

CONTENTS

January 2024 / VOLUME 69 / NUMBER 1

FOR INFORMATION, CONTACT:

AARC Membership and Other AARC Services

American Association for
Respiratory Care
9425 N MacArthur Blvd, Suite 100
Irving, TX 75063-4706
(972) 243-2272 • Fax (972) 484-2720
<http://www.aarc.org>

Credentialing Organization for RRT, CRT

National Board for
Respiratory Care
10801 Mastin St, Suite 300
Overland Park, KS 66210
(913) 895-4900 • Fax (913) 712-9283
<http://www.nbrc.org>

Accreditation of Education Programs

Commission on Accreditation for
Respiratory Care
1248 Harwood Rd
Bedford, TX 76021-4244
(817) 283-2835 • Fax (817) 354-8519
<http://www.coarc.com>

Grants, Scholarships, Community Projects

American Respiratory
Care Foundation
9425 N MacArthur Blvd, Suite 100
Irving, TX 75063-4706
(972) 243-2272 • Fax (972) 484-2720
<http://www.arcfoundation.org>

RESPIRATORY CARE

A Monthly Science Journal
Established in 1956

The Official Journal of the
American Association for
Respiratory Care



EDITOR'S COMMENTARY

Commentary on the January 2024 Issue **i**

EDITOR'S CHOICE

Automated O₂ Titration Alone or With High-Flow Nasal Cannula During Walking Exercise in Chronic Lung Diseases **1**
by Felix-Antoine Vézina, Pierre-Alexandre Bouchard, Émilie Breton-Gagnon, Geneviève Dion, Damien Viglino, Pascal Roy, Lara Bilodeau, Steeve Provencher, Marie-Hélène Denault, Didier Saey, François Lellouche, and François Maltais—Québec, Canada

ORIGINAL RESEARCH

A Decade of Analysis of Unplanned Extubation Etiology in Trauma Patients Including the Impact of the COVID Pandemic **15**
by Brian G Harbrecht, Keith R Miller, Michael E Egger, Nicholas A Nash, Regina Doan, Jilene Georgel, Glen A Franklin, Jason W Smith, Matthew C Bozeman, and Matthew V Benms—Louisville, Kentucky

Automatic Apnea Time Adjustments During Ventilation With Automode **24**
by Ariel J Garnero and Robert L Chatburn—Cleveland, Ohio

The Impact of High-Frequency Chest-Wall Compression on Mechanical Ventilation Delivery and Flow Bias **32**
*by George Ntoumenopoulos—Sydney, Australia
Alison Jones, Eirini Koutoumanou, and Harriet Shannon—London, United Kingdom*

Evaluation of Recovery Efficacy of Inspiratory Muscle Training After Lobectomy Based on Computed Tomography 3D Reconstruction **42**
*by Ting Wang, Fanfan Li, Xiaolan Wang, Min Wang, Xiaoli Ma, Guojing Ma, Panpan Wang, Qin Yue, Dan Zhao, Minjie Ma—Lanzhou, China
Tingrui Sang—Baoji, China
and Juan Bao—Yinchuan, China*

Risk Factors and Outcomes Associated With Re-Intubation Secondary to Respiratory Failure in Patients With COVID-19 ARDS **50**
*by Ramez M Halaseh, Ali Al-Tarbsheh, Mu'ed AlGhadir-AlKhalailah—Weston, Florida
Gail S Drescher, Ihab H Masri, Malik Ghawanmeh, Tareq Arar, Saad Al-Deen Mohammad, Rea Pavate—Washington, District of Columbia
Ma' amoon Al-Ahmad, Mouaz Haj Bakri—Gainesville, Florida
and Amaris L Alayon—Miami, Florida*

Albuterol Delivery During Invasive Mechanical Ventilation via In-Line Intrapulmonary Percussive Ventilation in a Pediatric Lung Model **61**
by Ariel Berlinski and L Denise Willis—Little Rock, Arkansas

Contribution of Transcutaneous P_{CO₂} in Obesity Hypoventilation Syndrome **68**
*by Thomas Georges—La Roche sur Yon, France
Sandrine Jaffré, Jean Morin, Hakim Alami, Cédric Bretonnière, François-Xavier Blanc, Béatrice Guyomarch—Nantes, France
and Agathe Delbove—Vannes, France*

Comparison of Outcomes Between Early and Late Tracheostomy **76**
by Jiaqi Luo, Wenfeng Xie, Shuyi Hong, Jinliang Gao, Chunhua Yang, and Yiming Shi—Guangzhou, China

Noninvasive Ventilation or CPAP for Postextubation Support in Small Infants **82**
by Andrew G Miller, Karan R Kumar, Bhargav S Adagarla, Kaitlyn E Haynes, Rachel M Watts, Jeanette L Muddiman, Travis S Heath, Veerajalandhar Allareddy, and Alexandre T Rotta—Durham, North Carolina

Online Education Improves Confidence in Mechanical Insufflation-Exsufflation **91**
*by Elizabeth Lambrinos, Collette Menadue, Olivia A McGuinness, Amanda J Piper, Kerri L Melehan—Sydney, Australia
and Mark R Elkins—New South Wales, Australia*

CONTENTS

CONTINUED...

- Impact of High-Flow Nasal Cannula Use in Subjects With COVID-19 ARDS at High Altitudes: Clinical Presentation and Prognostic Factors **99**
by Daniel Molano-Franco, Mario Gomez, Edgar Beltran, Mario Villabon, Angela Sosa, Leidy Ortiz, Estefania Orozco, Alejandra Hurtado—Bogotá, Colombia
Antonio Viruez-Soto—La Paz, Bolivia
Lida Sanchez, Christian Arias-Reyes, Jorge Soliz—Québec, Canada
and Joan R Masclans—Barcelona, Spain

SHORT REPORTS

- Comparison Among Three PEEP Titration Methods Monitored by Electrical Impedance Tomography in COVID-19 **106**
by Alita Paula Lopes de Novaes, Shirley Lima Campos, Wagner Souza Leite, Caio CA Morais, Armèle de Fátima Dornelas de Andrade, Antônio Christian Evangelista Gonçalves, Fernando Moraes, and Daniella Cunha Brandão—Recife, Brazil

- Impact of S_{pO_2} Targets and Pulse Oximeter Brand on Oxygen Flow Requirements and Oxygenation **110**
by François Lellouche, Pierre-Alexandre Bouchard—Québec, Canada
and Richard D Branson—Cincinnati, Ohio

SYSTEMATIC REVIEW

- Effects of Self-Management Interventions in People With Interstitial Lung Disease **114**
by Steve Freitas Dos Santos, Alda Marques, Patrícia Rebelo, Ana Oliveira—Aveiro, Portugal
Dina Brooks and Adam Benoit—Ontario, Canada

SYMPOSIUM: RESEARCH AND PUBLICATION IN RESPIRATORY CARE

- How to Conduct a Randomized Controlled Trial **128**
by Ramandeep Kaur and Jie Li—Chicago, Illinois

- Moving From Abstract to Manuscript **139**
by Andrew G Miller—Durham, North Carolina

CORRESPONDENCE

- Discussion on Comparison of Four Mechanical Insufflation-Exsufflation Devices: Effect of Simulated Airway Collapse on Cough Peak Flow **145**
by Marius Lebret—Antony, France
Alice Vuillermoz, Alain Mercat, François Beloncle—Angers, France
and Emeline Fresnel—Rouen, France

- Response to Discussion on “Comparison of Four Mechanical Insufflation-Exsufflation Devices: Effect of Simulated Airway Collapse on Cough Peak Flow” **146**
by Nicolas Terzi—Grenoble, France
Claude Guerin—Lyon, France
Hélène Prigent, Isabelle Vaugier, Frédéric Lofaso—Garches, France
Ghilas Boussaid—Versailles, France
Karl Leroux—Gennevilliers, France
and Bruno Louis—Créteil, France

EDITORIALS

- Automated Oxygen Titration: Advancing But Not Yet Free **149**
by Nicholas S Hill, Anjan Devaraj, and Anas Ahmed—Boston, Massachusetts

- Unplanned Extubations: Rare Event Monitoring for Continuous Quality Improvement **151**
by William E Baker and Skyler Lentz—Burlington, Vermont

- Understanding Ventilator Operation: Importance of the Respiratory Therapist at the Bedside **154**
by William M LeTourneau and Richard A Oeckler—Rochester, Minnesota