Timothy J. Brennan, Ph.D., M.D., Editor

Perioperative Medicine

J. Lance Lichtor, M.D., Editor

Liberal or restrictive transfusion in high-risk patients after hip surgery. N Engl J Med 2011; 365:2453–62

In this randomized study, transfusion was set at less than 8 g hemoglobin (restrictive) or less than 10 g hemoglobin (liberal); an opportunity for transfusion based on symptoms of anemia was included. Death or inability to walk without human assistance 60 days after surgery was not different between the liberal and restrictive transfusion groups (see fig. 1). Other complications were similar between groups. If the findings of the study were followed more broadly, the risk of exposure to blood and the cost of transfusion could be greatly reduced.

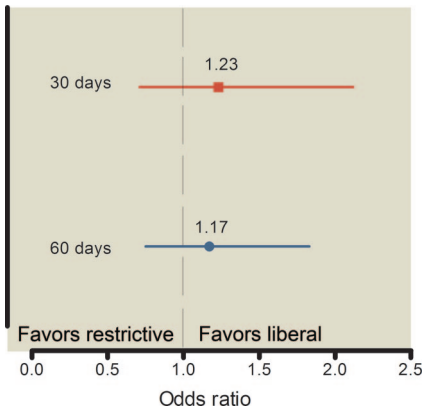

Fig. 1. Odds ratio of death at 30 days and 60 days after liberal *versus* restrictive transfusion strategies.

Surgical outcomes and transfusion of minimal amounts of blood in the operating room. Arch Surg 2012; 147:49–55

This study examined intraoperative blood transfusion and surgical morbidity and mortality. These data were retrospectively generated from one million patients who underwent noncardiac surgery. Transfusion with even one unit of packed erythrocytes was associated with significantly increased mortality, pulmonary complications, renal dysfunction, wound problems, sepsis, and longer hospitalizations (see fig. 2). These findings are similar to other studies suggesting adverse events in patients who underwent transfusion.

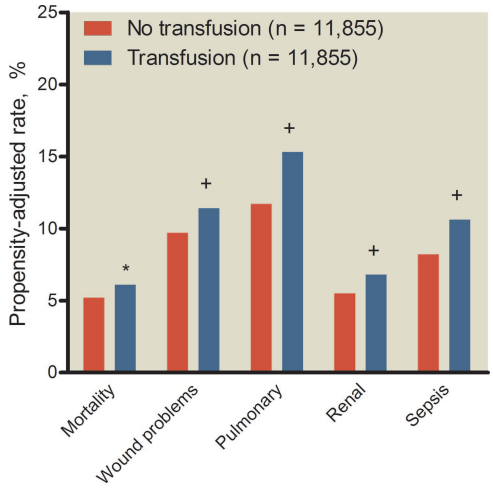

Fig. 2. Outcome comparisons between propensity-matched groups. * $P = 0.005$; + $P < 0.001$.

Bedside detection of awareness in the vegetative state: A cohort study. Lancet 2011; 378:2088–94

In this study, 16 patients were determined to be in a vegetative state using clinical criteria. It was noted that for three patients, distinct commands could generate reproducible electroencephalography responses; yet, behaviorally the patients were not responsive. The authors propose that this test could be used to confirm that patients are in a vegetative state and identify those who may have residual cognitive function and awareness.

Sleep-disordered breathing, hypoxia, and risk of mild cognitive impairment and dementia in older women. JAMA 2011; 306: 613–9

In this study of 298 women (most of whom were white) with a mean age of 82 yr, sleep-disordered breathing was shown to be associated with an increased risk of cognitive impairment 5 yr later (see fig. 3). Furthermore, hypoxia was found to further associate with cognitive impairment, suggesting that prolonged exposure to intermittent hypoxia may contribute to cognitive decline. This study has implications for perioperative cognitive impairment.

 Anesthesiology 2012; 116:1136–8

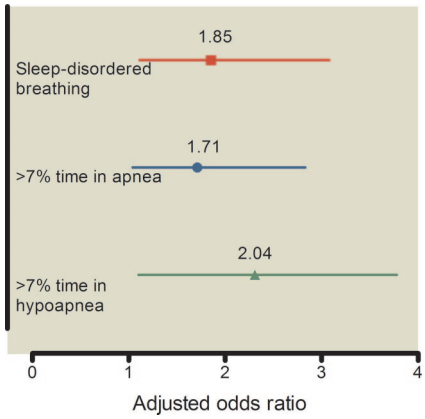

Fig. 3. Women with sleep-disordered breathing were more likely to develop mild cognitive impairment or dementia.

Critical Care Medicine

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

The ELDICUS prospective observational study of triage decision-making in European intensive care units: Part II. Intensive care benefit for the elderly. Crit Care Med 2012; 40:132–8

This prospective cohort study challenges the common view that age is not a criterion *per se* to admit critically injured patients into the intensive care unit (ICU). Requests for admissions were evaluated for 11 ICUs over a 2-yr period. Surprisingly, a greater survival benefit was present in older patients but not in younger patients admitted to the ICU (see fig. 4). Although these findings cannot be extrapolated as a general rule, these data suggest that intensivists should revise their triage practices for elderly patients, particularly accepting those appearing "well."

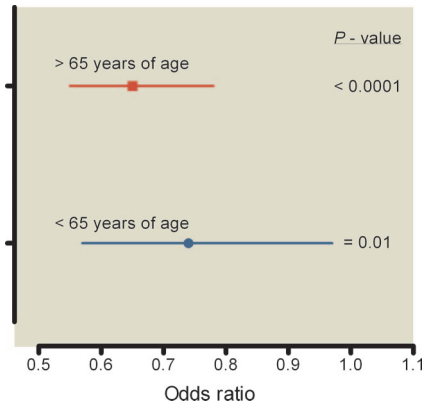

Fig. 4. Logistic regression analysis showed greater mortality reduction for elderly patients accepted *versus* rejected to the intensive care unit after correction for disease severity.

Perceptions of appropriateness of care among European and Israeli intensive care unit nurses and physicians. JAMA 2011; 306:2694–703

This study highlights a sensitive, somewhat hidden, but very frequent situation occurring with caregivers working in intensive care units (ICUs); that is, determining appropriateness of care. The feeling of providing disproportionately excessive care was the most frequent report. Perceptions of inappropriate care were inversely associated with factors indicating good teamwork, which calls for urgent consideration of good teamwork in ICUs in these countries. Inappropriateness of care was associated with increased likelihood to leave a job.

Alveolar fibrocyte percentage is an independent predictor of poor outcome in patients with acute lung injury. Crit Care Med 2012; 40:21–8

This study provides new insight into the outcome of patients with acute lung injury (ALI) and acute respiratory distress syndrome (ARDS). One hundred twenty-two patients requiring bronchoalveolar lavage were enrolled. Cell counts were compared between patients with ALI/ARDS who survived or did not survive (see fig. 5). A fibrocyte percentage more than 6% was independently associated with mortality. The use of this new biomarker could help stratify ALI/ARDS patients at high risk of poor outcome and to increase our understanding of the mechanisms of fibrocyte proliferation during injury and repair in ALI/ARDS.

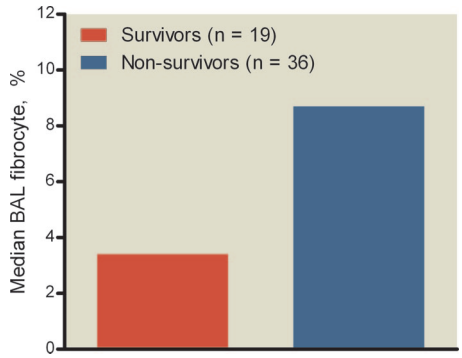

Fig. 5. Among patients with acute lung injury/acute respiratory distress syndrome, the median bronchoalveolar lavage (BAL) fibrocyte percentage was 2.5-fold higher in nonsurvivors compared with survivors ($P < 0.001$).

Pain Medicine

Timothy J. Brennan, Ph.D., M.D., Editor

Unidirectional cross-activation of GRPR by MOR1D uncouples itch and analgesia induced by opioids. Cell 2011; 147:447–58

Why does morphine make you itch? Cell 2011; 147:261–2

The mechanisms by which opioids produce itch, especially spinal opioids, are not well understood. These authors previously identified an itch-specific pathway in the dorsal horn of the spinal cord in mice. These itch-transmitting dorsal horn neurons express a gastrin-releasing peptide receptor. In this report, the authors demonstrate that a μ-opioid receptor (MOR) isoform, MOR1D, is required for spinal morphine induced scratching; yet, the MOR1D is not required for analgesia by spinal morphine. Surprisingly, the MOR1D receptor combines with the gastrin- releasing peptide receptor to signal itch by opioids. This study suggests a mechanism whereby itch can be reduced without affecting analgesia.

The mediating role of pain catastrophizing in the relationship between presurgical anxiety and acute postsurgical pain after hysterectomy. Pain 2012; 153:218–26

Preoperative predictors of acute postoperative pain vary among different surgeries. In this study, younger age, presence of presurgical pain, presence of nonpelvic pain, pain catastrophizing, and presurgical anxiety together strongly predict moderate to severe postoperative pain (see fig. 6). Anxiety appeared to contribute to pain catastrophizing. The authors propose that for patients undergoing hysterectomy, brief preoperative psychologic interventions be used to reduce the effect of anxiety and catastrophizing, which are modifiable risk factors, on moderate to severe acute postoperative pain.

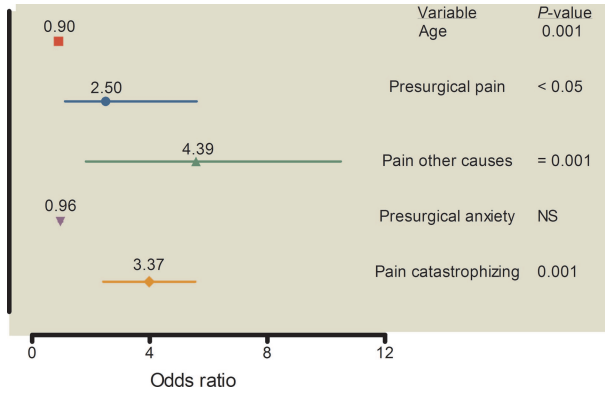

Fig. 6. Logistic regression for risk factors predicting pain severity, 48 h after hysterectomy.