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Perioperative Medicine

CLINICAL SCIENCE

- 🔊 **Preoperative Point-of-Care Ultrasound to Identify Frailty and Predict Postoperative Outcomes: A Diagnostic Accuracy Study**
👁️ *C. Canales, E. Mazor, H. Coy, T. R. Grogan, V. Duval, S. Raman, M. Cannesson, S. P. Singh268*

Quadriceps depth defined using point-of-care ultrasound was able to predict frailty (defined using the Fried phenotype assessment) with good discrimination. Quadriceps depth was also a predictor of certain adverse postoperative outcomes including discharge to a skilled nursing facility and delirium. Additional studies with larger samples of patients are needed to

confirm the clinical utility of this approach and determine whether these associations are independent of potential confounders such as surgery type.

- 🌐 **Dexmedetomidine Clearance Decreases with Increasing Drug Exposure: Implications for Current Dosing Regimens and Target-controlled Infusion Models Assuming Linear Pharmacokinetics**
R. Alvarez-Jimenez, M. A. S. Weerink, L. N. Hannivoort, H. Su, M. M. R. F. Struys, S. A. Loer, P. J. Colin279

The data of 48 subjects from two published pharmacokinetic studies were pooled to build a three-compartment pharmacokinetic model with nonlinear elimination clearance that successfully predicted plasma dexmedetomidine concentrations over a wide concentration range. Cardiac output did not explain between-subject or within-subject variability in dexmedetomidine elimination clearance. Dexmedetomidine elimination clearance may decrease with increasing plasma concentrations because it alters the liver blood flow-to-cardiac output ratio in a concentration-dependent manner. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

Critical Care Medicine

BASIC SCIENCE

- 🌐 **Adverse Mechanical Ventilation and Pneumococcal Pneumonia Induce Immune and Mitochondrial Dysfunctions Mitigated by Mesenchymal Stem Cells in Rabbits**
👁️ *M. Blot, M. Jacquier, L.-A. Pauchard, C. Rebaud, C. Marlin, C. Hamelle, A. Bataille, D. Croisier, C. Thomas, A. Jailil, H. Mirfendereski, L. Piroth, P. Chavanet, D. Bensoussan, C. Laroye, L. Reppel, P.-E. Charles293*

In a preclinical study, mesenchymal stem cell administration improved the outcome of rabbits with pneumonia and high-pressure mechanical ventilation by correcting immune and mitochondrial dysfunction. When combined with specific antibiotic therapy, the combination was synergistic in mitigating lung inflammation. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

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ON THE COVER: Frailty is increasingly being recognized as a public health issue, straining healthcare resources and increasing costs to care for these patients. In this issue of ANESTHESIOLOGY, Canales *et al.* report the results of a pilot diagnostic accuracy study using point-of-care ultrasound to discriminate between frail and nonfrail patients before surgery. In an accompanying editorial, McIsaac discusses the strengths and limitations of currently validated measures for assessing frailty and the value for ultrasound assessment. Cover Illustration: A. Johnson, Vivo Visuals Studio.

- Canales *et al.*: Preoperative Point-of-Care Ultrasound to Identify Frailty and Predict Postoperative Outcomes: A Diagnostic Accuracy Study, p. 268
- McIsaac: Preoperative Frailty Assessment: An Opportunity to Add Value to Perioperative Care, p. 255

Pain Medicine

CLINICAL SCIENCE

- ◆◇ Botulinum Toxin Type A for Lumbar Sympathetic Ganglion Block in Complex Regional Pain Syndrome: A Randomized Trial
 Y. Yoo, C.-S. Lee, J. Kim, D. Jo, J. Y. Moon314

Lumbar sympathetic ganglion block with botulinum toxin type A caused a greater increase in temperature in the blocked limb at 1 month than did levobupivacaine. Botulinum toxin administration also provided better analgesia at 1 and 3 months after injection than did levobupivacaine, while no adverse events were observed. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

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- ◇ Use of Dried Plasma in Prehospital and Austere Environments
 A. E. Pusateri, W. W. Malloy, D. Sauer, A. Benov, J. B. Corley, S. Rambharose, L. Wallis, M. M. Tiller, S. Cardin, E. Glassberg, R. B. Weiskopf327

More than 1,000,000 units of lyophilized plasma have been used in France, Germany, and South Africa. Recently, numerous other countries have adopted lyophilized plasma for patients with severe bleeding in prehospital and austere settings.

- ◇ Heparin-induced Thrombocytopenia: Perioperative Diagnosis and Management
 A. Koster, M. Nagler, G. Erdoes, J. H. Levy336

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REVIEW ARTICLE

- ◇ Quantitative Neuromuscular Monitoring and Postoperative Outcomes: A Narrative Review
 G. S. Murphy, S. J. Brull345

Intraoperative quantitative neuromuscular monitoring reduces the risk of postoperative residual neuromuscular blockade. Studies show that quantitative (objective) intraoperative monitoring minimizes the risk of adverse clinical events associated with residual neuromuscular block.

- ◆◇ Molecular Changes in the Dorsal Root Ganglion during the Late Phase of Peripheral Nerve Injury–Induced Pain in Rodents: A Systematic Review
 M. Chalaki, L. J. Cruz, S. G. A. van Neerven, J. Verhaagen, A. Dahan, M. J. A. Malessy362

This article reviews the current literature regarding the quantitative molecular changes in the dorsal root ganglion during the late phase (defined as survival times of 3 weeks or longer) of peripheral nerve injury–induced pain in rodents. *SUPPLEMENTAL DIGITAL CONTENT IS AVAILABLE IN THE TEXT*

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