well as other chronic pain subjects with peripheral nerve injury (PNI) without dystrophic or vascular signs of CRPS. Importantly, most patients in all three groups showed a hypersensitivity to painful stimuli combined with sensory loss for nonpainful stimuli. Sensory profiles for CRPS-I and -II were almost identical and particularly featured increased pressure pain and heat pain sensitivity, whereas PNI showed loss of thermal and mechanical sensitivity (fig. 3). This study's findings are valuable for developing mechanistic hypotheses and interpreting preclinical models for these conditions.



**Fig. 3.** Sensory profiles were similar for complex regional pain syndrome (CRPS)-I and -II, but not for patients with peripheral nerve injury (PNI).