

ON THE COVER:


At the conclusion of procedures where a nondepolarizing muscle relaxant was used, the benefits of anticholinesterase reversal must be balanced with potential risks. When the train-of-four ratio has spontaneously returned to 0.9 or higher, some experts have recommended against the routine use of neostigmine because this agent itself can produce muscle weakness. In this issue of *ANESTHESIOLOGY*, Murphy *et al.* demonstrate that administration of neostigmine at neuromuscular recovery was not associated with clinical evidence of paradoxical anticholinesterase-induced muscle weakness. In an accompanying Editorial View, Brull and Naguib discuss evidence against many of the myths surrounding reversal of neuromuscular blockade.

- Murphy *et al.*: Neostigmine Administration after Spontaneous Recovery to a Train-of-Four Ratio of 0.9 to 1.0: A Randomized Controlled Trial of the Effect on Neuromuscular and Clinical Recovery, p. 27
- Brull and Naguib: How to Catch Unicorns (and Other Fairytales), p. 1

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PERIOPERATIVE MEDICINE



CLINICAL SCIENCE

-   **Neostigmine Administration after Spontaneous Recovery to a Train-of-Four Ratio of 0.9 to 1.0: A Randomized Controlled Trial of the Effect on Neuromuscular and Clinical Recovery** 27
-  *G. S. Murphy, J. W. Szokol, M. J. Avram, S. B. Greenberg, T. D. Shear, M. A. Deshur, J. Benson, R. L. Newmark, and C. E. Maher*



In this randomized trial of patients achieving a train-of-four ratio of 0.9 or greater, half received either neostigmine 40 µg/kg or saline (control). There was no difference between groups in train-of-four ratios minutes after reversal or on recovery room admission and no difference in the incidence of postoperative muscle weakness, hypoxemia, or airway obstruction. Anticholinesterases should be routinely administered after neuromuscular blockade, without fear of causing muscle weakness, unless full neuromuscular recovery has been documented with quantitative monitoring.

-   **A Retrospective Analysis of the Clinical Effectiveness of Supraclavicular, Ultrasound-guided Brachiocephalic Vein Cannulations in Preterm Infants** 38
- C. Breschan, G. Graf, R. Jost, H. Stettner, G. Feigl, S. Neuwersch, C. Stadik, M. Koestenberger, and R. Likar*

The supraclavicular, in-plane, real-time, ultrasound-guided cannulation of the brachiocephalic vein is an effective method to insert central venous catheters in preterm infants. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

-   **Prevalence of Potentially Distracting Noncare Activities and Their Effects on Vigilance, Workload, and Nonroutine Events during Anesthesia Care** 44
- J. M. Slagle, E. S. Porterfield, A. N. Lorinc, D. Afshartous, M. S. Shotwell, and M. B. Weinger*

Self-initiated potentially distracting activities were common and largely restricted to stable portions of cases. Potentially distracting activity did not impair vigilance and was not responsible for any adverse events.

-  **Crystalloid versus Colloid for Intraoperative Goal-directed Fluid Therapy Using a Closed-loop System: A Randomized, Double-blinded, Controlled Trial in Major Abdominal Surgery** 55
-  *A. Joosten, A. Delaporte, B. Ickx, K. Touihri, I. Stany, L. Barvais, L. Van Obbergh, P. Loi, J. Rinehart, M. Cannesson, and P. Van der Linden*

In a randomized controlled trial, closed-loop goal-directed colloid therapy had better postoperative outcomes compared to closed-loop goal-directed crystalloid therapy.

-  **No Differences in Renal Function between Balanced 6% Hydroxyethyl Starch (130/0.4) and 5% Albumin for Volume Replacement Therapy in Patients Undergoing Cystectomy: A Randomized Controlled Trial** 67
- T. Kammerer, F. Brettner, S. Hilferink, N. Hulde, F. Klug, J. Pagel, A. Karl, A. Crispin, K. Hofmann-Kiefer, P. Conzen, and M. Rehm*

One hundred surgical patients were randomly assigned to hydroxyethyl starch (130 kilodaltons) or albumin. The primary endpoint was the change in cystatin C on postoperative day 90. Secondary endpoints were estimated glomerular filtration rate and serum neutrophil gelatinase-associated lipocalin until postoperative day 3 and risk, injury, failure, loss, and end-stage renal disease criteria up to postoperative day 90. There were no significant differences in any outcome, suggesting that starches do not cause more renal injury than albumin. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

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Cerebral desaturation seems an unlikely explanation for cognitive dysfunction. Whether anesthesia provokes cognitive dysfunction in infants remains highly controversial, but to the extent that it does, mechanisms other than cerebral desaturation should be considered. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*
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