

New Directions in Neonatal Respiratory Critical Care

A CME Accredited Satellite Symposium at the 2014 Hot Topics in Neonatology Annual Meeting

Tuesday, December 9, 2014 – 11:40am to 1:00pm
Omni Shoreham Hotel, Washington DC
Empire Ballroom - Buffet Lunch

Faculty

Martin Keszler, M.D.
Professor of Pediatrics, Brown University
Women and Infants Hospital
Providence, RI

Thomas H. Shaffer, MS.E., Ph.D.
Professor of Physiology and Pediatrics
Thomas Jefferson School of Medicine
Temple University School of Medicine
Philadelphia, PA

Jan Mazela, M.D., Ph.D.
Associate Professor, Medical Director
Department of Neonatology
and Infectious Diseases
Poznan University of
Medical Sciences, Poland

Agenda

11:40 – 11:45	Welcome & Objectives - <i>Martin Keszler, M.D.</i>
11:45 – 12:00	Recent Observations in Surfactant Pharmacology: Translational Impact for Neonatal Care - <i>Thomas H. Shaffer, MS.E., Ph.D.</i>
12:00 – 12:10	Discussion
12:10 – 12:25	Attempts to Minimize Invasiveness during the Acute Period: Where do we go from Here? - <i>Jan Mazela M.D., Ph.D.</i>
12:25 – 12:35	Discussion
12:35 – 12:50	New Directions in Respiratory Support in Neonates Including: Sustained Inflation in the Neonate, Closed Loop Ventilation, & Neonatal Volume Guarantee Ventilation - <i>Martin Keszler, M.D.</i>
12:50 – 1:00	Discussion

Physician Accreditation Statement:

The live symposium will be accredited for *AMA PRA Category 1 Credit™* by Nemours. Nemours is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians. Nemours designates this live material for a maximum of 1.25 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in this activity.

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Program Overview

Respiratory failure secondary to surfactant deficiency is a major cause of morbidity and mortality in preterm infants. Over the last few years, a number of clinically important topics have emerged surrounding the use of surfactants. A wide variety of animal and synthetic surfactants are now available for use commercially in the US. While both have been demonstrated effective as therapy of RDS in preterm infants, it is unclear whether significant differences in clinical outcomes exist between the available animal-derived and synthetic products.

Avoidance of intubation from the first minutes of life is a goal for all neonatal teams. Real-life experience has taught us that achieving it might be very difficult. There are human factors such as learning experience, clinical management details such as providing appropriate medications, as well as prenatal factors which influence the final result of "being less invasive".

While survival of extremely low gestational age newborns has improved substantially over the past two decades, the incidence of bronchopulmonary dysplasia remains high. New approaches to respiratory support aimed at reducing neonatal lung injury continue to be explored. Closed loop ventilation strategies have become commonplace in adult medicine but are only slowly gaining traction in neonatology. Volume guarantee has not been adopted as rapidly in North America as available evidence suggests it should. Sustained inflation is a physiologically attractive intervention in the delivery room designed to help clear lung fluid and rapidly achieve uniform lung aeration, however a definitive trial is only just getting underway with this approach.

This program will tackle these issues utilizing thought leader presentations and debate to provide clarity for the practicing physician.

Educational Objectives

At the conclusion of this educational event, participants will be able to:

1. Discuss the issues regarding the comparison of animal-derived and synthetic surfactants.
2. Summarize the issues surrounding improving the efficiency of pulmonary drug delivery.
3. Describe current recommendations and discrepancies between them and real-life early clinical management.
4. Identify prenatal risk factors leading to nCPAP failure.
5. Maximize success of non-invasive ventilator support and less invasive surfactant therapy.
6. Compare potential advances in aerosolized surfactants including the problems and potential solutions.
7. Discuss the unique aspects of neonatal respiratory physiology and the complexity of patient-ventilator interactions during synchronized mechanical ventilation.
8. Describe the basic concepts surrounding volume guarantee ventilation and closed loop systems of respiratory support, and know the available evidence of the benefits of each.
9. Summarize the rationale for the sustained inflation maneuver and be familiar with the evidence for its effectiveness, as well as the gaps in current knowledge.

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Supported by an educational grant from Discovery Laboratories, Inc.