

NewYork-Presbyterian/Columbia Surgeons Perform First "Ex Vivo" Lung Transplants in New York

Ex Vivo Technique Uses Oxygen, Nutrients and Antibiotics to Assess and Recondition Donor Lungs Outside the Body Prior to Transplantation

Innovative Approach Has Potential to Dramatically Increase the Availability of Lungs for Transplant

NEW YORK (Dec. 12, 2011) -- A 59-year-old woman from upstate New York and a 60-year-old woman from the New York metro area were the first patients in New York state and among the first in the United States to receive transplanted lungs that were assessed and reconditioned in the operating room -- a technique that has the potential to dramatically increase the availability of lungs for transplant. The experimental procedure was performed by Dr. Frank D'Ovidio at NewYork-Presbyterian Hospital/Columbia University Medical Center.

The "ex vivo" or outside-the-body approach involved removing lungs from a deceased donor, then enclosing them inside a transparent dome and connecting them to a cardiopulmonary pump and a ventilator. For four hours, the lungs were infused with nutrients and antibiotics. They were gradually warmed to body temperature, ventilated and oxygenated -- a process that resembles breathing, with the lungs inflating and deflating. Once determined to be viable, the lungs were immediately transplanted into the patients.

"Assessing lungs this way gives us a much more precise picture of how they should perform after transplant, and the reconditioning process may actually improve the chances of success," says Dr. D'Ovidio, associate surgical director of the lung transplant program at NewYork-Presbyterian Hospital/Columbia University Medical Center and assistant professor of surgery at Columbia University College of Physicians and Surgeons.

Traditionally, transplant surgeons have relied on a less sophisticated assessment. "Now with the ex vivo method, not only can we see the lungs inflate and deflate, but we also get hard data on how they function by monitoring multiple parameters and ultimately making sure that the gas exchange is happening at the level it needs to," continues Dr. D'Ovidio.

Going forward, the ex vivo procedure could significantly increase the availability of donor lungs, says Dr. D'Ovidio. "This has the potential to do for lung transplant what perfusion has done for kidney transplant. With the tool to better assess, recondition and possibly repair the organs, we can increase the number available to patients who desperately need them."

Currently, fewer than 30 percent of donor lungs are acceptable for transplantation, but physicians say ex vivo has the potential to double this figure as the reconditioning process is refined and improved.

The recent transplants at NewYork-Presbyterian/Columbia are part of an ongoing FDA investigational multicenter clinical research trial designed to compare outcomes from lung transplants using the ex vivo technique with those using the traditional method. This

investigational trial, currently taking place in the United States, is coordinated and funded by Vitrolife, makers of the ex vivo perfusion system.

The lung transplant program at NewYork-Presbyterian/Columbia ranks nationally in the top seven for volume and in the top five for patient survival after transplantation (2011 Scientific Registry Transplant Recipients, www.srtr.org), and it is the only lung transplant program in New York state. The Hospital performed 51 lung transplants in 2010 and has performed 48 in the first 10 months of 2011.

Organ Transplantation at NewYork-Presbyterian Hospital

The organ transplantation program at NewYork-Presbyterian Hospital -- which includes NewYork-Presbyterian Hospital/Weill Cornell, NewYork-Presbyterian Hospital/Columbia and The Rogosin Institute -- is the most active program of its kind in the nation, offering comprehensive and personalized care for the heart, liver, pancreas, kidney and lung. With outcomes ranked among the nation's best, the Hospital is dedicated to improving quality of life for its patients. NewYork-Presbyterian's dedicated teams of surgeons and physicians are responsible for many significant advances made over the past several decades in transplant surgery and the maintenance of healthy organs. The Hospital has been on the forefront of developing and improving anti-rejection medications (immunosuppressants), minimally invasive surgery for living donors, genetic methods to detect transplant rejection, strategies to increase opportunities for donor matching, islet cell transplantation and the FDA-approved Left Ventricle Assist Device (LVAD) that functions as a bridge to transplantation for those waiting for a new heart.

NewYork-Presbyterian Hospital

NewYork-Presbyterian Hospital, based in New York City, is the nation's largest not-for-profit, non-sectarian hospital, with 2,409 beds. The Hospital has nearly 2 million inpatient and outpatient visits in a year, including 12,797 deliveries and 195,294 visits to its emergency departments. NewYork-Presbyterian's 6,144 affiliated physicians and 19,376 staff provide state-of-the-art inpatient, ambulatory and preventive care in all areas of medicine at five major centers: NewYork-Presbyterian Hospital/Weill Cornell Medical Center, NewYork-Presbyterian Hospital/Columbia University Medical Center, NewYork-Presbyterian/Morgan Stanley Children's Hospital, NewYork-Presbyterian/The Allen Hospital and NewYork-Presbyterian Hospital/Westchester Division. One of the most comprehensive health care institutions in the world, the Hospital is committed to excellence in patient care, research, education and community service. NewYork-Presbyterian is the #1 hospital in the New York metropolitan area and is consistently ranked among the best academic medical institutions in the nation, according to U.S. News & World Report. The Hospital has academic affiliations with two of the nation's leading medical colleges: Weill Cornell Medical College and Columbia University College of Physicians and Surgeons. For more information, visit www.nyp.org.

Columbia University Medical Center

Columbia University Medical Center provides international leadership in basic, pre-clinical and clinical research, in medical and health sciences education, and in patient care. The medical center trains future leaders and includes the dedicated work of many physicians, scientists, public health professionals, dentists, and nurses at the College of Physicians and Surgeons, the Mailman

School of Public Health, the College of Dental Medicine, the School of Nursing, the biomedical departments of the Graduate School of Arts and Sciences, and allied research centers and institutions. Established in 1767, Columbia's College of Physicians and Surgeons was the first institution in the country to grant the M.D. degree and is now among the most selective medical schools in the country. Columbia University Medical Center is home to the most comprehensive medical research enterprise in New York City and State and one of the largest in the United States. Columbia University Medical Center is affiliated with NewYork-Presbyterian Hospital, the nation's largest not-for-profit, non-sectarian hospital provider. For more information, please visit www.cumc.columbia.edu.

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