## CONTENTS

July 2017 / VOLUME 62 / NUMBER 7

## 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



A Monthly Science Journal Established in 1956

The Official Journal of the American Association for Respiratory Care



| Editor's Commentary   |       |
|---|-------|
| Commentary on the July 2017 Issue   | i     |
| Editor's Choice   |       |
| Assessing Initial Response to High-Frequency Jet Ventilation in Premature Infants With Hypercapnic Respiratory Failure by Craig R Wheeler, Craig D Smallwood, Iris O'Donnell, Daniel Gagner, and Martha C Sola-Visner—Boston, Massachusetts   | 867   |
| Original Research   |       |
| Respiratory Therapy Faculty Knowledge of and Attitudes Toward Interprofessional Education by Marlo M Vernon, Nicole M Moore, Lisa-Anne Cummins, Stephanie E Reyes, Andrew J Mazzoli, Vahe Heboyan, and Gianluca De Leo—Augusta, Georgia   | 873   |
| Evaluation of the Prevalence and Effectiveness of Education on Metered-Dose Inhaler Technique by Kayce M Shealy, Victoria C Paradiso, Megan L Slimmer, Darien L Campbell, and Tiffaney B Threatt—Clinton, South Carolina  | 882   |
| Positive End-Expiratory Pressure Effect of 3 High-Flow Nasal Cannula Devices by Jing-chao Luo, Mei-shan Lu, Zhi-hong Zhao, Wei Jiang, Biao Xu, Li Weng, Tong Li, and Bin Du—Beijing, China  | 888   |
| Incidence and Risk Factors for Cardiovascular Collapse After Unplanned Extubations in the Pediatric ICU by Paulo Sérgio Lucas da Silva and Marcelo Cunio Machado Fonseca—São Paulo, Brazil  | 896   |
| Diaphragm Muscle Thinning in Subjects Receiving Mechanical Ventilation and Its Effect on Extubation by Horiana B Grosu, David E Ost, Juhee Song, Liang Li—Houston, Texas Young Im Lee, Edward Eden, and Keith Rose—New York, New York   | 904   |
| Predicting Survival After Extracorporeal Membrane Oxygenation for ARDS: An External Validation of RESP and PRESERVE Scores by Jennifer Brunet, Xavier Valette, Dimitrios Buklas, Pierre Verrier, Calin Ivascau, Yves Dalibert, Amélie Seguin, Gérard Babatasi, Damien du Cheyron, Jean-Jacques Parienti, Cédric Daubin—Caen, France Philippe Lehoux—Saint-Lô, France Bertrand Sauneuf—Cherbourg, France | 040   |
| and Nicolas Terzi—Grenoble, France  Objective Measurement of Adherence to Out-Patient Airway Clearance Therapy by High-Frequency Chest Wall Compression in Cystic Fibrosis  | 912   |
| by Christina L Mikesell, Robert R Kempainen, Theresa A Laguna, Jeremiah S Menk,<br>Andrew R Wey, Warren E Regelmann—Minneapolis, Minnesota<br>and Philippe R Gaillard—Auburn, Alabama   | 920   |
| Flow Decay: A Novel Spirometric Index to Quantify Dynamic Airway Resistance   | 928   |
| by Anita Oh, Tessa A Morris, Isaac T Yoshii, and Timothy A Morris—San Diego, California   | 3 2 0 |
| Effect of Aerobic Exercise Training on Ventilatory Efficiency and Respiratory Drive in Obese Subjects by Mehdi Chlif, Said Ahmaidi—Amiens Cedex, France and Anis Chaouachi—Tunis, Tunisia   | 936   |
| Comparison of Cisatracurium Versus Atracurium in Early ARDS by Leanne Moore, Charles Joseph Kramer, Sophie Delcoix-Lopes, and Ariel M Modrykamien—Dallas, Texas   | 947   |

Quantitative Assessment of Airway Pathology in Subjects With COPD

Gai-qun Chen, Qing-si Zeng, Ting-ting Xia, and Jia-xuan Zhou—Guangdong, China

Using Low-Dose High-Resolution Computed Tomography

by Huai Chen, Shi-jun Qiu-Guangzhou, China

# CONTENTS

CONTINUED...

| Two-Year Follow-Up After Percutaneous Dilatational Tracheostomy in a Surgical ICU by Maria Theresa Voelker, Marcus Wiechmann, Andreas Dietz, Sven Laudi, and Sven Bercker—Leipzig, Germany  | 963  |
|---|------|
| Intratracheal Seal Disc: A Novel Tracheostoma Closure Device<br>by Karen J Christiansen, Niels Moeslund, Henrik Lauridsen, Louise Devantier, Marianne C Rohde,<br>Michael Pedersen—Aarhus, Denmark<br>and Benedict Kjærgaard—Aalborg, Denmark | 970  |
| Review  |      |
| Inhaled Drug Therapy 2016: The Year in Review by Rajiv Dhand—Knoxville, Tennessee   | 978  |
| Editorials  |      |
| High-Frequency Jet Ventilation in Preterm Infants: Is There Still Room for It? by Mário Ferreira Carpi—São Paulo, Brazil  | 997  |
| Understanding, Facilitating, and Researching Interprofessional Education  |      |
| by Ellen A Becker—Chicago, Illinois<br>and Karen S Schell—Kansas City, Kansas   | 999  |
| So That's How You Use It: How Effective Is Education on Inhaler Use? by Garner Faulkner II—San Diego, California  | 1001 |
| Correspondence  |      |
| Patient-Ventilator Asynchrony and Standard Waveforms: Looks Can Be Deceiving  |      |
| by Jeffrey M Haynes—Nashua, New Hampshire<br>author reply by Ivan I Ramirez, Daniel H Arellano, and Rodrigo S Adasme—Santiago, Chile  | 1004 |





