RESPIRATORY CARE is published monthly by Daedalus Enterprises Inc., at 9425 N MacArthur Blvd., Suite 100, Irving, TX 75063-4706, for the American Association for Respiratory Care. One volume is published per year beginning each January. Individual subscription rates are $89 per year in the US, $109 in all other countries (for airmail, add $94).

The contents of the Journal are indexed in Index Medicus/MEDLINE, Science Citation Expanded, Current Contents/Engineering, and R/INDEX Library Edition. Abridged versions of RESPIRATORY CARE are also published in Italian and Japanese, with permission from Daedalus Enterprises Inc.

Periodicals postage paid at Irving, TX and at additional mailing offices. POSTMASTER: Send address changes to Respiratory Care, Membership Office, Daedalus Enterprises Inc., 9425 N MacArthur Blvd., Irving, TX 75063-4706.

Copyright © 2013 by Daedalus Enterprises Inc.

Printed on acid-free paper.

Printed in the United States of America.

CONTENTS

EDITOR'S COMMENTARY

JULY 2013 / VOLUME 58 / NUMBER 7

Commentary on the July 2013 Issue

1113

EDITOR'S CHOICE

Albuterol Delivery by 4 Different Nebulizers Placed in 4 Different Positions in a Pediatric Ventilator In Vitro Model by Ariel Berlinski and J Randy Willis—Little Rock, Arkansas

1124

ORIGINAL RESEARCH


1134

Calculation of Physiologic Dead Space: Comparison of Ventilator Volumetric Capnography to Measurements by Metabolic Analyzer and Volumetric CO2 Monitor by Mark S Siegal, Hannah Ong, Josephine Valdes, and Julin Tang—San Francisco, California

1143

Disparity Between Mainstream and Sidestream End-Tidal Carbon Dioxide Values and Arterial Carbon Dioxide Levels by Murat Pekdemir—Kocaeli, Turkey

Orhan Cinar—Ankara, Turkey

Serkan Yilmaz, Elif Taka, and Melih Yaksel—Kocaeli, Turkey

1152

Estimation of Tracheal Pressure and Imposed Expiratory Work of Breathing by the Endotracheal Tube, Heat and Moisture Exchanger, and Ventilator During Mechanical Ventilation by Akinori Uchiyama, Takeshi Yoshida, Hidenori Yamana, and Yujie Fujino—Osaka, Japan

1157

Disease Management Programs for Patients With Asthma in Germany: A Longitudinal Population-Based Study by Michael Mehne, Ewan Deenachie, Robert Mutschler, Frank Hofmann, Manfred Keller, and Antonius Schneider—Munich, Germany

1170

Home Unattended Portable Monitoring and Automatic CPAP Titration in Patients with High Risk for Moderate to Severe Obstructive Sleep Apnea by Ersilia Tedeschi, Pierluigi Carritta, Mario Francesco Damianti, Valentina Anna Ventura—Bari, Italy

Riccardo Drigo, Edda Enzo, Alberto Ferrarese, Gep Sassor, Franco Maria Zambotto—Belluno, Italy

and Onofrio Resta—Bari, Italy

1178

The Comparison of CPAP and Oral Appliances in Treatment of Patients With OSA: A Systematic Review and Meta-analysis by Wenyang Li—Chengdu, Sichuan, China

Lin Xiao—Fuling, Chongqing, China

and Jing Hu—Chengdu, Sichuan, China

1184

Depression in Japanese Patients With Chronic Obstructive Pulmonary Disease: A Cross-Sectional Study by Nobuyuki Horita, Takeshi Kaneko, Masaharu Shinkai—Yokohama, Japan

Makiyo Tomota—Tokyo, Japan

Satoshi Morita—Yokohama, Japan

Bruce K Rubin—Richmond, Virginia

and Yoshiaki Ishigatsubo—Yokohama, Japan

1196

Hemoglobin Levels Above Anemia Thresholds Are Maximally Predictive for Long-Term Survival in COPD With Chronic Respiratory Failure by Florian Kollert, Andrea Tippelt, Carolin Müller—Donauaust, Germany

Rudolf A Jörres—Munich, Germany

Christine Porzelius—Freiburg, Germany

Michael Pfeifer, and Stephan Budweiser—Donaust, Germany

1204

Prevention of Ventilator-Associated Pneumonia: Can Knowledge and Clinical Practice Be Simply Assessed in a Large Institution? by Marla Jesús Pérez-Granda, Patricia Muñoz, Carmen Heras, Guiomar Sánchez, Jordi Rello, and Emilio Bouza—Madrid, Spain

1213

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

Credentialed Organization for RRT, CRT
National Board for Respiratory Care
18000 W 105th St
Olathe KS 66061
(913) 895-4900 • Fax (913) 895-4650
http://www.nbrcc.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

The Library Edition. Abridged versions of RESPIRATORY CARE are also published in Italian and Japanese, with permission from Daedalus Enterprises Inc.
Comparison of the Bacterial Etiology of Early-Onset and Late-Onset Ventilator-Associated Pneumonia in Subjects Enrolled in 2 Large Clinical Studies
by Marcos I Restrepo—San Antonio, Texas
Janet Peterson—Titusville, New Jersey
Juan F Fernandez—San Antonio, Texas
Zhihai Qin, Alan C Fisher, and Susan C Nicholson—Raritan, New Jersey

Safety of an Alkalinizing Buffer Designed for Inhaled Medications in Humans
by Michael D Davis—Richmond, Virginia
Brian K Walsh—Dallas, Texas
Scott T Dwyer, Casey Combs, Nico Vehse, Alik Paget-Brown, Thomas Pajewski,
and John F Hunt—Charlottesville, Virginia

T-Piece Resuscitator Versus Self-Inflating Bag for Preterm Resuscitation:
An Institutional Experience
by Archana Jayaram, Adam S.ina, Gail Barker, and Leroy R. Thacker—Richmond, Virginia

Unplanned Extubation in the Neonatal ICU: A Systematic Review, Critical Appraisal,
and Evidence-Based Recommendations
by Paulo S. Lucas da Silva, Maria Eunice Reis, Vânia Eucêbia Aguiar,
and Marcelo Cunha Machado Fonseca—São Paulo, Brazil

Complications Leading to Sudden Cardiac Death in Pulmonary Arterial Hypertension
by Efthychia A. Demeroiu, Athanassios M. Maninis, George D. Aathanassopoulos,
and George T. Karatsakis—Athens, Greece

Overcoming Jet Lag: Optimizing Aerosol Delivery With and Without Jet Nebulizers
by Mohamed Mohsen Mansour—Stony Brook, New York

Strategies to Reduce Mechanical Ventilation and Bronchopulmonary Dysplasia in Preterm Infants
by Nelson Claire, Jose Antonio Bello, and Deepak Jain—Miami, Florida

Dead Space Assessment: Field of Dreams or Clinical Paradigm?
by Ronald E. Dechert—Ann Arbor, Michigan

Bilateral Micronodular Pulmonary Infiltrate: Is It Important to Make a Histological Diagnosis?
by Kashif Ali Khan and J J Gilmartin—Galway, Ireland

Adult Inflammatory Myofibroblastic Tumor of the Trachea: Case Report and Literature Review
by Funda Oztuna, Mehtap Pehlivanlar, Yasin Abul, Celal Tekinbas, Yavuz Ozoran,
and Tevfik Oclu—Trabzon, Turkey

Pneumothorax Caused by Aggressive Use of an Incentive Spirometer in a Patient With Emphysema
by Jon-Emile S. Kenny and Ware G. Kuschner—Palo Alto, California

Round Pneumonia in a 50-Year-Old Man
by Burke A Cunha, Arthur Gran, and Jaime Simon—Stony Brook, New York

by Patricia Carroll—Middletown, Connecticut
author response by Avyakta Kallam and Ariel Modrykamien—Omaha, Nebraska

Practice of Excessive FIO2 and Effect on Pulmonary Outcomes in Mechanically Ventilated Patients With Acute Lung Injury
by Sunee Chamsuri and Kristen Duffy—East Stroudsburg, Pennsylvania
author response by Sonal Rachmale—Rochester, Minnesota

Dead Space Fraction: One of Many Choices to Assess PEEP Titration
by Mary Ann Couture—Hartford, Connecticut