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**CLINICAL SCIENCE**

- ◆◆ **Restrictive Transfusion Strategy after Cardiac Surgery: Role of Central Venous Oxygen Saturation Trigger: A Randomized Controlled Trial**  
*N. Zeroual, C. Blin, M. Saour, H. David, S. Aouinti, M.-C. Picot, P. H. Colson, P. Gaudard*.....370

A restrictive transfusion strategy using a central SvO<sub>2</sub> endpoint also reduces allogeneic erythrocyte transfusion. Using a mixed venous physiologic criterion rather than a hemoglobin target for erythrocyte transfusion represents an improved clinically relevant transfusion trigger for future clinical trials.

- ◆◆ **Intravenous versus Volatile Anesthetic Effects on Postoperative Cognition in Elderly Patients Undergoing Laparoscopic Abdominal Surgery: A Multicenter, Randomized Trial**  
*Y. Li, D. Chen, H. Wang, Z. Wang, F. Song, H. Li, L. Ling, Z. Shen, C. Hu, J. Peng, W. Li, W. Xing, J. Pan, H. Liang, Q. Zhou, J. Cai, Z. He, S. Peng, W. Zeng, Z. Zuo* .....381

This prospective randomized study found no differences in neurocognitive disorder at postoperative days 5 to 7 between patients anesthetized with a propofol-based compared to a sevoflurane-based anesthetic. Elevated interleukin-6 concentrations 1 h after skin excision may be predictive of the development of a postoperative neurocognitive disorder on postoperative days 5 to 7. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

◆ Refers to This Month in ANESTHESIOLOGY

◆ Refers to Editorial

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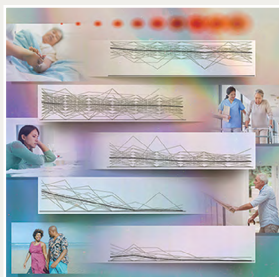
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**ON THE COVER:** Gaining a better understanding of postoperative pain trajectories may impact acute postoperative suffering and lead to preventative therapies for persistent postsurgical pain. In this issue of ANESTHESIOLOGY, Vasilopoulos *et al.* evaluated patterns of acute postoperative pain in a mixed surgical patient cohort and found multiple distinct pain intensity trajectories. In an accompanying editorial, Schreiber and Muehlschlegel review the recent evolution of postoperative pain measurement and call for personalization of pain treatment to an individual's expected pain trajectory rather than the current protocolization based solely on the procedure being performed. Cover Illustration: A. Johnson, Vivo Visuals.

- Vasilopoulos *et al.*: Patient and Procedural Determinants of Postoperative Pain Trajectories, p. 421
- Schreiber and Muehlschlegel: Personalization over Protocolization: Embracing Diversity of Pain Trajectories after Surgery, p. 363

 **Bedside Allogeneic Erythrocyte Washing with a Cell Saver to Remove Cytokines, Chemokines, and Cell-derived Microvesicles: A Clinical Feasibility Study**

*I. J. Welsby, P. J. Norris, W. J. Mauermann, M. V. Podgoreanu, C. M. Conn, L. Meade, T. Cannon, S. M. Keating, C. C. Silliman, M. Kehler, P. J. Schulte, D. J. Kor*.....395

This study found that bedside point-of-care washing of allogeneic erythrocytes was feasible for 99% of elective cardiac surgical patients included in the study, with 93% of allogeneic erythrocyte units washed per study protocol. Biologic response modifiers were significantly decreased in supernatant after allogeneic bedside erythrocyte washing when compared with before washing. Cell-free hemoglobin was significantly increased after allogeneic erythrocyte washing when compared to before washing. Percent hemolysis was assessed in a five-unit subset of washed erythrocyte units and was less than 0.8%. Future reporting of the larger randomized control trial results will help to determine impact of these findings on clinical outcomes after cardiac surgery. Cell-free hemoglobin and percent hemolysis in washed cells should be further assessed in relation to clinical outcomes and findings should be validated in other cardiac surgical cohorts.

**BASIC SCIENCE**

 **Spinal Anesthesia Reduces Myocardial Ischemia–triggered Ventricular Arrhythmias by Suppressing Spinal Cord Neuronal Network Interactions in Pigs**

*Y. Omura, J. P. Kipke, S. Salavatian, A. S. Afjouni, C. Wooten, R. F. Herkenham, U. Maoz, E. Lashgari, E. A. Dale, K. Howard-Quijano, A. Mahajan* .....405

This study's experiments were done on pigs and showed that bupivacaine spinal anesthesia during myocardial ischemia decreases neuronal firing rate in the afferent dorsal horn and efferent intermediolateral nucleus, and reduces the network interactions among the dorsal horn neurons, as well as those between dorsal horn and intermediolateral nucleus neurons. This is associated with decreased ventricular arrhythmias.

**Pain Medicine**


**CLINICAL SCIENCE**

 **Patient and Procedural Determinants of Postoperative Pain Trajectories**

 *T. Vasilopoulos, R. Wardhan, P. Rashidi, R. B. Fillingim, M. R. Wallace, P. L. Crispen, H. K. Parvataneni, H. A. Prieto, T. N. Machuca, S. J. Hughes, G. J. A. Murad, P. J. Tighe, on behalf of the Temporal Postoperative Pain Signatures (TEMPOS) Group* .....421

Monitoring postoperative pain for 7 days in 360 patients recovering from surgery allowed the identification of five distinct pain trajectories. Patient-specific factors such as age, sex, and psychologic features were the predominant determinants of trajectory group membership. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

**BASIC SCIENCE**


 **Positive Regulatory Domain I-binding Factor 1 Mediates Peripheral Nerve Injury–induced Nociception in Mice by Repressing Kv4.3 Channel Expression**


*C. Wang, Y. Pan, W. Zhang, Y. Chen, C. Li, F. Zhao, T. Behnisch*.....435

After nerve injury in mice, the enhanced expression of the positive regulatory domain I-binding factor 1 (PRDM1) reduced the expression of the Kv4.3 potassium ion channel. The reduced expression of Kv4.3 caused nociceptive sensitization in male and female mice. Conversely, maneuvers that enhanced Kv4.3 expression reduced nociceptive sensitivity in mice, suggesting that this regulatory pathway may have central importance in pain after nerve injury. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

**Critical Care Medicine**

**CLINICAL SCIENCE**

 **Greater Fibrinolysis Resistance but No Greater Platelet Aggregation in Critically Ill COVID-19 Patients**

 *C. Heinz, W. Miesbach, E. Herrmann, M. Sonntagbauer, F. J. Raimann, K. Zacharowski, C. F. Weber, E. H. Adam* .....457

Despite increases in von Willebrand factor, platelet aggregability based on impedance aggregometry testing was not increased in critically ill COVID-19, although viscoelastometric testing noted fibrinolysis resistance. These findings contribute to our understanding of the hypercoagulable state of COVID-19 and may have important considerations for management strategies.

**Education**

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 **Perioperative Platelet Transfusions**

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A brief review of the best evidence for when and how an anesthesiologist should administer platelets.

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*P. E. Visides, L. E. Moore* .....480

Stroke is a devastating perioperative complication. The objective of this narrative review is to provide an evidence-based update on perioperative stroke and to discuss future directions for the prevention, identification, and treatment of perioperative stroke.

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