Polarean Highlights New CHEST Journal Study Demonstrating Xenon MRI Predicts Cystic Fibrosis Exacerbations

Findings Show Xenon MRI Ventilation Defects Independently Predicts Exacerbation Risk Beyond Conventional Clinical Measures

DURHAM, NC and London, January 12, 2026 (GLOBE NEWSWIRE) -- Polarean, a commercial-stage medical imaging company advancing functional MRI of the lungs, today highlighted the publication of a peer-reviewed clinical study in CHEST. The study demonstrates that structural and functional pulmonary MRI adds important new insights in predicting pulmonary exacerbations beyond standard pulmonary function tests in people living with cystic fibrosis (CF).

The study, titled "Structural and Functional Pulmonary MRI to Predict Pulmonary Exacerbations in Cystic Fibrosis," analyzed imaging and clinical data from 106 individuals with CF who were imaged and followed at Cincinnati Children's. Investigators from The Hospital for Sick Children (SickKids), affiliated with the University of Toronto, also collaborated on the study and data analysis. The findings show that while structural imaging reflects accumulated disease burden, Xenon MRI ventilation defects provide independent prediction of future exacerbations, even after accounting for prior clinical history and spirometry results. The results indicate that Xenon MRI can detect regional functional changes deep within the lungs that may not be captured by traditional global measures such as spirometry.

Specifically, the study found that Xenon MRI measures of ventilation abnormalities, quantified as ventilation defect percent (VDP), were significantly associated with future pulmonary exacerbation risk. Individuals with abnormal VDP experienced nearly three times the rate of exacerbations compared with those with normal ventilation, including patients with relatively preserved lung function by conventional pulmonary function testing.

"This is an important finding because it underscores the power of Xenon MRI to reveal functional changes that may be overlooked in patients with mild or gradual decline," **said Christopher R. von Jako, PhD, Chief Executive Officer of Polarean, Inc**. "Jason Woods and his collaborators have been driving imaging innovation in the cystic fibrosis field by rigorously demonstrating how functional lung MRI can impact meaningful clinical outcomes. A non-invasive sensitive measure in children is critical, not only in CF, but across a broad range of lung diseases where small-airway dysfunction may precede measurable changes in standard pulmonary function tests."

Pulmonary exacerbations remain a major driver of morbidity, healthcare utilization, and long-term disease progression in CF, even in the era of highly effective modulator therapies. The ability to better identify patients at increased risk for exacerbations has meaningful implications for clinical management, monitoring strategies, cost containment, and therapeutic decision-making. "Functional lung MRI with Xenon enables visualization of regional ventilation defects that are often invisible to conventional testing," **said Chase Hall, MD, Chief Medical Advisor at Polarean, Inc**. "The sensitivity to small airway abnormalities demonstrated in this study highlights why advanced lung MRI has the potential to add value not only in cystic fibrosis, but also in other pulmonary diseases, such as asthma and COPD, that have shown similar VDP-exacerbation relationships."

About Cystic Fibrosis

Cystic fibrosis is a genetic, life-limiting disease that primarily affects the lungs and digestive system. It is characterized by thick, sticky mucus that can obstruct airways, promote chronic infection, and lead to progressive lung damage over time. While advances in therapy have significantly improved outcomes and life expectancy, pulmonary exacerbations remain a major driver of morbidity, hospitalizations, and long-term loss of lung function. As disease progression becomes more heterogeneous and patients are managed earlier and longer, sensitive tools capable of detecting early and regional changes in lung function are increasingly important for disease monitoring and management.

About Polarean

Polarean is a commercial-stage medical imaging technology company advancing functional MRI of the lungs by enabling direct visualization of lung function using MRI. The Company is bringing the power and safety of MRI to the respiratory and cardiopulmonary healthcare community, addressing a critical need for modern tools to assess regional lung function including ventilation, diffusion and perfusion, in regions of the lung that have historically remained a "silent zone."

Polarean is a leader in hyperpolarization science and has developed the first and only FDA-approved hyperpolarized Xenon 129 MRI inhaled contrast agent, XENOVIEW®. Through its integrated Xenon MRI platform, the Company provides a noninvasive, radiation free approach to assessing lung ventilation and advanced cardiopulmonary physiology. This capability enables clinical care, academic research, and pharmaceutical drug development, while supporting Polarean's mission to optimize lung health and prevent avoidable loss by illuminating hidden disease across high burden conditions including airway disease, interstitial lung disease, cardiopulmonary disorders, lung cancer, and unexplained dyspnea, and addresses a global unmet medical need affecting more than 500 million patients worldwide. Founded in 2012, Polarean has offices in Durham, North Carolina, and London, United Kingdom. For more information, please visit www.polarean.com.

XENOVIEW IMPORTANT SAFETY INFORMATION

Indication
XENOVIEW®, prepared from the Xenon Xe 129 Gas Blend, is a hyperpolarized contrast agent indicated for use with magnetic resonance imaging (MRI) for evaluation of lung ventilation in adults and pediatric patients aged 6 years and older.

Limitations of Use
XENOVIEW has not been evaluated for use with lung perfusion imaging.

CONTRAINDICATIONS
None.

WARNINGS AND PRECAUTIONS

Risk of Decreased Image Quality from Supplemental Oxygen: Supplemental oxygen administered simultaneously with XENOVIEW inhalation can cause degradation of image quality. For patients on supplemental oxygen, withhold oxygen inhalation for two breaths prior to XENOVIEW inhalation, and resume oxygen inhalation immediately following the imaging breath hold.

Risk of Transient Hypoxia: Inhalation of an anoxic gas such as XENOVIEW may cause transient hypoxemia in susceptible patients. Monitor all patients for oxygen saturation and symptoms of hypoxemia and treat as clinically indicated.

ADVERSE REACTIONS

Adverse Reactions in Adult Patients: The adverse reactions (> one patient) in efficacy trials were oropharyngeal pain, headache, and dizziness.

Adverse Reactions in Pediatric Patients: In published literature in pediatric patients aged 6 to 18 years, the following transient adverse reactions were reported: blood oxygen desaturation, heart rate elevation, numbness, tingling, dizziness, and euphoria. In at least one published study of pediatric patients aged 6 to 18 years, transient decrease in SpO2% and transient increase in heart rate were reported following hyperpolarized xenon Xe 129 administration.

Please see full prescribing information at www.XENOVIEW.net.

Contact Information:

Polarean:
Chuck Osborne
Chief Financial Officer
+1 (919) 206-7900, ext. 117
cosborne@polarean.com

Polarean Media Contact:
Alexis Opp
+1 (919) 206-7900, ext. 145
aopp@polarean.com

General inquiries: info@polarean.com
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