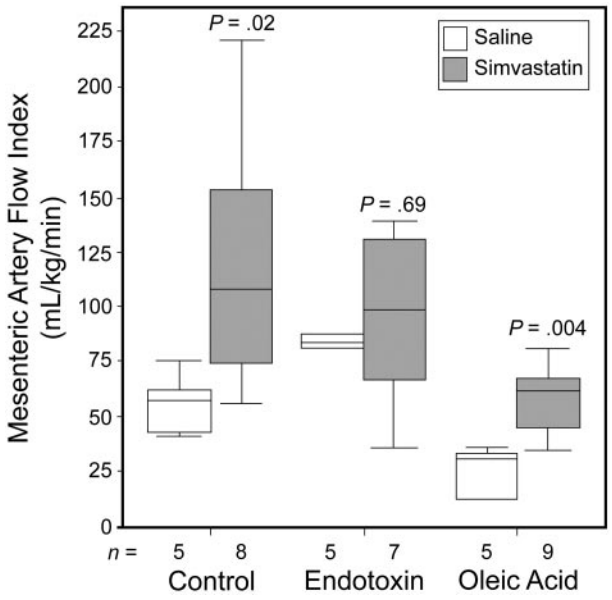

Fig. 1. Mesenteric artery flow indices in saline, endotoxin, and oleic acid-treated groups. Mesenteric artery flow index increased in mice after endotoxin injection, whereas it decreased in mice after oleic acid injection, as compared to the control group, which received saline ($P = .028$ and $P = .009$, respectively). Pretreatment with simvastatin resulted in higher mesenteric flow indices in the control and oleic acid groups.

baseline NO production may be the explanation of these beneficial effects of simvastatin.

We hope the vasodilatory effect of chronic simvastatin therapy in healthy animals will also be supported with clinical studies in humans.

Neriman Defne Altintas MD
Pergin Atilla MD
Alper Bektas Iskit MD
Arzu Topeli MD
Hacettepe University Faculty of Medicine
Ankara, Turkey

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Pediatric Asthma Management

In the September 2011 issue of RESPIRATORY CARE, Myers and Tomasio provide an excellent review of current asthma management and pathophysiology in their article titled "Asthma: 2015 and Beyond."[1] In the section regarding emergency department (ED) treatment the authors assert that it's widely accepted that a treatment given via small-volume nebulizer (SVN) is preferred over metered-dose inhaler (MDI) with spacer. Pediatric patients and parents overwhelmingly prefer MDI with spacer to SVN (84% for parents and 82% for patients).[2] The authors cite no references to support their claim, and MDIs have been proven to be as effective as SVN in pediatric patients. They state children can't perform an effective MDI technique, but treatments given with a spacer, valved holding chamber with mask are effective for medication delivery.[3] Given that the therapeutic benefit of an aerosol given by blow-by[4] or loose fitting mask[5] is greatly reduced or negligible, the administration method chosen should be the one the child tolerates best.[6,7] Giving treatments via MDI with spacer reinforces to the parents and patients that MDI with spacer and mask works as well as treatment via SVN.

The authors describe conflicting conclusions from a meta-analysis and Cochrane Review about the benefit of continuous albuterol therapy. Continuous albuterol has been shown to be a safe and effective treatment of asthma exacerbations and may be of benefit for patients with the most severe air-flow obstruction.[8] Heliox is an effective adjunct in severe asthma and can be initiated in the ED to reduce work of breathing, increase bronchodilator deposition, and reduce air-trapping. Heliox is not indicated for routine use in asthmatic patients but may be of benefit for severe exacerbations in the ED.[9,10] Intravenous magnesium is also an effective treatment option that can be initiated in the ED.[11] Inhaled magnesium sulfate is a potential novel treatment for severe asthma.[12] Positive-pressure ventilation can also be used to effectively treat pediatric patients in the ED and those admitted to a pediatric intensive care unit.[13,14] Respiratory therapists are crucial in the early detection and initiation of adjunctive therapy in preventing respiratory failure.

The ED can be considered a golden opportunity for asthma education. Most asthma patients who present to the ED are discharged home. An asthma attack severe enough to present to the ED means the patient has poorly controlled asthma or requires proper teaching on proper medication use and should be started on controller medication. Unfortunately, many patients have poor follow-up, due to various socioeconomic factors and ED physicians' reticence in acting as primary care in prescribing pediatric patients with controller medications.[15,16] Proper education of patients is essential to prevent their return to the ED and to prevent a potential life-threatening attack. Assuring patients have access to their medications, use proper techniques when using their MDIs, understand when to give each medication, and when to return to the ED are essential to their treatment. We should look at visits to the ED as an opportunity to educate patients by not only treating their current exacerbation but also optimizing their overall medication reg-

imen. Respiratory therapists have a large impact in the proper education of asthma management and encouraging physicians to place patients on the proper controller medications.

Andrew Miller RRT
Emergency Department
Duke University Medical Center
Durham, North Carolina

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The authors respond:

We appreciate Andrew Miller's assessment of our paper. He raises several issues about our paper,[1] which was part of the 47th RESPIRATORY CARE Journal Conference, "Neonatal and Pediatric Respiratory Care: What Does the Future Hold?" We will address his 3 specific points around delivery devices, exacerbation management in the emergency department, and the role of asthma education.

1. The selection of aerosol delivery devices in the management of air-flow obstruction is a very polarized topic, often based on little scientific evidence and institutional or personal biases. Our review[1] was not a prescriptive direction of any specific delivery device, and in fact mentioned pressurized metered-dose inhalers (pMDI) and small-volume nebulizers as comparable methodologies. The studies cited by Mr Miller are 10-15 years old and do not match today's common practice in most pediatric emergency room settings for "severe exacerbations." The most comprehensive evidence-based systematic review of aerosol delivery devices was published by Dolovich et al.[2] The publication reviewed only randomized controlled trials in which the same drug was delivered via nebulizers, pMDIs (with and without valved holding chambers), and powder inhalers for delivery of β agonists, anticholinergic agents, and inhaled corticosteroids in various clinical settings (emergency department, in-patient, intensive care, and out-patient) and patient populations (pediatric and adult asthma, and COPD). The conclusion of the Dolovich et al[2] review is that each of the aerosol devices can work equally well in various clinical settings.

However, as pointed out by Hess regarding the Dolovich review,[3] "the findings of the review should not be interpreted to mean that the device choice for a specific patient does not matter. Rather, the study simply says that each of the devices studied can work equally well in patients who can use them appropriately." Hess goes on to state that, "For example, infants and toddlers are unlikely to correctly use a pMDI (without a valved holding chamber) or a powder inhaler. Also, there are few randomized controlled trials of pMDI without valved holding chamber in the emergency department, since most clinicians believe that the severe dyspnea experienced by many asthma patients in that setting would prevent them from using this device properly."

All aerosol delivery devices have their advantages and disadvantages and have been thoroughly documented in the literature.[3] We wholeheartedly agree with Mr Miller's comments that highlight the negative aspects of aerosol therapy administered by a "blow-by methodology" or without a proper mask-face interface and seal.[4-6] This should not be considered an indictment of a specific device, but that of the bedside caregiver.

2. The conclusions from the meta-analysis and the Cochrane review basically do not show strong scientific or clinical evidence either through an intermittent or continuous nebulizer therapy strategy, and that is the statement we brought forth in our manuscript.[1] We do not disagree with Mr Miller's assertions or claims about the efficacy and safety of continuous therapy in patients with severe air-flow obstruction. It is important to note that the Peters manuscript[7] cited in the letter to the editor is a review and not a clinical trial, with a heavy slant of adult trials. In fact, in Peters' own conclusion of the review manuscript he states, "Continuous bronchodilator administration is a novel therapy for acute and severe bronchospasm that may be effective in mitigating the exacerbation, potentially avoiding hospitalization," which seems to bring forth the same conclusion as we did that continuous bronchodilators in pediatric asthma exacerbations is neither better nor inferior to intermittent therapy.

We also agree with Mr Miller's comments on the use of magnesium and positive pressure as adjuncts in the management of asthma exacerbations, and we briefly

mentioned those in the "In-Patient Asthma Treatment" section of our manuscript as novel therapies in asthma management. A meta-analysis of nebulized and intravenous magnesium sulfate has shown positive outcomes in patients with asthma exacerbations, with a heavy slant of evidence in those patients with severe air-flow obstruction.[8]

3. We wholeheartedly agree with Mr Miller's statement and conclusions on the benefit of asthma education, not only in the emergency department, but across all venues in the continuum of care of children with asthma visits.[9] In a previous published manuscript by Kallstrom and Myers,[10] we expressed the opportunity for respiratory therapists to make an large impact by being "key members of the asthma disease-management team, in acute-care settings, patients' homes, out-patient clinics, emergency departments, and in the community. Utilizing respiratory therapists as disease managers allows patients to be treated faster and more appropriately, discharged to home sooner, and decreases hospital admissions. Respiratory therapist are leaders in the emerging field of asthma disease management."

Timothy R Myers RRT-NPS
Liza M Tomasio RRT-NPS
Pediatric Respiratory and Diagnostic Services and Pediatric Heart Center
Rainbow Babies and Children's Hospital
Case Western Reserve University
Cleveland, Ohio

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CORRECTION

In Table 1 of the paper "Acute lung injury: prevention may be the best medicine" by Litell JM, Gong MN, Talmor D, and Gajic O (Respir Care 2011;56[10]:1546–1554), the definitions for the P_{aO_2}/F_{IO_2} ratio for ALI and ARDS were inverted. The corrected table appears below.

Table 1. American-European Consensus Conference Criteria for Acute Lung Injury and Acute Respiratory Distress Syndrome

	Chest Radiograph	P_{aO_2}/F_{IO_2} (mm Hg)	Pulmonary Artery Occlusion Pressure
ALI	Diffuse bilateral infiltrates	≤300	≤ 18 mm Hg or no clinical evidence of left atrial hypertension
ARDS	Diffuse bilateral infiltrates	≤200	≤ 18 mm Hg or no clinical evidence of left atrial hypertension

ALI = acute lung injury
ARDS = acute respiratory distress syndrome
(Adapted from Reference 4).