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ATS DAILY BULLETIN
Where today’s science meets tomorrow’s care

Tuesday, May 21, 2019

Climate Change: Call It What It Is

S cientific leaders agree there is climate change, political leaders do not. But speakers at Monday’s Global Perspectives on Climate Change: Impact on Susceptible Populations and Low-Income Countries said medical professionals have a responsibility to educate and protect patients against the health problems directly related to climate change. This should begin with calling out climate change in the clinical setting, said Mary B. Rice, MD, a pulmonologist at Beth Israel Deaconess Medical Center in Boston.

“Let’s begin calling climate change what it is. Let’s use those words,” said Dr. Rice. “When patients have conditions that are caused by climate change, we need to tell them and make it real for them. Let them know this isn’t pseudoscience.”

Monday’s session served as a call to action with Dr. Rice, co-chair of the event, saying physicians can get involved in climate control policy and advocacy, and even question energy use at their own facilities, but she urged them to step up and play a role in changing the dialogue about climate change.

“Talking about ice caps and polar bears is not going to win people over,” Dr. Rice said. “No one can relate to polar bears.”

People are paying attention to climate change even if government is not, said Waleed Abdalati, PhD, director of the Cooperative Institute for Research in the Environment at the University of Colorado.

“Political leaders do not, there is climate change; scientific leaders agree,” Abdalati said.

“Climate change is not a matter of belief,” he added. “The scientific community is essentially unanimous that climate change is happening.”

For physicians, climate change holds several important messages, said Dr. Rice.

“Let’s begin calling climate change what it is. Let’s use those words,” said Dr. Rice. “Let’s ensure that our patients can see these connections clearly.”

The connection is critical to the development of patient education and treatment plans, she said.

“Let’s ensure our patients understand this is real for them. Let them know the health problems are caused by climate change, patients have conditions that are caused by climate change, and that we can do something,” said Dr. Rice.

Dr. Rice agreed with Dr. Abdalati that there is a level of universality to climate change, meaning people of all kinds and backgrounds are affected.

“Watching the ice caps melt in the Arctic is not something that we can all relate to,” Dr. Rice said. “But people can relate to severe weather events and changes in seasons.”

Dr. Rice said she had spent time in the Arctic and felt the connection with the people of the region.

“Let’s utilize, taking my images to another level of effectiveness,” Mr. Kashi said. “I believe in the power of images to change people’s minds.”

“With every story of how people are affected,” he said, “I will add an image that shows how the environment has changed.”

“After seeing with my own eyes what was happening, where every day a sugar cane worker was dying from CKD, I resolved to make this an ongoing personal project,” he said.

During today’s plenary session, he’ll share why he believes in the power of images to change people’s minds.

“Working on the Aging in America project is where it all came together for me on the level of advocacy and raising awareness by creating work that others could utilize, taking my images to another level of effectiveness,” Mr. Kashi said of his eight-year topographical look at how America is an aging society, and both the pros and cons of what’s to come.

“It was with Aging that I discovered the possibilities in creating work that makes a difference and can be used by a broad range of people, foundations, NGOs, and academia to advance a cause, create more awareness, legislative, and advocate for change,” he said.

Much of Mr. Kashi’s work exposes geopolitical and social issues, including those that uncover health care crises. During today’s plenary, he will take attendees on a visual journey through his projects and those that uncover health care crises. During today’s plenary, he will take attendees on a visual journey through his projects and address how he came together for me on the level of advocacy and raising awareness by creating work that others could utilize, taking my images to another level of effectiveness. Mr. Kashi said of his eight-year topographical look at how America is an aging society, and both the pros and cons of what’s to come.

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“It was with Aging that I discovered the possibilities in creating work that makes a difference and can be used by a broad range of people, foundations, NGOs, and academia to advance a cause, create more awareness, legislative, and advocate for change,” he said.
Gilead is committed
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Women’s Forum: Mentor, Menteer Secrets to Success

I n a rising tide lifts all ships, the discussion at Monday’s Women’s Forum indicates the ATS Fleet is striving to get stronger in years to come.

The luncheon presentation focused on developing meaningful mentor-menteer relationships in the medical community, a topic specifically requested after last year’s forum. Keynote speakers Lorraine Ware, MD, and Julie Bastarache, MD, MPH, are a former mentor-menteer duo from Vanderbilt who are now colleagues and friends, even sharing Thanksgiving family dinner get-togethers. They shared their secrets to success with a packed ballroom in the Hyatt Regency.

Dr. Ware, the mentor half of the duo, reminded the audience that medical professionals who receive strong mentoring are more productive, are more satisfied with their careers, publish more articles, and have more confidence. She also shared five tips for being a great menteer.

“I don’t think people are born great menteers,” she said. “There are steps that everyone in this room can take.”

1. Establish your goals. “The goal is not to be your mentor. You’re trying to get to where you want to go.” She also noted that a mentor may fill different roles—a counselor, an adviser, a promoter. For women especially, a mentor can be your defender if you feel threatened, whether in a personal or professional situation. A mentor in a higher position can exert more power and experience less risk by speaking out.

2. Drive the agenda. A menteer needs to take charge. Have an agenda for each time you meet with your mentor. Send follow-up notes as well.

3. Do the heavy lifting. Put in the necessary work, and do it with enthusiasm.

4. Listen and communicate. “The only thing I’ve found irritating or annoying or challenging,” she said, “has been when mentees have gone rogue.” Dr. Ware said if your mentor does not have input, he or she cannot help you.

5. Persevere. It’s going to be rough at times, but keep going. Dr. Bastarache presented the menteer perspective—the things a mentor must have from the perspective of someone in a mentee position.

1. Time. Mentorship takes an incredible amount of time. It’s important that someone who becomes a mentor has sufficient time to dedicate.

2. Generosity. Mentoring may mean “giving someone a kernel of an idea and letting them run with it,” said Dr. Bastarache. “It can be really hard, but it’s important.”

3. Availability. Dr. Bastarache said she talks to Dr. Ware almost every day. Mentors need to have an open-door policy.

4. Flexibility. Mentors have to be willing to bend based on what a mentee proposes. “One of the most fun things about being a mentor is when your mentee comes to you with good ideas,” she said.

5. Chemistry. “Being a mentor is not just about giving people money or advice,” said Dr. Bastarache. “It’s about having a great working relationship. The mentor and mentee should complement each other, not be carbon copies of each other.”

The pair encourages everyone in the ATS to reach out—either as a mentor or menteer—to start building these valuable and lasting relationships.

KEYNOTE SERIES

Value-Based Care, Diversity, and AI

Do n’t miss the final two days of the ATS Keynote Series on Tuesday and Wednesday as speakers explore evidence for value-based care in pulmonary medicine, look at enhancing diversity and inclusion in academic medicine, and outline what pulmonologists should know about artificial intelligence and machine learning.

Keynotes are presented at 8 a.m. each day, when no other activities are offered in the ATS to reach out—either as a mentor or menteer—to start building these valuable and lasting relationships.

TUESDAY

Developing the Evidence for Value-Based Care in Pulmonary Medicine (K5) Ballroom C One-Two (Level 2), KBHCCC
Robert M. Califf, MD, professor of cardiology and professor of medicine at Duke University School of Medicine in Durham, North Carolina, will explore ways real-world data can serve as evidence for value-based care.

Dr. Califf is a former commissioner of the Food and Drug Administration and former deputy commissioner for Medical Products and Tobacco. A nationally and internationally recognized expert in cardiovascular medicine, health outcomes research, health care quality, and clinical research, Dr. Califf has led many landmark clinical trials and is one of the most frequently cited authors in biomedical science, with more than 1,200 publications in the peer-reviewed literature.

Enhancing Diversity and Inclusion in Academic Medicine (K6) Ballroom C Three-Four (Level 2), KBHCCC
David S. Wilkes, MD, dean of the School of Medicine at the University of Virginia in Charlottesville, will describe the value of an inclusive environment in the setting of academic medicine and outline the steps it will take to get there. Dr. Wilkes is a nationally recognized physician-scientist who has served as a permanent member of study sections at the National Institutes of Health, as well as a member of the National Advisory Council for the National Institutes of Allergy and Infectious Diseases. Dr. Wilkes is a current member of the Board of Scientific Counselors for the National Heart, Lung, and Blood Institute at NIH. Discoveries from Dr. Wilkes’ lab were the basis for his founding ImmuneWorks, a biotech company developing novel therapeutics for immune-mediated lung diseases.

WEDNESDAY

What Should Pulmonologists Know About Artificial Intelligence and Machine Learning? (K7) Ballroom C One-Two (Level 2), KBHCCC
Michael D. Howell, MD, MPH, chief clinical strategist for health care in Google Brain, will present key techniques in modern machine learning and how these differ from traditional statistical and programming approaches. He will also describe how to recognize important opportunities for artificial intelligence and machine learning to influence pulmonary medicine.

Dr. Howell was the founding director of the Center for Healthcare Delivery Science and Innovation and chief quality officer at the University of Chicago Medicine. His research has focused on novel uses of electronically derived health care data to create insights that improve patient care, with particular attention to patient safety, health care quality and operations, and diseases of the acute illness such as sepsis, pneumonia, health-care associated infections, and cardiac arrest.
‘Future Giants’ Share Research

Four emerging scientists, who Polly Parsons, MD, ATS, called “future giants” during the President’s Symposium, shared information about their research via video. The videos can be viewed at http://conference.thoracic.org/program/presidential-symposium-at-ATS2019.php.

Tien Peng, MD
Studying the biology of the fibroblasts that sit adjacent to epithelial stem cells in the lungs.

Denise Al Alam, PhD
Seeking to understand the mechanisms that go into the development of the human lung.

Susan Berket, PhD
Researching the interaction between the abnormal levels of mucous in the airways of patients with cystic fibrosis and bacteria in those airways.

Bradley Maron, MD
Investigating pulmonary arterial hypertension and other pulmonary vascular diseases.

Hassina Outtz Reed, MD, PhD
Using mouse modeling to understand pulmonary vasculature, in general, and pulmonary lymphatics, in particular.

Celebrating 50 Years of Hope

In the 50 years since the NIH’s Division of Lung Diseases (DLD) launched, it has facilitated groundbreaking science that is leading to improved outcomes for lung diseases.

“It is a virtuous cycle of success to turn discovery science into improving lung disease outcomes,” said Gary Gibbons, MD, director of the National Heart, Lung, and Blood Institute and co-chair of Monday’s session.

Speakers (as well as researchers via video, see ‘Future Giants’ Share Research at left) reviewed key scientific advances in pulmonary health and disease that illustrated DLD’s celebrated role. Speakers explored the history, research, clinical trials, treatments, and roads ahead for asthma, respiratory distress syndrome in neonates, COPD, and ARDS.

Jeffrey Drazen, MD, editor in chief of the New England Journal of Medicine, explored the evolving treatments of asthma beginning in 1969, starting with epinephrine, med inhalers, salbutamol/albuterol, cortisone, and interleukins. Dr. Drazen described how the prevalence of asthma has also encouraged lots of Pharma-supported research.

“Now, we have four biologics. We are waiting for the results of NHLBI’s Expert Panel Report 4 Working Group,” he said. “I think in the next decade we will learn how to use the drugs in a way that makes sense. We don’t know about new biologics. We don’t know the relative effectiveness.

“We have made great progress,” he said. For the future, he recommends phenotyping asthma by genotype, using ancestry informative markers, and stopping use of self-declared race as ways to prevent asthma.

Reviewing 50 years of respiratory distress syndrome in neonates, Jeffrey A. Whitsett, MD, a pediatrician at Children’s Hospital Medical Center in Cincinnati, said there was no intensive care for neonates with RDS in 1969.

“Back then, virtually every baby with it died; today, it is a rare moment. Science and reality took the application of physiology, engineering, and biochemistry and allowed it to go away.”

Through research, the community has learned of the “symphony of change that courses through the body thanks to the lungs,” he said. Ultimately, critical findings revealed the role surfactant plays in the development of lungs and has led to surfactant replacement therapy and the potential of lung remodeling.

Today, he said, we are using those findings to begin to tackle some of the adult diseases of the lung.

COPD “has been climbing the leaderboard, but not in a good way,” said Meilan K. Han, MD, MS, University of Michigan, Ann Arbor, of the third leading cause of death globally. From its early days, she said there was a “dismissiveness of COPD” because it was viewed as a disease of the old or the patient who brought it on themselves via cigarette smoking. However, data from around the world shows it to be a disease of the young. “We do not yet fully understand all of this data, but we look to poor air quality.”

Declaring COPD an epidemic, she cited important milestones in the last 50 years, including development of the spirometer, improved definitions of COPD, distinctions for diagnostic standards, the benefits of smoking cessation, and the protease-antiprotease hypothesis.

Although there has been significant improvements in outcomes of acute respiratory distress syndrome, Carolyn S. Calfee, MD, University of California, San Francisco, said there is still room for improvement. Understanding the broader implications of ARDS by encouraging experimental research will allow for post-critical illness recovery and will make a global impact, she said. “We must be patient because it can take years to translate learning into patient outcomes and treatment,” she said.

Gibbons lauded the 50 years of work for bringing about hope, optimism, and confidence. “We have done a lot, but there is a lot of work left to do,” he conceded. “We look forward to a day when we do not see chronic lung disease at all.”
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All Work and Some Play

From learning about new technologies to petting service dogs in the name of restoring joy to health care, Monday’s schedule combined the best of work and play.
Nights in the ICU Can Impact Patient Care

When the sun goes down, the ICU patient experience changes. New shifts begin, sleep disturbances are common, and an end to visiting hours can all affect a patient’s overnight experience. This changing ICU environment can affect care delivery and patient response, too. Health care professionals who are mindful of these changes can improve the experience by using proven interventions, which are outlined during today’s session, where panelists will dissect the world of the ICU at night from multiple stakeholders’ perspectives, including those of physicians, nurses, patients, and their families.

“The ICU differs at night across many dimensions,” said Hayley B. Gershengorn, MD, ATSF, associate professor at the University of Miami Miller School of Medicine, and a co-chair for this session. “ICU staffing is quite different overnight than during the daytime in terms of number of clinicians and the need for them to cross-cover for patients in other locations.”

Resources outside the ICU differ substantially between daytime and nighttime. Traditional hospital/ICU policies limit visitation by family and friends overnight, which may impact patient comfort and delirium. Another consideration is the patient’s normal circadian rhythms. “To not destroy normal circadian rhythms, patients should be asleep overnight and awake during the daytime,” she said. “In the confines of a busy ICU and in a room without direct sunlight, keeping the distinction between day and night straight for our patients is challenging. It requires effort directed at creating the right time-specific climate.”

By its very nature, the ICU could be a busy place because of patient checks from hospital staff. And nighttime is no different. “Overnight in the ICU, a good night’s sleep can be hard to come by,” she said. In those instances, she said certain pharmacologic and non-pharmacologic strategies may be effective in improving a patient’s overnight experience.

“If we’re more mindful about sleep promotion, there are simple, common-sense aspects of patient care that we can easily improve upon, such as turning down the lights at night, reducing environmental noise, and being more flexible in the timing of non-urgent aspects of care (such as bathing),” said Jean Hsieh, MD, MS, associate professor at the Icahn School of Medicine in New York, and co-chair for this session. The session will explore other strategies, as well. For example, Dr. Gershengorn said limited data suggests patients admitted to or discharged from the ICU at different times of the day (day versus overnight) may have different outcomes. As staff changes and family hours end, be mindful of the possibility of patient anxiety. There could be a small element of fear at play, according to May Hua, MD, MSci, assistant professor at Columbia University Medical College in New York, and co-chair of this session. “As fewer people are around in general (and family may not be around), some patients have anecdotally stated that they had concerns or feelings of being abandoned,” said Dr. Hua. “What is more prevalent is ‘sundowning,’ where delirium, particularly in an agitated form, may be more likely to occur for certain patients during the nighttime.”

When the Sun Sets: Nighttime in the ICU (C4)
2:15-4:15 p.m., Tuesday
Omni Dallas Downtown, Dallas Ballroom D/H (Level 3)

Hayley B. Gershengorn
Jean Hsieh
May Hua

The next grant cycle begins on July 18, 2019!

Established in 2005, ENTELLIGENCE is a program for basic science, translational, and clinical research in the field of cardiopulmonary medicine. The program provides opportunities for individual young investigators to promote quality medical care and enhance patients’ lives by supporting research in pulmonary hypertension related to expanding our knowledge of the pathways involved in pulmonary vascular pathobiology.

Award winners may receive a research grant of up to $100,000 to fund a 1-year mentored project

ENTEELLIGENCE Milestones
Year established: 2005
Review cycles completed: 13
Awards distributed: 63
Funding: >$5.4 million

The application process is simple
1. Confirm your eligibility, including acquiring a mentor
2. Submit a Letter of Intent (LOI) proposal with an introduction, background, hypothesis, objectives, and specific aims
3. If the LOI is selected, submit a full grant

The ENTELLIGENCE Young Investigator Program is supported through an educational grant from Actelion Pharmaceuticals US, Inc.
CLIMATE
Continued from page 1

for Research in Environmental Sciences (CIREES) at the University of Colorado in Boulder, who could not make it to Dallas due to bad weather. Session co-chair John R. Balms, MD, ATS, director, professor of environmental health science at the University of California in Berkeley, delivered Dr. Abdalati’s remarks.

Our military, farmers, the insurance industry, and the real estate industry are all keeping an eye on climate change and its direct impact on their industries, Dr. Abdalati said. He pointed to China, Europe, India, and North America as the countries that use the most energy and are the most responsible for contributing greenhouse gases to the air.

“If we continue on the path we’re on, we’ll face extreme temperature rise if we don’t get our act together,” he said.

These extreme temperatures will contribute not only to heat stroke, but also respiratory disease and cardiac diseases. Fewer frost-free days and longer flowering times will increase allergies. Increased smog and ozone will trigger asthma and diminished lung capacity, he said.

“The human race is entering new territory, and it is territory that will come with consequences,” Dr. Abdalati said.

Presenter Muge Akpinar-Elci, MD, MPH, ATSF, professor at Old Dominion University in Norfolk, Virginia, has been speaking on climate change for 10 years, but found preparing for this presentation a stark contrast to what it was back then.

“This year, it was overwhelming because when I started this 10 years ago, there was not that much information, but now, there is overwhelming evidence of climate change,” Dr. Akpinar-Elci said. “It’s a survivor issue right now, no longer just something happening ‘somewhere.’”

The effect of climate change on allergies and chronic respiratory diseases isn’t just affecting low-income countries, but all of us, she said.

Desertification, the transformation of fertile land into desert, is another resulting element of climate change’s rising temperatures and longer droughts, and it will make the pulmonary conditions already exacerbated by existing air pollution even worse, said Mehdi Mirsaeidi, MD, assistant professor at the University of Miami.

“By 2025, [desertification] could displace as many as 700 million people,” he said.

This prompted audience member Sharon Rounds, MD, professor of medicine at Brown Medical School in Providence, Rhode Island, to ask what pulmonologists could do to help patients mitigate the effects of rising temperatures and dealing with the dust from desertification.

“People at higher risk should reduce their exposure by staying indoors and wearing masks” on days when the elements are worse, said Dr. Mirsaeidi. “We need a network for alerting people about [high dust days], but we don’t have one.”

Some countries, due to location and economic situation, seem more susceptible to climate change, according to session co-chair Hasan Bayram, MD, PhD, ATSF, a professor at Koc University School of Medicine in Turkey. However, Kent Pinkerton, PhD, professor at the University of California, Davis, added that we all should be concerned.

“The developed world needs to be very concerned for the low- and mid-income countries, but we also need to be concerned [for ourselves],” Dr. Pinkerton said.

If temperatures continue to increase at two degrees Celsius, all coral reefs in the world will die. If we can cut that increase to 1.5 degrees Celsius, we’ll save 30 percent, he added.

“This is not meant to be a doom-and-gloom talk,” said Dr. Pinkerton, but climate change and its resulting effects are real and the sooner they are addressed, the bigger the positive impact, he said.
Learn about a treatment option for refractory MAC lung disease

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MAC lung disease treatment
James Beck: ATS President and Champion of Education

James Beck, MD, ATSF, will serve as president of the ATS for the 2019-2020 term. He is professor of medicine in the Division of Pulmonary Sciences and Critical Care at the University of Colorado in Denver and vice chair for Veterans Affairs in the University of Colorado’s Department of Medicine. He is also chief of medicine for the VA Eastern Colorado Health Care System.

Dr. Beck shares his views about the Society's new programs and its growing role in helping members professionally and in improving respiratory health worldwide.

Q Why did you want to be ATS president, and what do you hope to achieve during your time as president?

A: I've wanted to become the ATS president for many years so that I could serve the membership of this outstanding society. I've been involved with ATS since I presented my first poster as a medical resident in 1987, and I've never missed an International Conference since then. It's an honor to work with dedicated members on the Executive Committee, the Board of Directors, and our committees. During the coming year, we will focus on continuing our strategic planning, strengthening our relationships with others, developing our international activities, and assuring our sustainability.

I want to add that I wouldn't have pursued this opportunity if the ATS didn't have such a dedicated, professional, and enthusiastic staff. They are really amazing.

Q You have championed the creation of more opportunities for clinician-educators within ATS. Why is it important to help this group, and why is the ATS the right organization to help?

A: Academic medicine is changing rapidly, and clinician-educators are one of the most rapidly growing groups in departments of medicine. Accordingly, there is an increasing need to provide skills-based instruction focused on how to be an outstanding educator, as well as on the scholarship of education. ATS is the right organization to lead this movement for pulmonary, critical care, and sleep. Our establishment of the Section on Medical Education gained immediate and enthusiastic acceptance, and it's growing rapidly. We've also demonstrated our commitment to medical education by increasing programming at the International Conference.

Q Are the Society's efforts to launch a new journal later this year related to this effort?

A: Yes. The establishment of our new, open access journal, ATS Scholar, will provide a home for medical education research that will serve our members. We should all be proud of the existing three ATS journals, which are thriving and are of central importance to the ATS mission. It became apparent, however, that there are some constituencies in ATS whose activities did not fit into the existing journal structure or focus, such as medical education.

I'm incredibly proud that we are launching ATS Scholar to address these unmet needs. This is just one of many examples of ATS responsiveness to our members. We should all be proud of the existing three ATS journals, which are thriving and are of central importance to the ATS mission. It became apparent, however, that there are some constituencies in ATS whose activities did not fit into the existing journal structure or focus, such as medical education.

Q Are you involved with ATS membership?

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Q As an ATS leader, you have also encouraged younger members to get involved and become leaders. What is ATS doing in this area, and what more might be done?

A: The ATS is doing a remarkable job of bringing younger members into the Society and in making them feel welcome. I would point to our Resident Boot Camp, in which I have participated, and our Fellows Track Symposium as just two activities that demonstrate how welcoming we are to new members. For 2019, we’ve expanded these efforts to include a Fellows to Faculty Boot Camp. All of our assemblies have activities for junior members, as do many of our committees. For example, I’ve participated in the assembly mentorship program for years. One of our challenges is to get the word out to our junior members and make sure they are aware of the many activities we offer.

Q The ATS is unique among professional medical societies in integrating a patient perspective into virtually all of its activities through its Public Advisory Roundtable. How do the Society’s professional members benefit from having patients “at the table,” and can this relationship be enhanced?

A: I consider the Public Advisory Roundtable one of the key constituencies that contributes to current ATS success. The patient groups are incredibly important in helping us focus on the fact that we’re here to serve our patients as well as our membership. I’ve yet to meet an International Conference attendee who was not moved by a patient presentation during a session. PAR members are actively involved in all ATS planning, including having a seat on the Board of Directors. In fact, a considerable portion of our March board meeting focused on PAR and plans for the future.

Q Nearly half of the attendees at ATS 2019 come from outside the U.S., and a third of the Society’s members are international. How can the ATS leverage its global reach to improve respiratory health around the world?

A: The ATS is a global society, and we value our international members, as well as our strong relationships with other international respiratory societies. ATS plans to evaluate our international activities during the coming year, including convening a task force to make recommendations. Of course, we will solicit input from our International Health Committee and other ATS groups.

There is a great need for international advocacy work, and we are already cooperating well with other groups to achieve these goals. Additionally, ATS continues to lead in training individuals in research in developing countries through our successful MECOR [Methods in Epidemiology, Clinical and Operations Research] Program. I’m looking forward to strengthening these international relationships during the coming year.

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**MYATS**

“ATS has allowed me to be part of a community of educators who have inspired me to be a better teacher, researcher, doctor, and leader.”

Margaret “Molly” Hayes, MD  
Assistant Professor of Medicine  
Harvard Medical School and  
Beth Israel Deaconess Medical Center
Doctors William J. Calhoun and Reynold A. Panettieri Jr will host a live game-show—The Severe Asthma Challenge—where dinner attendees will have the opportunity to compete against their peers. The highest-scoring contestants from the first round will move on to compete on the main stage in the final round. Questions will focus on the following topics: asthma phenotypes and endotypes, the role of biomarkers in asthma, and the role of immunoglobulin E (IgE) in allergic asthma.

**FEATURED SPEAKERS**

**WILLIAM J. CALHOUN, MD**  
Professor of Medicine  
Vice Chair for Research,  
Department of Internal Medicine  
University of Texas Medical Branch  
Galveston, Texas

**REYNOLD A. PANETTIERI JR, MD**  
Professor of Medicine  
Vice Chancellor for Translational Medicine and Science  
Director, Rutgers Institute for Translational Medicine and Science  
New Brunswick, New Jersey

**PROGRAM INFORMATION**

**TIME:** 6:30 - 8:30 p.m.  
**DATE:** Tuesday, May 21, 2019  
**VENUE:** Hyatt Regency Dallas  
300 Reunion Boulevard  
Dallas, TX 75207  
Ballroom G-H

Minnesota, New Jersey, Vermont, and Federal Entities (e.g., the Department of Defense and the Department of Veterans Affairs) have restrictions on receiving in-kind benefits (e.g., meals, valet parking) at company-sponsored events. You are accountable for understanding such restrictions and complying with them. If you are licensed in or affiliated with any of these states or federal agencies, Genentech policies may restrict you from consuming any portion of the Genentech-sponsored meal at this program or from receiving any other in-kind benefit from Genentech (e.g., valet parking) in connection with the program.

For all program attendees who receive Genentech’s in-kind benefits at this program, Genentech will report the attendee’s name and the value received as required by federal and state disclosure laws (for more information on the federal law please visit sunshine.gene.com).

The meal cost may vary by event location and be up to $150 per person (exceptions may apply).

An Industry-Organized Symposium at the ATS 2019 International Conference. A non-CME educational program sponsored by Genentech. Due to regulatory restrictions, this program is only available to attendees from the United States.
At Northwestern Memorial Hospital, the #1 hospital in Illinois, our nationally ranked pulmonary program is leading the way in innovative lung care. Our advanced lung disease programs are led by multidisciplinary teams experienced in treating complex cases. So you can rest assured, even after most medical therapies have failed, we are your optimal partner in improving patient care. Alongside our entire Northwestern Medicine family, we’re committed to our relentless pursuit of better medicine.

For more information or to refer a patient, visit nm.org/nmhats
**Difficult-to-Treat Asthma: Getting it Right**

People truly have strong feelings about the proper diagnosis and management of difficult-to-treat and severe asthma in children, according to Heather Hoch, MD, assistant professor of pediatrics-pulmonary medicine at the University of Colorado in Aurora. The topic not only incites emotions, but also generates a number of opinions, especially because there are multiple components that influence diagnosis and treatment.

“There are so many different components that we could have discussed; however, we chose to focus on obesity as a comorbidity, adherence, biologic therapy, and bronchoscopy as areas that affect many of our patients,” said Dr. Hoch, co-chair of this morning’s session. The session will also provide a unique perspective on the topic through the lens of a patient representative on the panel.

This session will also examine the topical recent Global Initiative for Asthma (GINA) severe asthma guidelines, which were released in November. “The discussion will focus on the flow diagram (from the GINA guidelines) in which difficult-to-treat asthma is assessed—first, evaluating comorbidities and assessing treatment adherence, and, if the patient is still symptomatic after optimizing these, moving on to biologic therapy, and bronchoscopy for further evaluation,” Dr. Hoch said.

Dr. Hoch will explore the role medication adherence plays in difficult-to-treat asthma in children. This discussion will evaluate the current literature regarding the burden of poor medication adherence in children with asthma, describe current methods for clinicians to evaluate adherence, and discuss strategies for improving medication adherence.

Deepa Rastogi, MBBS, MS, director of the Pediatric Asthma Center and assistant professor of pediatrics at the Children’s Hospital at Montefiore in Bronx, New York, will speak to immune dysfunction in children with obese asthma. She also will explore the links between non-atopic systemic inflammation, metabolic abnormalities, and lung function deficits found in pediatric obesity-related asthma, emphasizing the mechanisms by which metabolic abnormalities contribute to systemic non-atopic inflammation, focusing on the epigenomic and transcriptomic alterations in obese asthmatic T cells and their association with lung function deficits.

Stephanie Lovinsky-Desir, MD, attending physician in the pediatric pulmonary division and assistant professor of pediatrics at Columbia University, will cover the biologic therapies for childhood asthma that are currently available for use in the pediatric population with a summary of indications, efficacy in clinical trials versus real-world settings, and what is known about cost effectiveness.

Alfin Vicencio, MD, professor of pediatrics at Mount Sinai Medical Center, will review the initial use of bronchoscopy in adult and pediatric patients with asthma, provide examples of common anatomic problems encountered, and discuss prior research efforts employing bronchosclerotic lavage and mucosal biopsy, introduce non-culture-based methods that may enhance asthma care, and offer concrete and recent examples of how such methods have informed management.

“We want to help people get better at targeting ways they can affect patient care—treating and recognizing comorbidities, and the difficult issue of medication adherence,” Dr. Hoch said. “We’ll offer concrete ways they can evaluate patients with asthma prior to stepping up to other therapies.”

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**Guru Bars Cultivate Collaboration**

Guru Bars are short, lightning-learning sessions that allow you to collaborate with leaders on an array of subjects. Each session features a 10-minute outline of a problem statement, mitigating factors, and the host’s perspective/solution. The sessions end with a challenge or question posed to participants, who discuss it for the remaining 10 minutes.

Each Guru Bar can accommodate 25 seated participants, with standing room around the perimeter, which allows for a dynamic and interactive discussion. Guru Bars are organized by categories of interest.

- **Guru Bars 1 and 2**: Education/Awareness/Prevention or Diagnosis
- **Guru Bars 3 and 4**: Treatment of Adherence/Compliance

Guru Bars will run every 30 minutes from 11 a.m. to 2 p.m. Tuesday in the Exhibit Hall (Level 2, Halls C-F).

#### Education/Awareness/Prevention or Diagnosis

**GURU BAR 1**

11:30-11:50 a.m.

**Insights in ILD.com: A Comprehensive Educational Resource for Health Care Professionals**

This Guru Bar will feature a presentation delivered by an expert pulmonologist on the various diseases associated with interstitial lung disease (ILD). The presentation will highlight the value of recognizing commonalities and differences of the fibrotic ILD patterns that are seen across the diseases, underscoring the importance of clinical consideration of the ILD component shared among many diseases. This program highlights the recently launched InsightsinILD.com website, an in-depth resource for learning about ILDs.

**Speaker:** Marilyn Glassberg, MD, professor of medicine, surgery; director, Rare and Interstitial Lung Disease Program, University of Miami Miller School of Medicine

**Company:** Boehringer Ingelheim Pharmaceuticals, Inc.

**Treatment or Adherence/Compliance**

**GURU BAR 2**

12:30-12:50 p.m.

**Innovative Trial Design: How to Bring the Real World of IPF Management Into Phase 3 Programs**

Galapagos is committed to being a valued scientific partner in the race to combat idiopathic pulmonary fibrosis (IPF). The current poor clinical prognosis for patients and a median survival at diagnosis of two to five years underscores the need for novel treatments and approaches to address the high unmet need in IPF. Please join us during this session as a member of our clinical team will present the ISABELA phase 3 program and discuss with the audience the value and challenges of novel trials designed to assess investigational drugs in a real-world management setting.

**Speaker:** Niyati Prasad, MD, senior clinical director, Galapagos

**Company:** Galapagos NV

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**Creative Captions Earn Prizes**

It’s not too late to get in on this year’s Instagram contest! Here are the rules:

1. **Follow @atscommunity** on Instagram.
2. Comment on photos of Al and Viola with your best captions.
3. The ATS will choose up to three captions each day to win a prize! Winners will be notified on Instagram.

Contestants must be attending ATS 2019. Pick up your prizes at the ATS Center (Exhibit Hall, Booth 2726), May 19-22.

**Bonus:** Run into Al and Viola at the conference? Take a selfie with them and post it to your Instagram! Look for your shot to be regrammed to the ATS IG page.

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**MYATS**

“Being a member of ATS has provided the knowledge necessary to take care of patients, and the skills and opportunities for leadership necessary for success in academic medicine.”

Dona Upson, MD, MA
Professor of Internal Medicine
Division of Pulmonary, Critical Care & Sleep
University of New Mexico
New Mexico Veterans Affairs Health Care System

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**Earn Prizes**

#### Captions

Look for your shot to be regrammed to the ATS IG page.

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**Guru Bars are organized by categories of interest.**
**Boost Learning With Non-CME Symposia**

Non-CME Symposia are a great way to supplement learning at the ATS 2019 International Conference. The ATS encourages all full-conference participants to attend these programs.

6:30-9:30 p.m.  
**Are We There Yet? Tips to Better IPF Management**  
Hyatt Regency Dallas, Marsalis Exhibit Hall A  
Our faculty will engage learners in interactive “What would YOU do?” case-based questions and demonstrate the positive impact of shared decision-making. This symposium will include a short patient testimonial as to the impact and burden that IPF has had on them and how shared decision-making made a positive difference in their care plan, treatment adherence, and quality of life.  
Speakers: Marilyn K. Glassberg, MD, professor of medicine and surgery at the Miller School of Medicine at the University of Miami, Florida; Lisa H. Lancaster, MD, program medical director of the interstitial lung disease program at the Vanderbilt University Medical Center in Nashville, Tennessee; Fernando J. Martinez, MD, MS, chief of the division of pulmonary and critical care medicine at New York Presbyterian Hospital/Weill Cornell Medical Center in New York  
Company: The France Foundation, supported by educational grants from Boehringer Ingelheim Pharmaceuticals, Inc. and Genentech, A Member of the Roche Group  
Register: pilotforpulmonary.org/ipf19

6:30-9:30 p.m.  
**Early Diagnosis and Augmentation for Alpha-1 Antitrypsin Deficiency Lung Disease**  
Hyatt Regency Dallas, Landmark Ballroom A  
Learn what you’re missing about Alpha-1 antitrypsin deficiency (AATD) lung disease. Interact with world-renowned experts including Drs. Sandhaus, Stocks, Campos, and a live AATD patient during this dynamic evidence-based symposium. We’ll discuss several AATD patient types, such as high-risk genotypes and low FEV1 as well as diagnostic considerations and therapeutic interventions, including augmentation therapy. In addition, you can submit your challenging AATD clinical cases and get expert opinions for management.  
Speakers: Robert A. Sandhaus, MD, PhD, FCCP, professor of medicine, division of pulmonary, critical care and sleep medicine director, Alpha-1 program at the National Jewish Medical and Research Center; Michael A. Campos, MD, associate professor of medicine, division of pulmonology, allergy, critical care at the University of Miami School of Medicine; James M. Stocks, MD, professor of medicine at the University of Texas Health Science Center at Tyler  
Company: RJM Medical Education, supported by educational grants from Shire—part of Takeda, Genfit, and CSL Behring

6:30-9:30 p.m.  
**Paving the Way in Fibrotic Lung Disease: Expanding Applications for Existing Therapies**  
Sheraton Dallas Hotel, Lone Star Ballroom A2-A4  
Expert faculty will discuss progressive fibrosing interstitial lung disease, providing guidance on its timely and accurate identification; they will also evaluate the expanding applications for current idiopathic pulmonary fibrosis therapies in other fibrotic lung diseases. Case presentations will provide scientific pearls for the integration of diagnostic and therapeutic algorithms into clinical practice.  
Speakers: Amy L. Olson, MD, MSPH, associate professor in the department of medicine and medical director of the pulmonary physiology unit at National Jewish Health; Kevin R. Flaherty, MD, MS, professor of medicine in the division of pulmonary/critical care medicine and medical director at the Michigan Medicine IILD Clinic, University of Michigan; Steven D. Nathan, MD, medical director of the advanced lung disease and transplant program and professor of medicine at Inova Fairfax Hospital and Virginia Commonwealth University, Inova Fairfax Campus  
Company: Vindico Medical Education, supported by an educational grant from Boehringer Ingelheim Pharmaceuticals, Inc.

6:30-9:30 p.m.  
**The Changing Landscape of Nontuberculous Mycobacterial Lung Disease (NTM-LD): A 3D View of Pathogenesis, Diagnosis, and Management**  
Hyatt Regency Dallas, Landmark Ballroom C  
This engaging 3D satellite symposium offers a unique learning opportunity investigating NTM-LD. Worldwide prevalence has been increasing, with pervasive impacts exhibited among chronic and structural lung disease, aging, and immunocompromised populations. Through evidence-based didactics, case-based learning, and 3D animation, complexities of diagnosis and management will be explored for m. avium complex (MAC) and m. abscessus with the aim to: review microbiology, pathogenesis, and environmental aspects of NTM; summarize recent data on NTM epidemiology and risk factors; describe treatment goal personalization methodologies; assess drug-related adverse event prevention strategies; evaluate established and emerging therapy clinical data.  
Speakers: Charles L. Daley, MD, chief of the division of mycobacterial and respiratory infections, professor of medicine at the National Jewish Health; Kevin Winthrop, MD, MPH, professor of public health, infectious disease, and ophthalmology at Oregon Health & Science University  
Company: Inamed Incorporated

6:30-9:30 p.m.  
**The Current State of Idiopathic Pulmonary Fibrosis**  
Fairmont Dallas, Regency Ballroom  
This symposium will enlist two expert pulmonologists presenting information on idiopathic pulmonary fibrosis (IPF). Current knowledge regarding IPF, including the updated 2018 ATS/ERS/ERS/ALAT diagnostic guidelines, as well as recommendations for use of multidisciplinary discussions in patient diagnosis, will be reviewed.  
Speakers: Justin Oldham, MD, MS, director of the interstitial lung disease program, assistant professor at the University of California, Davis; Robert Susman, MD, attending in the department of medicine at Morristown Medical Center, Overlook Medical Center  
Company: Boehringer Ingelheim Pharmaceuticals, Inc.

6:30-9:30 p.m.  
**U.S. Presidents With Severe Asthma: Endotypes and Precision Medicine**  
Fairmont Dallas, International Ballroom  
This activity will delve into the lives of U.S. presidents with asthma, to draw a contrast between treatment approaches of the past and current and emerging therapies that target specific disease mechanisms. We’ll summarize mechanisms of action as well as key efficacy and safety data for cytokine antagonists being used or investigated for severe asthma treatment. The information learned will then be applied, using case scenarios, in selecting personalized treatments based on asthma phenotypes and endotypes.  
Speakers: Tara Carr, MD, associate professor of medicine, associate professor of otolaryngology, director of the Adult Allergy Program, director of the Allergy & Immunology Fellowship Program, The University of Arizona Health Sciences; Nicola Hanania, MD, associate professor of medicine—pulmonary, director of the Airways Clinical Research Center, director of the asthma and COPD clinic at Baylor College of Medicine, Linda Rogers, MD, associate professor of medicine at the Icahn School of Medicine at Mount Sinai  
Company: The France Foundation, supported by an educational grant from Sanofi Genzyme and Regeneron Pharmaceuticals  
Register: pilotforpulmonary.org/asthma19
In adult patients with pulmonary arterial hypertension (PAH) (WHO Group 1) to improve exercise capacity

**INDICATION**

Orenitram is a prostacyclin vasodilator indicated for treatment of pulmonary arterial hypertension (PAH) (WHO Group 1) to improve exercise capacity.

The study that established effectiveness included predominately patients with WHO functional class II-III symptoms and etiologies of idiopathic or heritable PAH (75%) or PAH associated with connective tissue disease (19%). When used as the sole vasodilator, the effect of Orenitram on exercise is about 10% of the deficit, and the effect, if any, on a background of another vasodilator is probably less than this.

**CONTRAINDICATIONS**

- Orenitram is contraindicated in patients with severe hepatic impairment (Child Pugh Class C).

**WARNINGS AND PRECAUTIONS**

- Abrupt discontinuation or sudden large reductions in dosage of Orenitram may result in worsening of PAH symptoms.
- Orenitram inhibits platelet aggregation and increases the risk of bleeding.
- The Orenitram tablet shell does not dissolve. In patients with diverticulosis, Orenitram tablets can lodge in a diverticulum.

**DRUG INTERACTIONS / SPECIFIC POPULATIONS**

- Concomitant administration of Orenitram with diuretics, antihypertensive agents, or other vasodilators increases the risk of symptomatic hypotension.
- Orenitram inhibits platelet aggregation; there is an increased risk of bleeding, particularly among patients receiving antiocoagulants.

**ADVERSE REACTIONS**

- Co-administration of Orenitram and the CYP2C8 enzyme inhibitor gemfibrozil increases exposure to treprostinil; therefore, Orenitram dosage reduction may be necessary in these patients.
- Pregnancy Category C. Animal reproductive studies with Orenitram have shown an adverse effect on the fetus. There are no adequate and well-controlled studies in humans.
- It is not known whether treprostinil is excreted in human milk or absorbed systemically after ingestion. Because many drugs are excreted in human milk, choose Orenitram or breastfeeding.
- Safety and effectiveness in patients under 18 years of age have not been established.
- There is a marked increase in the systemic exposure to treprostinil in hepatically impaired patients.

**REFERENCES**


Please see Brief Summary of Prescribing Information on the following page.

**Visit Booth #3511 to learn more**

or www.ImpactEarlier.com for additional information
BRIEF SUMMARY
The following is a brief summary of the full prescribing information for Orenitram® (treprostinil) Extended-Release Tablets. Please review the full prescribing information before prescribing Orenitram.

INDICATIONS AND USAGE
Orenitram is indicated for the treatment of pulmonary arterial hypertension (PAH) (WHO Group 1) to improve exercise capacity. The study that established effectiveness included predominately patients with WHO functional class II-III symptoms and etiologies of pulmonary arterial hypertension (PAH) (WHO Group 1) to improve exercise capacity. The study that established effectiveness included predominately patients with WHO functional class II-III symptoms and etiologies of PAH (75%) or PAH associated with connective tissue disease (19%). When used as the sole vasodilator, the effect of Orenitram on exercise is about 10% of the deficit, and the effect, if any, on a background of another vasodilator is probably less than this.

CONTRAINDICATIONS
Severe hepatic impairment (Child Pugh Class C).

WARNINGS AND PRECAUTIONS
Worsening PAH Symptoms upon Abrupt Withdrawal—Abrupt discontinuation or sudden large reductions in dosage of Orenitram may result in worsening of PAH symptoms.
Risk of Bleeding—Orenitram inhibits platelet aggregation and increases the risk of bleeding.
Use in Patients with Blind-end Pouches—The tablet shell does not dissolve. In patients with diverticulosis, Orenitram tablets can lodge in a diverticulum.

ADVERSE REACTIONS
Clinical Trials Experience—Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in clinical practice. In a 12-week placebo-controlled monotherapy study (Study 1; WHO Group 1; functional class II-III), the most commonly reported adverse reactions that occurred in patients receiving Orenitram included: headache, diarrhea, nausea and flushing. Table 1 lists the adverse reactions that occurred at a rate on Orenitram at least 5% higher than on placebo. Orenitram patients in Table 1 for Study 1 (N = 151) had access to 0.25 mg tablets at randomization. Approximately 91% of such patients experienced an adverse reaction, but only 4% discontinued therapy for an adverse reaction (compared to 3% receiving placebo). The overall discontinuation rate for any reason was 17% for active and 14% for placebo.

Orenitram was studied in a long-term, open-label extension study in which 824 patients were dosed for a mean duration of approximately 2 years. About 70% of patients continued treatment with Orenitram for at least 1 year. The mean dose was 4.2 mg BID at one year. The adverse reactions were similar to those observed in the placebo-controlled trials.

The safety of Orenitram was also evaluated in an open-label study transitioning patients from Remodulin. The safety profile during this study was similar to that observed in the three pivotal studies.

Post-Marketing Experience—The following adverse reactions have been identified during post approval use of Orenitram: dizziness, dyspepsia, vomiting, myalgia, and arthralgia. Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

DRUG INTERACTIONS
Antihypertensive Agents or Other Vasodilators—Concomitant administration of Orenitram with diuretics, antihypertensive agents or other vasodilators increases the risk of symptomatic hypotension.
Anticoagulants—Treprostinil inhibits platelet aggregation; there is increased risk of bleeding, particularly among patients receiving anticoagulants.
Effect of CYPC28 Inhibitors—Co-administration of Orenitram and the CYPC28 enzyme inhibitor gemfibrozil in healthy adult volunteers increases exposure to treprostinil. Reduce the starting dose of Orenitram to 0.125 mg BID and use 0.125 mg BID increments every 3 to 4 days.
Effect of Other Drugs on Orenitram—Based on human pharmacokinetic studies, no dose adjustment of Orenitram is recommended when co-administered with either fluconazole, rifampin, sildenafil, bosentan or esomeprazole.

Warfarin—A drug interaction study was carried out with Remodulin co-administered with warfarin (25 mg/day) in healthy volunteers. There was no clinically significant effect of either medication on the pharmacokinetics of treprostinil. Additionally, treprostinil did not affect the pharmacokinetics or pharmacodynamics of warfarin. The pharmacokinetics of R- and S-warfarin and the international normalized ratio (INR) in healthy subjects given a single 25 mg dose of warfarin were unaffected by continuous subcutaneous infusion of treprostinil at an infusion rate of 10 ng/kg/min.

USE IN SPECIFIC POPULATIONS
Pregnancy—Pregnancy Category C. Animal reproductive studies with treprostinil diclomine have shown an adverse effect on the fetus. There are no adequate and well-controlled studies in humans.

Labor and Delivery—The effect of Orenitram on labor and delivery in humans is unknown. No treprostinil treatment-related effects on labor and delivery were seen in animal studies.

Nursing Mothers—it is not known whether treprostinil is excreted in human milk or absorbed systemically after ingestion. Because many drugs are excreted in human milk, choose Orenitram or breastfeeding.

Pediatric Use—Safety and effectiveness in pediatric patients have not been established.

Geriatric Use—Clinical studies of Orenitram did not include sufficient numbers of patients aged 65 years and over to determine whether they respond differently from younger patients. In general, dose selection for an elderly patient should be cautious, reflecting the greater frequency of decreased hepatic or cardiac function, and of concomitant disease or other drug therapy.

Patients with Hepatic Impairment—Plasma clearance of treprostinil is reduced in patients with hepatic insufficiency. Patients with hepatic insufficiency may therefore be at increased risk of dose-dependent adverse reactions because of an increase in systemic exposure. Titrate slowly in patients with hepatic insufficiency, because such patients will likely be exposed to greater systemic concentrations relative to patients with normal hepatic function. In patients with mild hepatic impairment (Child Pugh Class A) start at 0.125 mg BID with 0.125 mg BID dose increments every 3 to 4 days. Avoid use of Orenitram in patients with moderate hepatic impairment (Child Pugh Class B). Orenitram is contraindicated in patients with severe hepatic impairment (Child Pugh Class C).

Patients with Renal Impairment—No dose adjustments are required in patients with renal impairment. Orenitram is not removed by dialysis.

OVERDOSAGE
Signs and symptoms of overdose with Orenitram during clinical trials reflect its dose-limiting pharmacologic effects and include severe headache, nausea, vomiting, diarrhea, and hypotension. Treat supportively.

Table 1. Adverse Reactions with Rates at Least 5% Higher on Orenitram Monotherapy than on Placebo

<table>
<thead>
<tr>
<th>Reaction</th>
<th>Orenitram (N=151)</th>
<th>Placebo (N=77)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache</td>
<td>63%</td>
<td>19%</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>30%</td>
<td>16%</td>
</tr>
<tr>
<td>Nausea</td>
<td>20%</td>
<td>18%</td>
</tr>
<tr>
<td>Flushing</td>
<td>15%</td>
<td>6%</td>
</tr>
<tr>
<td>Pain in jaw</td>
<td>11%</td>
<td>4%</td>
</tr>
<tr>
<td>Pain in extremity</td>
<td>14%</td>
<td>8%</td>
</tr>
<tr>
<td>Hypokalemia</td>
<td>9%</td>
<td>3%</td>
</tr>
<tr>
<td>Abdominal discomfort</td>
<td>6%</td>
<td>0%</td>
</tr>
</tbody>
</table>
ATS Advocates for Better Health Worldwide

The ATS is the only medical society in respiratory medicine that maintains a Washington, D.C., government relations office. Through this office, the Society advocates on behalf of patients, members, and the profession.

What follows is an excerpt on the Society’s advocacy efforts from the ATS 2018 Annual Report, which is available at the ATS Center in Booth 2726 and online.

In 2018, in the U.S. and around the globe, ATS members engaged in initiatives to influence policymakers and advance the science of lung health, protect the environment, and improve the health of patients with respiratory disease, critical illness, and sleep-disordered breathing.

In the past two years, federal agencies have continued to propose rules to roll back, weaken, or delay implementation of important public health policies, particularly those involving clean air and tobacco health policies, particularly those involving clean air and tobacco health policies, particularly those involving clean air and tobacco health policies, particularly those involving clean air and tobacco health policies.

In addition, the ATS Washington, D.C., office helped secure public policy victories on a number of critical issues, including:

- Preventing legislative restrictions on the authority of the Food and Drug Administration to regulate tobacco products and the EPA’s authority to regulate air pollution
- Securing promises from the FDA to:
  - Ban candy-flavored cigars
  - Ban menthol-flavored cigarettes
  - Restrict retail sales of e-cigarettes
  - Regulate e-cigarette flavoring
  - Funding increases for the NIH, the Veterans Affairs Research Program, and global tuberculosis control programs

The ATS Would Like to Acknowledge our 2019 Corporate Members

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The complement system consists of more than 60 proteins, and complement has been shown to play a role in lung diseases such as asthma, idiopathic pulmonary fibrosis, and chronic rejection after lung transplantation. However, modulating specific components in the complement cascade has resulted in mixed success. Moreover, a limited availability of tools for discriminating the complement cascade has contributed to this mixed success. However, modulating specific components in the fibrosis, and chronic rejection after lung transplantation.

In recent years, the increasing number of clinical conditions associated with complement-pathway dysfunction has spurred a regained interest in therapeutic options to modulate the complement system. "Molecular insight, technological advances, and the first decade of clinical experience with the complement-specific drug eculizumab have increased confidence in therapeutic complement inhibition," said Dr. Kulkarni. More than 20 candidate drugs that target various stages of the complement cascade are currently being evaluated in clinical trials, and additional agents are in preclinical development.

"An area in complement biology that has been overlooked in lung diseases is how the downregulation of complement inhibitory proteins such as CD46 and CD55 are contributing to fibrosis, which we will highlight in this session," said Ragini Vittal, PhD, assistant research professor at the University of Michigan in Ann Arbor, who is also co-chairing the session. "Furthermore, the conventional thought is that the complement system is solely an integral arm of the innate immunity. However, a growing body of evidence demonstrates that complement activation extends beyond its known canonical signaling by triggering intracellular and non-canonical signaling that has an impact on the local non-immune cells."

This session's speakers will also outline therapeutic concepts, targets, and candidate drugs; the findings of recent clinical trials; and the challenges in developing complement therapeutics and how they could be potentially applied to different lung diseases such as pneumonia, transplant rejection, and lung cancer, in addition to what is known about asthma and interstitial lung disease.

"Although complement is indeed an evolutionarily ancient immune system, it remains fascinating and still provides the novelty of investigating the signaling of key components within each microenvironment and discovering potential untapped therapeutic targets that are either common or unique to each lung disease," said Dr. Vittal.

Dr. Kulkarni said that researchers are increasingly seeing various complement proteins in the large-scale transcriptomic and proteomic analyses for different lung diseases and model systems. Thus, the session will also provide an opportunity for translational researchers to gain a better understanding of how the multiple components of the complement cascade can be better studied and targeted alone or in combination to reduce the burden of multiple lung diseases.
The learning doesn't stop at lunch. Grab a complimentary lunch and continue learning during Industry Theaters, Mini Theaters, and new Medium Theaters on Tuesday in the Exhibit Hall. You'll hear from supporting companies about the latest clinical updates related to pulmonary, critical care, or sleep medicine. Boxed lunches are provided by the ATS (while supplies last).

**Theater Locations**

- **Theater 1**: Booth 116
- **Industry Theater 2**: Booth 1249
- **Medium Theater**: Booth 4549
- **Mini Theater**: Booth 101

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**Theater 1**
11:30 a.m.-12:15 p.m.

**Driving Improved Patient Outcomes in COPD**
This GSK-sponsored Industry Theater will help HCPs achieve COPD treatment goals of reducing symptoms and future risk of exacerbations by answering two key questions. Professor Klaus Vogelmeier will examine the current evidence supporting the use of dual bronchodilators in patients with high symptoms burden, including data showing the benefit of early optimization of maintenance therapy with LAMA/LABA, to answer the question, "Why wouldn't we optimize bronchodilation in symptomatic COPD patients?" Professor Alberto Papi will then consider the evidence for the use of triple therapy in patients with at least one exacerbation in the past 12 months and discuss "Why wouldn't we intervene earlier in patients at risk of exacerbation?"

**Speakers**:
- Paul Jones, MD, PhD, professor, GSK, UK
- Claus F. Vogelmeier, MD, professor, University Medical Center Gießen and Marburg, Philippus-University Marburg, Germany
- Alberto Papi, MD, professor, University of Ferrara, Italy

Company: GSK

1:15-2 p.m.

**Evolving Understanding of Inflammatory Mediators in Asthma**

Company: Novartis Pharmaceuticals

**Theater 2**
11:30 a.m.-12:15 p.m.

**Type 2 Inflammation and Developments in the Management of Asthma**

This presentation will provide an overview of the contributory role of Type 2 inflammation in asthma and treatment strategy development. The speaker will describe the data supporting an add-on maintenance treatment option for certain patients with uncontrolled moderate to severe asthma.

**Speakers**:
- Reynold A. Panettieri Jr., MD, professor of medicine, Robert Wood Johnson Medical School

Company: Sanofi Genzyme and Regeneron

1:15-2 p.m.

**Biomarkers in Severe Asthma: What They Tell Us and What They Don’t**

This biomarkers symposium will provide an in-depth discussion around the data on IgE levels, exhaled nitric oxide, and circulating eosinophil counts in severe asthma. The role of these measurements as biomarkers for predicting exacerbations, evaluating disease control, and determining response to biologic therapies will be reviewed.

**Speakers**:
- Eugene Bleeker, MD, professor of medicine, co-chief, Division of Genetics, Genomics and Precision Medicine, University of Arizona Health Sciences
- Geoffrey Chapp, MD, professor of medicine, director, Yale Center for Asthma and Airways Disease

Company: GlaxoSmithKline

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**Medium Theater**

12:20-1:05 p.m.

**Understanding CRSwNP Pathophysiology, Type 2 Inflammation, and Co-morbid Asthma**

This presentation will review CRSwNP pathophysiology, role of Type 2 inflammation, burden of CRSwNP, and the clinical implications for physicians managing patients with co-morbid asthma.

Company: Sanofi Genzyme and Regeneron

**Mini Theater**

11:30 a.m.-12 p.m.

**Molecular Diagnostics for Pneumonia: An Initial Evaluation of the BioFire Pneumonia Panel**

For pneumonia patients, bacterial culture from lower respiratory tract specimens is the primary method of pathogen identification. Culture results take days, and frequently do not identify a causative agent of infection. Recently, molecular diagnostics for lower respiratory tract infections have been FDA cleared and are commercially available. These technologies offer increased sensitivity and reduced turnaround time, but questions remain about their practical implementation. In this Industry Mini Theater, Richard Wunderink, MD, will discuss the current state of molecular diagnostics for pneumonia and present results from an initial clinical evaluation of the BioFire Pneumonia Panel.

Company: BioFire Diagnostics

12:30-1 p.m.

**Intervening in Pulmonary Embolism With EKOS Therapy**

EKOS Therapy, an exciting option for treating PE. Join us to learn how EKOS therapy with a tpa dose as low as 8 mg and a treatment time as short as 2 hours can transform your interventional options for PE. This interactive symposia will feature clinical data, case presentations, and evidence of a shorter length of stay.

**Speaker**:
- Kenneth Omonoowa, MD, attending, Pulmonary/Critical Care Medicine, Lincoln Medical Center, Bronx, NY

Company: BTG Vascular

1:30-2 p.m.

**Insights in ILD Podcast Live: Commonalities Among the Interstitial Lung Diseases**

During this live podcast conversation, two expert pulmonologists will provide a broad overview of recognizing, diagnosing, and managing interstitial lung diseases (ILDs), highlighting the common signs and symptoms. Faculty will then discuss key tests performed to diagnose patients with an ILD and strategies used for symptom management.

**Speakers**:
- Erica Herzog, MD, PhD, associate professor of medicine (pulmonary), director, Translational Lung Research Program, co-director, Yale Fibrosis Program, assistant director, medical student research, Department of Medicine, director, Interstitial Lung Disease Center of Excellence, Yale Pulmonary & Critical Care Medicine
- Steven D. Nathan, MD, medical director, Advanced Lung Disease and Transplant Program, Inova Fairfax Hospital

Company: Boehringer Ingelheim Pharmaceuticals, Inc.
WHAT’S
THREATENING

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UNCOVER THE SUSPECT THAT IS CAUSING IRREVERSIBLE HARM IN A WIDE RANGE OF INTERSTITIAL LUNG DISEASES

BOOTH 4438

Not actual patients.
Session Unveils New Clinical Practice Guidelines

This year’s ATS Clinical Practice Guidelines will spotlight the latest evidence-based clinical recommendations on idiopathic pulmonary fibrosis, malignant pleural effusions, obesity in OSA, fungal infections, and pediatric supplemental oxygen.

Now in its fifth year, this annual scientific symposium comprises recently approved or published clinical guidelines formulated by a panel of experts. Session Co-Chair Raed A. Dweik, MD, ATSF, chair of the ATS Documents Development and Implementation Committee and chair of the Respiratory Institute at Cleveland Clinic, will lead panelists in a discussion about the guidelines’ foundation for improving care, the rationale for each, and review the evidence supporting each recommendation. “All guideline recommendations are intended to improve patient outcomes. This is because a recommendation indicates that the benefits to patients exceed the potential harms, burdens, and costs,” Dr. Dweik said. “ATS Guidelines use a rigorous, systematic, scientific approach to synthesize evidence. The evidence is then used to inform recommendations that are intended to address true clinical uncertainties and help patients and clinicians.”

The session’s guidelines will cover four basic areas, including which population to treat, treatment type, which population to test, and test type. Randomized trials, observational studies, and accuracy studies provide the details to these discussion points. Occasionally, there is no study, and recommendations are made based upon uncontrolled studies and/or non-systematic clinical observations. Judgments about interventions are based upon the body of evidence, not individual studies, according to Kevin C. Wilson, MD, ATSF, ATS document editor and featured speaker at the session. The ATS uses the Grading, Recommendations, Assessment, Development, and Evaluation (GRADE) approach to rate the quality of evidence as high, moderate, low, or very low. “The quality of evidence indicates the confidence that the committee has in the estimated effects. Panelists will discuss: • Diagnosing idiopathic pulmonary fibrosis: Guidelines recommend bronchosclerotic lavage and surgical lung biopsy for patients, whose high-resolution CT scan of the chest and multidisciplinary decision-making is consistent with probable usual interstitial pneumonitis, indeterminate for UIP, or suggestive of an alternative diagnosis. • Treating malignant pleural effusion: Guidelines recommend the use of ultrasound-guided interventions, using talc poudrage or talc slurry for chemical pleurodesis, using an intrapleural catheter instead of chemical pleurodesis in patients with non-expandable lung or failed chemical pleurodesis, and treating intrapleural catheter-associated infections with antibiotics while not removing the catheter. • Treating obesity in OSA: Guidelines recommend a comprehensive behavioral intervention consisting of diet, exercise, and behavioral therapy. • Pediatric home oxygen therapy: Guidelines recommend oxygen for hypoxemic children with cystic fibrosis, bronchopulmonary dysplasia, pulmonary hypertension without congenital heart disease, interstitial lung disease, and some patients with sickle cell disease or sleep-disordered breathing.

ADVANCING THE TREATMENT OF EOSINOPHILIC DISEASE

Join us for an engaging program exploring the role of eosinophils in disease management. We will examine key efficacy and safety data for a treatment that reduces eosinophils, including long-term data in patients with severe asthma. We will also discuss clinical approaches for identifying appropriate patient types that may benefit from a targeted treatment to reduce eosinophils. In addition, hear from a patient about their journey with eosinophilic disease and treatment.

Mario Castro, M.D., M.P.H.
Alan A. and Edith L. Wolf Professor of Pulmonary and Critical Care Medicine
Professor of Medicine, Pediatrics, and Radiology
Washington University School of Medicine

11:30 AM to 12:15 PM
Monday, May 20, 2019
Industry Theater #1
The Kay Bailey Hutchison Convention Center
Dallas, TX

Visit GSK booth #3715 to learn more

Please read: This program is limited to Healthcare Professionals (HCPs) only. Some state laws prohibit manufacturers from providing meals or limit transfers of value to HCPs. Please do not accept any meal that violates the laws of your licensing state(s) or the rules of your employer. GSK discloses transfers of value to HCPs as required by law.

An Industry Theater presentation at the ATS 2019 International Conference. This presentation is sponsored by GSK and is open to all ATS 2019 International Conference attendees.

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MPLJRNA190004  March 2019
Produced in USA.
Debates to Drive the Future of PAH Research

Research in pulmonary arterial hypertension has reached a turning point in several areas. Should research continue its quest to find novel PAH genes? Should it continue to employ animal models? These topics and more will be debated Tuesday morning to help clarify the alternatives and chart future research.

"We want to engage basic scientists and physician-scientists in pulmonary arterial hypertension to debate what they think about the pathogenesis of this disease and ways forward to find treatments that work in patients, not just in animal models," said Edda Spiekerkoetter, MD. "We want to encourage research in more fruitful directions. And by focusing on hot topics in PAH research, the debates will offer junior scientists an excellent overview of current schools of thought of PAH pathogenesis."

Dr. Spiekerkoetter will co-chair the debate. She is associate professor of pulmonary and critical care medicine at Stanford University Medical Center in California, co-director of the Hereditary Hemorrhagic Telangiectasias (HHT) Center, and director of HHT research at Stanford University. She will share the stage with Soni S. Pullamsetti, PhD, principal investigator at the Max Planck Institute for Heart and Lung Research in Bad Nauheim, Germany, and Wolfgang Kuebler, MD, professor at Charité-Universitätsmedizin in Berlin, Germany.

The debaters will tackle opposing views on four of key areas in pulmonary vascular disease. The first question focuses on the role of the right ventricle in PAH. Most PAH patients die of right heart disease, Dr. Spiekerkoetter said. It is not clear, though, whether the research should focus on the mechanisms of right ventricle failure and approaches to improve its performance or if focusing on the overall improvement of existing pulmonary vascular disease is more likely to be productive.

The second debate homes in on the utility of novel PAH disease genes. Continuing improvements in genetic research techniques are revealing more genes associated with PAH, but it is not at all clear how useful these novel genes might be. "Pulmonary hypertension is already a rare disease, so will finding genetic variants that are even more rare really help us?" Dr. Spiekerkoetter asked. "One point of view is that these new genes do not affect so many people. But as we have seen in other diseases, rare genetic variants might guide us to recognize new pathways that help us to create new treatments. There is no clear or simple answer to these questions."

The third debate examines the utility of animal models. The first rodent models of PAH were a breakthrough, but no new clinical treatments have been developed as a result. "It was a great thing 20 years ago to say we have reversed existing pulmonary hypertension in a mouse," Dr. Spiekerkoetter said. "Now we have many papers like this every year, but so far none of these approaches has been shown to be beneficial in patients. Do we continue on with animal models or do we focus more on human tissue models to find drugs that are effective in patients? Or, because we know the immune system is involved in pulmonary hypertension, do we use mice with a humanized immune system to study PH? This all comes down to finding ways we can do better."

The final debate evaluates the role of precision medicine. Tailoring treatment to the individual patient is the hottest frontier in medical research. Should PAH research follow the crowd?

"Precision medicine is difficult to test in a rare disease," Dr. Spiekerkoetter noted. "It is easy to create many subgroups in PAH, yet we might never be able to perform a clinical trial on subgroups of PAH that is powered to show significant changes. A different approach would be to say that despite different etiologies, the phenotype of pulmonary hypertension is pretty much the same, therefore, we should be looking for common pathways to treat. We want to encourage thinking and discussion of these issues."

Educational Grant Support: Actelion Pharmaceuticals US, Inc. and Bayer US.

Future Directions in PAH Research: A Pro/Con Debate (C11)
9:15-11:15 a.m., Tuesday
Rooms C155-C156 (Level 1), KBHCCD

Jenesis Innovative Research Awards™

Three individual grants up to $100,000 will be awarded to junior investigators dedicated to medical advancement for pulmonary hypertension through independent clinical, preclinical, and outcomes-based research. Submissions will be peer reviewed and selected by an independent steering committee. Awards are subject to separate terms and conditions.

Submission requirements:

- Application
- Brief abstract of proposal (<500 words)
- Full proposal (≤5 pages) with relevant supporting publications
- Applicant and mentor CV or biosketch
- Letter of recommendation from mentor
- Detailed budget with line itemization
- Form detailing other sources of funding (actual or potential) through other programs

Apply Now! Submissions accepted 2/15-6/30.
For more information: Visit the Jenesis Innovative Research Awards tab in the Investigator Research section of www.unithermedaffairs.com or e-mail UTjenesisawards@contacthmc.com.

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Breathe new life into the study of pulmonary hypertension

Join our commitment to find a cure and make a difference with the

Jenesis Innovative Research Awards™

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Apply Now! Submissions accepted 2/15-6/30.
For more information: Visit the Jenesis Innovative Research Awards tab in the Investigator Research section of www.unithermedaffairs.com or e-mail UTjenesisawards@contacthmc.com.

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Evidence-based medicine holds considerable weight, but it is not without controversy. Many controversies surround the diagnosis and management of common conditions encountered in clinical practice.

Three such controversies in pediatrics, pulmonology, and neonatology will drive the discussion during Wednesday’s session with Anastassios C. Koumbourlis, MD, MPH, ATSF, at the helm. Dr. Koumbourlis is chief of the division of pulmonary and sleep medicine and director of the Cystic Fibrosis Center at Children’s National Medical Center and a professor of Pediatrics at George Washington University School of Medicine & Health Sciences in Washington, D.C.

Dr. Koumbourlis will lead a panel discussion on the relationship between obesity and asthma, two conditions that have reached almost epidemic proportions, especially among minority children, the method of delivery of inhaled medications that are the main therapies for conditions such as asthma and chronic lung disease, and the use of diuretics, which have become part of the standard therapies given to treat acute and chronic lung disease in premature infants. Yet, the efficacy and potential side effects of diuretics recently have been questioned by large epidemiologic studies.

“Controversies in clinical practice vary. Sometimes, the controversy is due to the fact that a medical intervention or treatment may be scientifically sound, but not necessarily the ‘best’ from a practical standpoint. This is the case of the controversy surrounding the issue of inhalers versus nebulizers for the administration of medications in asthma,” Dr. Koumbourlis said. “Other times, the controversy is due to the fact that there is ‘evidence’ of a relationship between two conditions, but it does not amount to a proof, so it becomes an issue of interpretation. This is the case about the relationship between obesity and asthma. Finally, controversies arise from the fact that epidemiologic associations do not always correspond with actual clinical experience, which is the case with the use of diuretics in prematurely born infants.”

Currently, debates rage over the strength of the association between obesity and asthma, Dr. Koumbourlis said. For example, while obesity may predispose people to the development of asthma or exacerbate its severity, some studies suggest it does not cause asthma. This belief differs among health care professionals.

Similarly, the debate over the effectiveness of diuretics in treating acute lung disease in premature infants continues. In fact, said Dr. Koumbourlis, “the jury is still out” on whether the drugs “substantially” improve the respiratory status of premature newborns, and depends on the physicians’ interpretation of the literature.

Finally, what about questions surrounding the medical and financial benefits of different methods of administration of inhaled medications? It depends on who you ask and what exactly you ask, Dr. Koumbourlis said. In general, compared with the nebulizers, inhalers are more efficient in that they deliver a higher proportion of the medication to the lungs in particle size, which allows them to travel farther into the small airways; they are portable; and they deliver a higher proportion of the medication to the lungs in particle size, which allows them to travel farther into the small airways; they are portable; and much faster to administer. However, they also are more likely to be used incorrectly, in which case the patient does not get any medication.

“In medicine, there are very few, if any, absolute ‘rights’ or ‘wrongs.’ Therefore, physicians should develop and use critical thinking, both when they read the literature and when they consider adopting new methods or following new ‘guidelines.’

- Anastassios C. Koumbourlis
Don’t let pneumonia bugs evade detection.

Molecular diagnostics for pneumonia: An initial evaluation of the BioFire® FilmArray® Pneumonia Panel

Mini Theater | May 21, 2019 | 11:30 am–12 pm

Richard G. Wunderink, MD  
Professor of Medicine (Pulmonary and Critical Care),  
Feinberg School of Medicine, Northwestern University

A discussion of the current state of molecular diagnostics for pneumonia, including results from an initial clinical evaluation of the BioFire Pneumonia Panel.

An Industry Theater presentation at the ATS 2019 International Conference.  
This presentation is sponsored by BioFire Diagnostics, and is open to all ATS 2019 International Conference attendees.
2019 ATS Assembly Awards

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<td>Megan Sparer, PhD</td>
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<td>Scientific Accomplishment Award</td>
<td>Jeffrey L. Curtis, MD</td>
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<td>All International Early Career Award</td>
<td>Kimberly Wang, PhD</td>
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<td>Lifetime Achievement Award</td>
<td>Chris Goss, MD, MSc</td>
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<tr>
<td>Early Career Achievement Award</td>
<td>Valerie Press, MD, MPH; Maria Prasad Kart Keeler, MD, MS</td>
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<td>Education Early Career Educator Award</td>
<td>Margaret Hayes, MD</td>
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<td>Matthew M. Churpek, MD, MPH, PNO</td>
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<td>Mid Career Award</td>
<td>Carolyn S. Coffey, MD</td>
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<td>Early Career Achievement Award</td>
<td>Lila P. Harin, BS, MD, PhD</td>
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<th>Assembly on Environmental,Occupational, and Population Health</th>
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<tr>
<td>John Peters Award</td>
<td>Diane R. Gold, MD</td>
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<td>David Bates Award</td>
<td>Hindi Tadhoti, MD, PhD</td>
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<td>Val Vallyathan Award (Junior)</td>
<td>Christopher Hiser, MD</td>
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<tr>
<td>Val Vallyathan Award (Senior)</td>
<td>Kent E. Pinkerton, MD</td>
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<td>Margaret Becklake Award</td>
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<td>Rising Star Award</td>
<td>Jennifer R. Honda, PhD, Robert P. Dickson, MD</td>
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<tr>
<td>Junior Level Award-Early Career Achievement Award</td>
<td>Bahaar S. Stathak, MD</td>
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<td>Mid Career Award</td>
<td>Chad A. Hage, MD</td>
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<tr>
<td>Senior Level Award</td>
<td>Carlos M. Luna, MD, PhD</td>
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<tr>
<td>Lifetime Distinguished Achievement Award</td>
<td>Fred Gordin, MD</td>
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<tr>
<td>Marilyn Hansen Award</td>
<td>Tara Von-Viager, APHN, PhD (C), CNS, CCNS, PCRN</td>
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<td>Pediatric Founders Award</td>
<td>Thomas G. Keens, MD</td>
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<td>Pediatric Clinical Educator Award</td>
<td>Xeridi I. Courouci, MD</td>
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<td>Robert Mefferd Award</td>
<td>Gustavo Nino, MD</td>
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<td>Lifetime Contribution Award</td>
<td>Gregory Redding, MD</td>
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<td>Scientific Abstract Awards</td>
<td>Breanna Kinghorn, MD, MS</td>
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<td>Scientific Abstract Awards</td>
<td>Benjamin Kopp, MD, MPH</td>
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<td>Recognition Award-From the Americas</td>
<td>Christine M. Garvey, MSN, MPA, FNPI, MSN, MPH</td>
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<tr>
<td>Recognition Award-From Outside the Americas</td>
<td>Jennifer A. Alison, PhD, MSc, PT</td>
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<tr>
<td>Recognition Award-In Memoriam or Emeritus</td>
<td>Alvan L. Barach, MD</td>
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<td>Carol Basbaum Award</td>
<td>Jonathan Kingpali, MD</td>
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<td>Andy Tager Award for Excellence in Mentoring</td>
<td>Timothy S. Blackwell, MD</td>
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<td>Jo Rae Wright Award</td>
<td>Elizabeth Redding, MD</td>
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<tr>
<td>REACH-Recognition for Early Academic Achievement</td>
<td>Hinkisleab S. Kullurry, MD, MSQ</td>
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<td>Carol Marcus Joint Assembly Award</td>
<td>Hui-Leng Tan, MBBS</td>
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<th>Assembly on Sleep and Respiratory Neurobiology</th>
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<td>James B. Skutnud New Investigator Award</td>
<td>Andrew W. Vega, MD, PhD</td>
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<td>SRN Lifetime Achievement Award</td>
<td>Allan I. Pack, MBChB, PhD</td>
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<tr>
<td>Lifetime Achievement Award</td>
<td>M. Patricia Rivera, MD</td>
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<td>Ann Woolcock Memorial Award</td>
<td>Matthew Drake, MD</td>
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<td>Joseph R. Rodarte Award</td>
<td>Jason Bates, PhD, DSc</td>
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<td>Stuart J. Mint Award</td>
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<th>Assembly on Respiratory Structure and Function</th>
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<tr>
<td>Polart Permutt Trailblazer Award in Pulmonary Physiology and Medicine</td>
<td>Jeffry Freudberg, PhD</td>
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<tr>
<td>Lifetime Achievement Award in Honor of Robert A. Crapo, MD</td>
<td>Roberta Goldring, MD</td>
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<th>Science and Innovation Center Rising Star Awards</th>
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<tr>
<td>Assembly on Allergy, Immunology, and Inflammation</td>
<td>Michael L. Mann, PhD</td>
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<tr>
<td>Assembly on Allergy, Immunology, and Inflammation</td>
<td>Kevin M. Roberson, MD</td>
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<tr>
<td>Assembly on Pulmonary Infections and Tuberculosis</td>
<td>Jennifer R. Honda, MD</td>
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<tr>
<td>Assembly on Pulmonary Infections and Tuberculosis</td>
<td>Robert P. Dickson, MD</td>
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<td>Assembly on Respiratory Structure and Function</td>
<td>Allen Fau, PhD</td>
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<tr>
<td>Assembly on Respiratory Structure and Function</td>
<td>Kambaz Benam, PhD</td>
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<tr>
<td>Assembly on Pulmonary Infections and Tuberculosis</td>
<td>Helen Rich, BA</td>
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<th>Best of ATS Video Lecture Series</th>
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<td>Alison Traiser, MD</td>
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<td>2nd Prize-Fall Cycle</td>
<td>Roland C. Francis, DMed</td>
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<td>3rd Prize-Fall Cycle</td>
<td>Annamarie Lee, PhD</td>
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<td>1st Prize-Spring Cycle</td>
<td>Stephanie Maximou, MD</td>
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<td>2nd Prize-Spring Cycle</td>
<td>Richard M. Schwaitzstein, MD</td>
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Visit us at the ATS 2019 International Conference to test your knowledge—and we’ll donate to the ATS Foundation Research Program in partnership with the Foundation for Sarcoidosis Research.

Mallinckrodt is committed to sarcoidosis research and innovation

BOOTH 4122
NUCALA is indicated for the add-on maintenance treatment of patients 12 years and older with severe asthma with an eosinophilic phenotype. NUCALA is not indicated for the relief of acute bronchospasm or status asthmaticus.

IMPORTANT SAFETY INFORMATION

CONTRAINdications

NUCALA should not be administered to patients with a history of hypersensitivity to mepolizumab or excipients in the formulation.

WARNINGS AND PRECAUTIONS

Hypersensitivity Reactions

Hypersensitivity reactions (eg, anaphylaxis, angioedema, bronchospasm, hypotension, urticaria, rash) have occurred with NUCALA. These reactions generally occur within hours of administration but can have a delayed onset (ie, days). If a hypersensitivity reaction occurs, discontinue NUCALA.

Acute Asthma Symptoms or Deteriorating Disease

NUCALA should not be used to treat acute asthma symptoms, acute exacerbations, or acute bronchospasm.

Opportunistic Infections: Herpes Zoster

In controlled clinical trials, 2 serious adverse reactions of herpes zoster occurred with NUCALA compared to none with placebo. Consider vaccination if medically appropriate.

Reduction of Corticosteroid Dosage

Do not discontinue systemic or inhaled corticosteroids abruptly upon initiation of therapy with NUCALA. Decreases in corticosteroid doses, if appropriate, should be gradual and under the direct supervision of a physician. Reduction in corticosteroid dose may be associated with systemic withdrawal symptoms and/or unmask conditions previously suppressed by systemic corticosteroid therapy.

Parasitic (Helminth) Infection

Treat patients with pre-existing helminth infections before initiating therapy with NUCALA. If patients become infected while receiving NUCALA and do not respond to anti-helminth treatment, discontinue NUCALA until infection resolves.

#1 prescribed biologic indicated for severe eosinophilic asthma*—31,000 patients and counting1†

*Source: IQVIA - NPA™ audit: 12 mo. TRX data ending 11/18 (All rights reserved).
†December 2015 to November 2018 data sourced from IQVIA and GSK. Claims data based on total number of unique patients who had at least one claim for NUCALA in the United States. Not all patients remained on therapy. Individual results may vary.

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Choose NUCALA:

**Powerful Protection From Exacerbations**

*53% REDUCTION in exacerbations*

*61% REDUCTION in exacerbations requiring hospitalizations/ED visits*

**Powerful Reduction in OCS Dose**

**Lasting Evidence**

Only anti-interleukin 5 (IL-5) with a 4.5-year open-label study that evaluated safety and efficacy.

MENSA (Trial 2): 32-week study comparing NUCALA 100 mg to placebo, each added to SOC in 576 patients with severe eosinophilic asthma (SEA). Primary Endpoint Results: Frequency of exacerbations. NUCALA: 0.83/year; placebo: 1.74/year; P<0.001. Secondary Endpoint Results: Frequency of exacerbations requiring hospitalization and/or ED visit; NUCALA: 0.08/year; placebo: 0.20/year; P=0.02.

SIRIUS (Trial 3): 24-week study comparing NUCALA 100 mg to placebo in 135 patients with SEA receiving prednisone 5–35 mg (or equivalent) per day and regular use of high-dose ICS and 1 other controller. Primary Endpoint Results: Percent reduction in daily OCS dose (Weeks 20 to 24) while maintaining asthma control vs placebo; P=0.008.

COLUMBA*: 4.5-year open-label study assessing the safety, immunogenicity, and efficacy of NUCALA 100 mg added to asthma controller therapy in 347 patients with SEA.

*Worsening of asthma that required use of oral/systemic corticosteroids and/or hospitalizations and/or emergency department (ED) visits; for patients on maintenance oral/systemic corticosteroids, exacerbations were defined as requiring at least double the existing maintenance dose for at least 3 days.

**IMPORTANT SAFETY INFORMATION**

**ADVERSE REACTIONS**

The most common adverse reactions (≥3% and more common than placebo) reported in the first 24 weeks of 2 clinical trials with NUCALA (and placebo) were: headache, 19% (18%); injection site reaction, 8% (3%); back pain, 5% (4%); fatigue, 5% (4%); influenza, 3% (2%); urinary tract infection, 3% (2%); abdominal pain upper, 3% (2%); pruritus, 3% (2%); eczema, 3% (<1%); and muscle spasms, 3% (<1%).

Systemic Reactions, including Hypersensitivity Reactions: In 3 clinical trials, the percentages of subjects who experienced systemic (allergic and nonallergic) reactions were 3% for NUCALA and 5% for placebo. Manifestations included rash, flushing, pruritus, headache, and myalgia. A majority of the systemic reactions were experienced on the day of dosing.

Injection site reactions (eg, pain, erythema, swelling, itching, burning sensation) occurred in subjects treated with NUCALA.

**USE IN SPECIFIC POPULATIONS**

A pregnancy exposure registry monitors pregnancy outcomes in women exposed to NUCALA during pregnancy. To enroll call 1-877-311-8972 or visit www.mothertobaby.org/asthma.

The data on pregnancy exposures are insufficient to inform on drug-associated risk. Monoclonal antibodies, such as mepolizumab, are transported across the placenta in a linear fashion as the pregnancy progresses; therefore, potential effects on a fetus are likely to be greater during the second and third trimesters.

**References:**

1. Data on file, GSK.

**Please see Brief Summary of Prescribing Information for NUCALA on the following pages.**

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MPLJRNA190002 March 2019

Produced in USA.
BRIEF SUMMARY

NUCALA (mepolizumab) for injection, for subcutaneous use

The following is a brief summary only and is focused on the indication for maintenance treatment of severe asthma with an eosinophilic phenotype. See full prescribing information for complete product information.

1 INDICATIONS AND USAGE

1.1 Maintenance Treatment of Severe Asthma

NUCALA is indicated for the add-on maintenance treatment of patients with severe asthma aged 12 years and older, and with an eosinophilic phenotype.

1.2 Administration and Dosage

NUCALA should not be administered to patients with a history of hypersensitivity to mepolizumab or excipients in the formulation.

5 WARNINGS AND PRECAUTIONS

5.1 Hypersensitivity Reactions

Hypersensitivity reactions (e.g., anaphylaxis, angioedema, bronchospasm, hypertension, urticaria, rash) have occurred following administration of NUCALA. These reactions generally occur within hours of administration, but in some instances can have a delayed onset (i.e., days). In the event of a hypersensitivity reaction, NUCALA should be discontinued [see Contraindications (4)].

5.2 Acute Asthma Symptoms or Deteriorating Disease

NUCALA should not be used to treat acute asthma symptoms or acute exacerbations. Do not use NUCALA to treat acute bronchospasm or status asthmaticus. Patients should seek medical advice if their asthma remains uncontrolled or worsens after initiation of treatment with NUCALA.

5.3 Opportunistic Infections: Herpes Zoster

Herpes zoster has occurred in subjects receiving NUCALA 100 mg in controlled clinical trials [see Adverse Reactions (6.1)]. Consider vaccination if medically appropriate.

5.4 Reduction of Corticosteroid Dosage

Do not discontinue systemic or inhaled corticosteroids (ICS) abruptly upon initiation of therapy with NUCALA. Reductions in corticosteroid dosage, if appropriate, should be gradual and performed under the direct supervision of a physician. Reduction in corticosteroid dosage may be associated with systemic withdrawal symptoms and/or unmask conditions previously suppressed by systemic corticosteroid therapy.

5.5 Parasitic (Helminth) Infection

Eosinophils may be involved in the immunological response to some helminth infections. Patients with known parasitic infections were excluded from participation in clinical trials. It is unknown if NUCALA will influence a patient’s response against parasitic infections. Treat patients with pre-existing helminth infections before initiating therapy with NUCALA. If patients become infected while receiving treatment with NUCALA and do not respond to anti-helminth treatment, discontinue treatment with NUCALA until infection resolves.

6 ADVERSE REACTIONS

The following adverse reactions are described in greater detail in other sections:

- Hypersensitivity reactions [see Warnings and Precautions (5.1)]
- Opportunistic infections: herpes zoster [see Warnings and Precautions (5.3)]

Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared with rates in the clinical trials of another drug and may not reflect the frequency of adverse reactions observed in clinical practice and/or unmask conditions previously suppressed by corticosteroid therapy.

6.1 Clinical Trials Experience in Severe Asthma

A total of 1,357 subjects with asthma were evaluated in 3 randomized, placebo-controlled, multicenter trials of 24 to 52 weeks’ duration (Trials 1, 2, and 3). Of these, 1,192 had a history of 2 or more exacerbations in the year prior to enrollment despite regular use of high-dose ICS plus additional controller(s) (Trials 1 and 2), and 135 subjects required daily oral corticosteroids (ICS) in addition to regular use of high-dose ICS plus additional controller(s) to maintain asthma control (Trial 3). All subjects had markers of eosinophilic airway inflammation [see Clinical Studies (7.4) of full prescribing information]. Of the subjects enrolled, 59% were female, 83% were white, and ages ranged from 12 to 62 years. Mepolizumab was administered subcutaneously or intravenously once every 4 weeks; 263 subjects received NUCALA (mepolizumab 100 mg SC) for at least 24 weeks. Serious adverse events that occurred in more than 1 subject and in a greater percentage of subjects receiving NUCALA 100 mg (n = 263) than placebo (n = 257) included event, herpes zoster (2 subjects vs. 0 subjects, respectively). Approximately 2% of subjects receiving NUCALA 100 mg withdrew from clinical trials due to adverse events compared with 3% of subjects receiving placebo.

The incidence of adverse reactions in the first 24 weeks of treatment in the 2 confirmatory efficacy and safety trials (Trials 2 and 3) with NUCALA 100 mg is shown in Table 1.

Table 1. Adverse Reactions with NUCALA with ≥3% Incidence and More Common than Placebo in Subjects with Asthma (Trials 2 and 3)

<table>
<thead>
<tr>
<th>Adverse Reaction</th>
<th>NUCALA (Mepolizumab 100 mg)</th>
<th>Placebo (n = 257)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Injection site reaction</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Back pain</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Fatigue</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Influenza</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Urinary tract infection</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Abdominal pain complete</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Pharylitis</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Abdominal pain acute</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Muscle spasms</td>
<td>3</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

52-Week Trial

Adverse reactions from Trial 1 with 52 weeks of treatment with mepolizumab 75 mg intravenous (IV) (n = 153) or placebo (n = 150) with ≥3% incidence and more common than placebo and not shown in Table 1 were:

- abdominal pain, allergic rhinitis, asthma, bronchitis, cystitis, dizziness, dizziness, dyspnea, ear infection, gastroenteritis, lower respiratory tract infection, musculoskeletal pain, nasal congestion, nasopharyngitis, nausia, pharyngitis, pyrexia, rash, urticaria, viral infection, viral respiratory tract infection, and vomiting. In addition, 3 cases of herpes zoster occurred in subjects receiving mepolizumab 75 mg IV compared with 2 subjects in the placebo group.

Systemic Reactions, including Hypersensitivity Reactions

In Trials 1, 2, and 3 described above, the percentage of subjects who experienced systemic allergic and non-allergic reactions was 5% in the placebo group and 3% in the group receiving NUCALA 100 mg. Systemic allergic/hypersensitivity reactions were reported by 2% of subjects in the placebo group and 1% of subjects in the group receiving NUCALA 100 mg. The most commonly reported manifestations of systemic allergic/hypersensitivity reactions reported in the group receiving NUCALA 100 mg included rash, pruritus, headache, and myalgia. Systemic non-allergic reactions were reported by 2% of subjects receiving NUCALA 100 mg and 3% of subjects in the placebo group. The most commonly reported manifestations of systemic non-allergic reactions reported in the group receiving NUCALA 100 mg included rash, flushing, and myalgia.

A majority of the systemic reactions in subjects receiving NUCALA 100 mg (S/E) were experienced on the day of dosing.

Injection Site Reactions

Injection site reactions (e.g., pain, erythema, swelling, itching, burning sensation) occurred at a rate of 8% in subjects receiving NUCALA 100 mg compared with 3% in subjects receiving placebo.

Long-term Safety

Nine hundred ninety-eight subjects received NUCALA 100 mg in ongoing open-label extension studies, during which additional cases of herpes zoster were reported. The overall adverse event profile has been similar to the asthma trials described above.

6.2 Postmarketing Experience

In addition to adverse reactions reported from clinical trials, the following adverse reactions have been identified during postapproval use of NUCALA. Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure. These events have been chosen for inclusion due to either their seriousness, frequency of reporting, or causal connection to NUCALA or a combination of these factors.

Immune System Disorders

Hypersensitivity reactions, including anaphylaxis.

7 DRUG INTERACTIONS

Formal drug interaction trials have not been performed with NUCALA.

8 USE IN SPECIFIC POPULATIONS

8.1 Pregnancy

Pregnancy Exposure Registry

There is a pregnancy exposure registry that monitors pregnancy outcomes in women with asthma exposed to NUCALA during pregnancy. Healthcare providers can enroll patients or encourage patients to enroll themselves by calling 1-877-371-8972 or visiting www.motherstopaby.org/asthma.

Risk Summary

The data on pregnancy exposure are insufficient to inform on drug-associated risk. Monoclonal antibodies, such as mepolizumab, are transported across the placenta in a linear fashion as pregnancy progresses; therefore, potential effects on a fetus are likely to be greater during the second and third trimester of pregnancy. In a prenatal and postnatal development study conducted in cynomolgus monkeys, there was no evidence of fetal harm with IV administration of mepolizumab throughout pregnancy at doses that produced exposures up to approximately 9 times the exposures at the maximum in specific human dose (MRHD) of 300 mg SC (see Data). In the U.S. general population, the estimated background risk for major birth defects and miscarriage in clinically recognized pregnancies is 2% to 4% and 15% to 20%, respectively.

Clinical Considerations

Disease-Associated Maternal and/or Embryofetal Risk: in women with poorly or moderately controlled asthma, evidence demonstrates that there is an increased risk of preterm delivery in the mother and prematurity, low birth weight, and small for gestational age in the neonate. The level of asthma control should be closely monitored in pregnant women and treatment adjusted as necessary to maintain optimal control.

Data

Animal Data: In a prenatal and postnatal development study, pregnant cynomolgus monkeys received mepolizumab from gestation Days 20 to 140 at doses that produced exposures up to approximately 9 times that achieved with the MRHD (on an AUC basis with maternal IV doses up to 100 mg/kg every 4 weeks). Mepolizumab did not exert adverse effects on fetal or neonatal growth (including immune function) up to 9 months after birth. Examinations for internal or skeletal malformations were not performed. Mepolizumab crossed the placenta in cynomolgus monkeys. Concentrations of mepolizumab were approximately 2.4 times higher in infants than in mothers up to Day 178 postpartum. Levels of mepolizumab in milk were ≤0.5% of maternal serum concentration.

In a fertility, early embryonic, and embryofetal development study, pregnant CD-1 mice received an analogous antibody, which inhibits the activity of murine interleukin-5 (IL-5), at an IV dose of 50 mg/kg once per week throughout gestation. The analogous antibody was not teratogenic in mice. Embryofetal development of IL-5–deficient mice has been reported to be generally unaffected relative to wild-type mice.

8.2 Lactation

Risk Summary

There is no information regarding the presence of mepolizumab in human milk, the effects on the breastfed infant, or the effects on milk production. However, mepolizumab is a humanized monoclonal antibody (IgG1 kappa) and immunoglobulin G (IgG) is present in human milk in small amounts. Mepolizumab was present in the milk of cynomolgus monkeys postpartum following dosing during pregnancy [see Use in Specific Populations (8.1)]. The developmental and health benefits of breastfeeding should be considered along with the mother’s clinical need for NUCALA and any potential adverse effects on the breastfed infant from mepolizumab or from the underlying maternal condition.

(continued on next page)
8 USE IN SPECIFIC POPULATIONS (cont’d)

8.4 Pediatric Use

The safety and efficacy in pediatric patients younger than 12 years with asthma have not been established. A total of 28 adolescents aged 12 to 17 years with asthma were enrolled in the Phase 3 asthma studies. Of these, 25 were enrolled in the 32-week exacerbation trial (Trial 2) and had a mean age of 14.8 years. Subjects had a history of 2 or more exacerbations in the previous year despite regular use of high-dose ICS plus additional controller(s) with or without OCS and had blood eosinophils of ≥150 cells/μL at screening or ≥300 cells/μL within 12 months prior to enrollment. [See Clinical Studies (14.1) of full prescribing information] Subjects had a reduction in the rate of exacerbations that trended in favor of mepolizumab. Of the 19 adolescents who received mepolizumab, 9 received NUCALA 100 mg and the mean apparent clearance in these subjects was 35% less than that of adults. The adverse event profile in adolescents was generally similar to the overall population in the Phase 3 trials (see Adverse Reactions (6.1)). The safety and efficacy in pediatric patients other than those with asthma have not been established.

8.5 Geriatric Use

Clinical trials of NUCALA did not include sufficient numbers of subjects aged 65 years and older that received NUCALA (n = 46) to determine whether they respond differently from younger subjects. Other reported clinical experience has not identified differences in responses between the elderly and younger patients. In general, dose selection for an elderly patient should be cautious, usually starting at the low end of the dosing range, reflecting the greater frequency of decreased hepatic, renal, or cardiac function and of concomitant disease or other drug therapy. Based on available data, no adjustment of the dosage of NUCALA in geriatric patients is necessary, but greater sensitivity in some older individuals cannot be ruled out.

10 OVERDOSAGE

Singh doses of up to 1,500 mg have been administered intravenously to subjects in a clinical trial with eosinophilic disease without evidence of dose-related toxicities. There is no specific treatment for an overdose with mepolizumab. If overdose occurs, the patient should be treated supportively with appropriate monitoring as necessary.

13 NONCLINICAL TOXICOLOGY

13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

Long-term animal studies have not been performed to evaluate the carcinogenic potential of mepolizumab. Published literature using animal models suggests that IL-5 and eosinophils are part of an early inflammatory reaction at the site of tumorigenesis and can promote tumor rejection. However, other reports indicate that eosinophil infiltration into tumors can promote tumor growth. Therefore, the malignancy risk in humans from an antibody to IL-5 such as mepolizumab is unknown.

Male and female fertility were unaffected based upon no adverse histopathological findings in the reproductive organs from cynomolgus monkeys receiving mepolizumab for 6 months at IV dosages up to 100 mg/kg once every 4 weeks (approximately 20 times the MRHD of 300 mg on an AUC basis). Matings and reproductive performance were unaffected in male and female CD-1 mice receiving an analogous antibody, which inhibits the activity of murine IL-5, at an IV dosage of 50 mg/kg once per week.

17 PATIENT COUNSELING INFORMATION

See FDA-Approved Patient Labeling.

Hypersensitivity Reactions

Inform patients that hypersensitivity reactions (e.g., anaphylaxis, angioedema, bronchospasm, hypotension, urticaria, rash) have occurred after administration of NUCALA. Instruct patients to contact their physicians if such reactions occur.

Not for Acute Symptoms or Deteriorating Disease

Inform patients that NUCALA does not treat acute asthma symptoms or acute exacerbations. Inform patients to seek medical advice if their asthma remains uncontrolled or worsens after initiation of treatment with NUCALA.

Opportunistic Infections: Herpes Zoster

Inform patients that herpes zoster infections have occurred in patients receiving NUCALA and where medically appropriate, inform patients that vaccination should be considered.

Reduction of Corticosteroid Dosage

Inform patients not to discontinue systemic or inhaled corticosteroids except under the direct supervision of a physician. Inform patients that reduction in corticosteroid dose may be associated with systemic withdrawal symptoms and/or unmask conditions previously suppressed by systemic corticosteroid therapy.

Pregnancy Exposure Registry

Inform women there is a pregnancy exposure registry that monitors pregnancy outcomes in women with asthma exposed to NUCALA during pregnancy and that they can enroll in the Pregnancy Exposure Registry by calling 1-877-311-8972 or by visiting www.motherbaby.org/asthma (see Use in Specific Populations (8.1)).

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Join us to learn more about the

**EVOLVING UNDERSTANDING OF INFLAMMATORY MEDIATORS IN ASTHMA**

Mario Castro, MD, MPH

Alan A. and Edith L. Wolff Professor of Pulmonary and Critical Care Medicine
Professor of Medicine, Pediatrics, and Radiology
Washington University School of Medicine
St. Louis, MO

This presentation is sponsored by Novartis, and is open to all ATS 2019 International Conference attendees.

**Tuesday, May 21**
**1:15 PM to 2:00 PM**

The Kay Bailey Hutchison Convention Center Dallas
The ATS 2019 Exhibit Hall, Theater 1

Boxed lunches will be provided by The American Thoracic Society (ATS)

**COME VISIT US AT**
**Novartis booth #1500 at the ATS 2019 Exhibit Hall**

**SUBMIT YOUR QUESTIONS**
at the Novartis Booth for the opportunity to have them answered personally by Dr. Castro during the presentation. Select questions will be used for discussion.
CALL FOR INPUT

Thank you for being part of the global community of researchers and clinicians who convened here in Dallas to share information and discuss ways of improving pulmonary, critical care, and sleep medicine for people living around the world.

Help us continue our more than century-long tradition of presenting the latest scientific and clinical information during the ATS International Conference by answering the Call for Input for ATS 2020: http://conference.thoracic.org/program/call-for-input/

We look forward to welcoming you to Philadelphia for ATS 2020, May 15-20.
BEAR Cage Winner Nets $10,000

Adrienne Campbell-Washburn, PhD, of the National Heart, Lung, and Blood Institute, won $10,000 in the fifth annual ATS BEAR Cage competition for her invention of a functional lung MRI.

Three finalists presented their products Monday afternoon to a panel of judges, who ultimately awarded the grand prize to Dr. Campbell-Washburn. Also pitching their inventions were Scott M. Gordon, PhD, of the University of Kentucky, who is working to target pulmonary protease activity with an HDL-binding protease inhibitor peptide, and Jasleen Pannu, MD, of Ohio State University, who is inventing a steerable electromagnetic navigation guide endobronchial radial ultrasound with a biopsy needle.

Winner Dr. Campbell-Washburn said her MRI system is a whole new ballgame for imaging. “It’s a lower field but maintains its high performance,” she said. “We’re using it to enable improved lung imaging in addition to MRI-guided catheterization and cardiac imaging. This will allow us to get imaging of lung anatomy as well as ventilation, perfusion, tissue characterization, and blood oxygenation all in a single exam. It’s ionizing radiation-free, and it’s low cost and, therefore, accessible.”

Sharon Rounds, MD, accepts the Breathing for Life Award from ATS Foundation Chair Dean Schraufnagel at the ATS Foundation Research Benefit. This award is the highest honor given to an ATS member for philanthropy. In addition to being one of the most generous supporters of the Foundation, Dr. Rounds served on the Foundation’s board for six years. The weather almost prevented Dr. Rounds’ arrival in Dallas in time to receive the honor, but the researcher and clinician made it just in time.

Rounds: Breathing for Life Award Winner

Go on a Quest in the Exhibit Hall

Have you been on the Discovery Quest yet? If not, don’t miss your final chance to win a prize. All it takes is visiting different booths in the Exhibit Hall, scanning a QR code using your ATS mobile app, and answering questions.

Once you scan the code, the app will ask a simple multiple-choice question. You might find the answer on booth signs and information posters or you might need to talk with a booth staffer. Either way, the answer will be clear.

After you scan all the codes, an ATS staffer will enter you in a random drawing for a prize. So what are you waiting for? Head to the Exhibit Hall! It is open today from 10:30 a.m. to 3:30 p.m.

PRODUCT SHOWCASE

Are your patients short of breath with a dry, hacking cough? It could be pulmonary fibrosis.

Stephanie is 82 years old and still working full time.  She is living with pulmonary fibrosis.

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Visit booth 4076 to learn about managing chest congestion in stable chronic bronchitis patients and claim your Starbucks $5 giftcard!

App-based spirometers for Mobile-Health

Visit Us at Booth 7121!
KASHI

Continued from page 1

“My goal, through collaborating with health care professionals and activists, is to not only raise awareness, but improve working conditions and help to promote international protocols to find the cause, and thereby the cure for this disease,” he said.

Mr. Kashi said he is motivated to be in the middle of issues. By doing so, he finds a piece of reality to report on, from a unique angle or perspective, to shed light in a new way.

“The Niger Delta gave me just this opportunity, to tell a neglected story in a way not yet done,” he said, about his book, Curse of the Black Gold: 50 Years of Oil in the Niger Delta.

The piece takes a graphic look at the profound cost of oil exploitation in West Africa through Nigeria’s 50 year history with oil production and the resulting environmental degradation and community conflicts that have plagued the region.

“I had extraordinary access, so my images were able to be graphic, revealing, and ultimately disturbing ... which makes them useful for the media, advocates, and educators,” Mr. Kashi said.

Oxfam, the confederation of charitable organizations focused on alleviating global poverty, has commissioned a panel exhibition of his work that has already been shown at Johns Hopkins University and will travel to 10 more universities.

“This is further testament to my goal of creating photography that has power and usefulness beyond the world of photography,” said Mr. Kashi. “I realize photographs cannot change the world in one fell swoop, but they sure can change people’s minds. Isn’t that where change begins?”

Do You See What I See?
Kashi’s Photo Essays

Pakistan Encountered
In the Hot Zone: CKDU in Sri Lanka
CKDNT in India
Everyday Climate Change
Sugar Cane & Kidney Disease
Marseille’s Melting Pot
Palliative Care in Mexico
Syrian Refugees
Island of Widows
Northern Nigeria

Best of ATS Store

The Best of ATS is the onsite store that sells ATS education products, including downloadable webcasts; audio and pdf files for postgraduate courses and scientific and clinical sessions; and books and manuals, including the ATS Review for the Critical Care Boards.

The onsite sales booth is located in Hall B, Level 2, of the Kay Bailey Hutchison Convention Center Dallas. You can also visit https://store.thoracic.org. A 10 percent discount is available through Thursday, May 23.

U.S. Presidents with Severe Asthma

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Asthma2019.com/register

Tips to Better IPF Management

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Marsalis Exhibit Hall A
IPF2019.com/register

Two MECC-Organized Symposia at the ATS 2019 International Conference.

All ATS 2019 International Conference attendees are invited to attend these Non-CME educational programs sponsored by The France Foundation and supported by grants from Boehringer Ingelheim Pharmaceuticals, Inc. (IPF), Genentech (IPF), Sanofi Genzyme and Regeneron Pharmaceuticals (Asthma).
QUESTION OF THE DAY

How important is artificial intelligence to respiratory science and health?

Ryu TofTs, MBCHB, MBBS, MD
Columbus, Mississippi
We study what we like and know, but we shy away from what we don’t know. So if AI can design tests and things that will help you improve that, that’s good. But I’m skeptical about AI. What you put in your head, you value. I count, and I do mental arithmetic, just to maintain that space. I’m skeptical about anyone willing to outsource that kind of thing.

Neil Barnes, MD
London
I think artificial intelligence will be important in the future, but the key thing is going to be that we have to have datasets that the artificial intelligence can analyze that are going to be sufficiently granular, that you’ve got all that you need. As we move toward more and more electronic medical records, those datasets become more available, but it’s going to be having the right data and the right way of analyzing it to go together.

Mostafijur Rahman, MD, MS
Brooklyn, NY
It’s very important. Using mission learning or artificial intelligence, this kind of stuff is coming up. Especially for many of the experiments now, the resources they’re using are animals. Maybe you can avoid that if you’re using artificial intelligence in your experiments.

Erika Garcia, PhD
Los Angeles
I do environmental epidemiology as opposed to directly working with lungs. I would probably say something with trying to understand better the lung geometry to think about exposures. There are different machine learning algorithms that look at patterns in data and try to understand the relationship between those patterns to predict based on new data.

Linda Chen, DO
Mineola, New York
I am inspired by the simulation technology that has been around here [on the exhibit floor]. It’s interesting to practice on a simulated procedure. And it’s a good way to practice without harming a patient. You kind of go through the steps and practice so that when you’re there in real life, you’re more comfortable and confident.

Would you recognize EGPA if it were right in front of your face?

EGPA is eosinophilic granulomatosis with polyangiitis, formerly known as Churg-Strauss syndrome.

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TODAY’S TOP TWEETS #ATS2019

Dr. Hui Fang Lim @NUSingapore presenting our work on sputum B cells and asthma in severe asthma to Prof. Granot, UHN, Toronto @atscommunity #ATS2019 @DrMMukherjee

MUSC pediatric pulmonologist Chung Lee, MD, PhD, enjoying #ATS2019 and posing with Fuzzy! @CadenceDO

Djadja Khanzadeh @UofL_PCCS This group might be having a little too much fun in Dallas. #ATS2019

Lorraine Ware starting with a citation from E.M. Foster "Spoon feeding in the long run teaches us nothing but the shape of the spoon." So true. Important to be proactive and get challenged. #ATS2019 #Mentoring @m_konigshoff

So excited for the #ATS2019 #womensforum. Look at these amazing women leaders and mentors. So excited to be part of this! #WomenInMedicine #womeninstem #womeninpulm @MariaCBasil

My favorite line from Julie Bastarache speaking about being a mentee at the ATS women’s luncheon (while putting up a page from a grant application): the “sea of red” is a sign of great mentorship. Yes! #ATS2019 #WomenInMedicine @AnnaPodolanczuk

Make sure to visit the wellness booth for some quality puppy time! Looks like they are offering group petting sessions too, so take your friends and share the joy! #ATS2019 Congrats to @seppo_rinne, Ajanta and team for getting such an interactive experience together! @virenkaul

@atsearlycareer @ATS_PITB piloting a cool new way to highlight emerging talented educators with a teaching competition. Some really good talks by rising members! #ATS2019. Could this lead to an ATS-wide competition? An ATS Has Talent, or ATS Idol, if you will?

@atstoa

What a group! So pleased and thankful for @atscommunity support to bring these experts together on ‘Exposure Assessment Tools for HP’! Thanks everyone! #ATS2019 @leticiakawano @hayleynbarnes @sifwalsh

@KerriBerriKerri

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Join the #ATS2019 photo Instagram Challenge
The program supports innovative scientific research that will advance knowledge in the field of cystic fibrosis, and provides support for 3 junior faculty researchers in Canada, Europe, or the United States for a 2-year period.

Each award will be funded up to USD130,000, to be paid in annual installments of up to USD65,000.

Awards are subject to separate terms and conditions.

SCIENTIFIC REVIEW COMMITTEE

Applications will be reviewed by a committee comprised of internationally recognized experts in basic and clinical research in the field of cystic fibrosis.

Application Deadline:
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TRELEGY ELLIPTA  
(fluticasone furoate, umeclidinium, and vilanterol inhalation powder)

TRELEGY ELLIPTA was developed in collaboration with INNQVIVA

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