ATS 2026: AI, Innovation, and Humanism

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THE American Thoracic Society (ATS) International Conference, held May 15–20, 2026, in Orlando, Florida, USA, brought together more than 14,000 clinicians, researchers, educators, trainees, and industry leaders from more than 100 countries. Through 6 days of scientific sessions, clinical trials, keynote addresses, and educational programming, ATS 2026 focused on a field in transition, increasingly shaped by AI and precision therapeutics, while maintaining an emphasis on patient-centered care, equity, and professional resilience.

The meeting opened with a keynote address from Robert M. Wachter, from the University of California, San Francisco, USA, and author of the national bestseller 'A Giant Leap: How AI is Transforming Healthcare and What That Means for Our Future'.[1] The presentation, 'How AI is Transforming Health Care', set the tone for a conference in which AI emerged as a defining force poised to reshape medicine. Wachter highlighted the exhilarating progress of ambient documentation platforms, clinical decision-support systems, and AI assisted chart summarization tools, while also acknowledging important challenges including misinformation, privacy concerns, and potential clinician de-skilling. Nonetheless, his overall message was one of informed optimism, emphasizing that AI does not need to be perfect to improve healthcare, only better than the current status quo. He encouraged clinicians to actively engage with and help shape the integration of AI into medical practice and education.

This emphasis on engagement with emerging technologies was reinforced through the ATS 2026 AI Lab, a new initiative dedicated to exploring applications of AI in pulmonary, critical care, and sleep medicine. Educational sessions focused on a wide range of topics, including AI literacy, model development, and clinical applications of large language models, while interactive activities allowed attendees opportunities to explore practical applications of these technologies firsthand. The AI Lab reflected ATS's broader effort to prepare clinicians for the rapidly evolving digital landscape of medicine.

Despite the conference's strong emphasis on technological innovation, ATS 2026 also emphasized deeply human themes. The

plenary session featured Rana L. Awdish from Henry Ford Health, Detroit, Michigan, USA, author of medical memoir 'In Shock: My Journey from Death to Recovery and the Redemptive Power of Hope'.[2] Her presentation chronicled her personal experience surviving catastrophic critical illness and her subsequent reflections as both physician and patient. Drawing from her journey of recovery, Awdish discussed the profound impact of communication, empathy, and language during moments of vulnerability and suffering, emphasizing how clinician interactions can shape patients' experiences long after hospitalization. The plenary resonated strongly with attendees and served as a reminder that medicine remains fundamentally grounded in human relationships, compassion, and hope, even amid extraordinary scientific and technological progress.

During the conference, multiple practice changing clinical trials were introduced on a variety of topics in pulmonary and critical care medicine. Below, the author reviews some of the highlights

PULMONARY HYPERTENSION

One of the major pulmonary vascular highlights of ATS 2026 was the growing sense that pulmonary arterial hypertension (PAH) entered a new therapeutic era. This was emphasized during the President's symposium, 'Celebrating Science: Pulmonary Hypertension from Basic Discoveries to Translational Breakthroughs, to Clinical Applications', which tracked the evolution of PAH therapy from early patho-biologic discoveries to modern precision therapeutics.

Against this backdrop, Vallerie McLaughlin, University of Michigan, Ann Arbor, USA, presented data from the global Phase III randomized, double-blind, placebo-controlled ADVANCE OUTCOMES trial evaluating ralinepag, an oral selective prostacyclin receptor agonist in patients with PAH receiving background therapy. With 687 Group 1 patients with PAH enrolled, the study demonstrated a statistically significant 55% reduction in the risk of first clinical worsening when compared with placebo. This benefit was consistent across major subgroups, including time since diagnosis, baseline 6-minute walk test (6MWD), WHO functional class, N-terminal pro-B-type natriuretic peptide (NT-ProBNP) levels, background therapies, and etiology. Statistically significant improvements relative to placebo were observed in multiple secondary outcomes, including 6MWD and NT-proBNP. This trial highlighted the continued evolution of the therapeutic armamentarium in PAH.

BRONCHIECTASIS AND NON-TUBERCULOUS MYCOBACTERIAL INFECTIONS

Mycobacterium avium complex (MAC) is a difficult disease to treat, requiring prolonged multidrug therapy, with a current 60% treatment success rate. Amikacin liposome inhalation suspension (ALIS) was previously for refractory MAC disease.[3]

Charles L. Daley, from National Jewish Health, Denver, Colorado, USA, presented results from the ENCORE trial, a Phase IIIb randomized, double-blind, multinational trial evaluating the efficacy of ALIS as a first-line treatment in MAC. Symptomatic adults with positive cultures were randomized to ALIS with azithromycin and ethambutol or placebo with azithromycin and ethambutol. Unique among MAC trials, ENCORE utilized the validated Quality of Life Bronchiectasis Respiratory Symptom Scale (QOL-B RSS) patient-reported outcome score as its primary endpoint. Among 425 patients randomized, 80% were treatment naïve.

Patients receiving ALIS had a 17.77-point improvement from baseline compared with 14.66 points in the placebo group (p=0.0299). Culture conversion by Month 6 occurred in 87.8% of patients receiving ALIS compared with 57% in the placebo arm, and benefits

persisted through Month 12 with durable culture conversion through Month 15 of 76.2% compared to 47.6% in the placebo arm. These findings suggest that upfront incorporation of ALIS may improve symptoms and microbiologic eradication rates in MAC lung disease.

INTERSTITIAL LUNG DISEASE

Interest in inhaled treprostinil as a potential therapy for idiopathic pulmonary fibrosis (IPF) emerged following the INCREASE trial, a study evaluating inhaled treprostinil in patients with pulmonary hypertension associated with interstitial lung disease. The INCREASE trial unexpectedly demonstrated improvements in forced vital capacity (FVC),[4] raising the possibility of antifibrotic effects independent of pulmonary vasodilatory effects. These findings provided the rationale for the TETON clinical trial program.

Steven D. Nathan, from Inova Fairfax Hospital, Woodburn, Virginia, USA, presented results from the TETON-1 trial. This was a Phase III randomized, double-blind, placebo-controlled clinical done in Canada and the US evaluating inhaled treprostinil in patients with IPF. Patients with or without background antifibrotic therapy were randomized to receive inhaled treprostinil or placebo over a 52-week treatment period. The primary endpoint was change in absolute FVC.

TETON-1 enrolled 598 patients and met its primary endpoint, with inhaled treprostinil demonstrating a statistically significant reduction in FVC decline compared with placebo. Median change in FVC at Week 52 was −43.3 mL in the inhaled treprostinil group compared with −196.2 mL in the placebo arm, corresponding to a treatment difference of 130.1 mL ($p<0.001$). In participants not on background therapy, on nintedanib, or on pirfenidone, the mean differences were 98.7 mL, 123.4 mL, and 168 mL, respectively. An important secondary outcome was that inhaled treprostinil also reduced the risk of clinical worsening by 33%, defined as death, respiratory hospitalization, or a ≥10% relative decline in FVC.

Clinically, the TETON-1 trial is important because it represents one of the first Phase III studies to demonstrate a meaningful reduction in FVC decline with a novel inhaled therapy in IPF. If incorporated into future treatment paradigms, inhaled treprostinil could substantially expand the currently limited therapeutic landscape for patients with IPF.

SLEEP MEDICINE

Sanjay R. Patel and Patrick J. Strollo, from the University of Pittsburgh, Pennsylvania, USA, presented pooled findings from the SynAIRgy and LunAIRo Phase III trials evaluating aroxybutynin and atomexetine (AD109), an investigational oral therapy for obstructive sleep apnea.

AD109 combines aroxybutynin, an antimuscarinic agent, and atomoxetine, a selective norepinephrine reuptake inhibitor, with the goal of improving upper airway dilator muscle tone and reducing upper airway collapse during sleep. SynAIRgy was a 26-week randomized, double-blind, placebo-controlled trial enrolling 646 participants across the US and Canada, while LunAIRo was a 51-week study enrolling 660 participants from 64 US sites. Eligible participants had OSA defined by a 4% Apnea-Hypopnea Index (AHI4) greater than five events/hour, PROMIS fatigue raw score ≥17, and had failed or declined positive airway pressure therapy.

In the pooled treatment policy estimand, which included all randomized participants receiving at least one dose of study drug, AD109 reduced AHI4 by a least-squares mean difference of −4.0 events/hour versus placebo ($p<0.0001$), corresponding to a 39.3% reduction from baseline compared with 12.6% for placebo. In the supportive on-treatment analysis, AD109 achieved a 51.6% reduction

from baseline compared with 13.3% for placebo. Secondary endpoints also improved, including hypoxic burden, daytime sleepiness, and patient-reported fatigue and sleep impairment. Disease control, defined as AHI4 <5 events/hour, was achieved in 22.6% of treated participants versus 8.3% with placebo.

Collectively, these studies represent an exciting new oral alternative for the treatment of obstructive sleep apnea for patients unable or unwilling to use positive airway pressure therapy.

BEAR-CAGE

ATS 2026 also featured the annual BEAR Cage competition, a 'Shark Tank'-style competition designed to fund innovative translational ideas in pulmonary and critical care medicine. This year's winner, Emily Mitchell from the University of California San Diego, USA, presented 'Breaking the Silence: Eye-Tracking for Restoring Patient Agency and Communication in the ICU', a software platform utilizing eye-tracking technology to help intubated ICU patients communicate and regain autonomy. For winning the competition, Mitchell received the 10,000 USD grand prize, which she plans to reinvest into further development and hospital testing of the platform later this year.

CONCLUSION

Collectively, the highlighted sessions reflect a specialty entering a period of rapid therapeutic advancement. Novel therapeutic modalities in the fields of pulmonary hypertension, interstitial lung disease, nontuberculous mycobacterial infections, and obstructive sleep apnea present exciting opportunities to improve outcomes in diseases that have historically carried substantial morbidity and limited treatment options. More broadly, the conference highlighted the growing role of AI and digital innovation in modern medicine, while reaffirming the importance of compassionate, patient-centered care. Overall, ATS 2026 reflected a field poised to enter an exciting new era of respiratory medicine, one defined by both innovation and compassion.

References

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