

# Lung Retransplantation Is Increasingly Common

BY SHERRY BOSCHERT

San Francisco Bureau

SAN FRANCISCO — The number of lung retransplantations is surging, and the wait times for retransplantation is evaporating since adoption of the current lung allocation system in 2005, Dr. Steven M. Kawut said.

A retrospective study also found that survival after lung retransplantation has improved in the modern era but still is not as good as after a first lung transplant. Patients undergoing lung retransplantation within 30 days of the initial transplant are three times more likely to die than patients undergoing retransplantation more than 30 days after the first lung transplant, he and his associates reported at the annual meeting of the International Society for Heart and Lung Transplantation.

“Early retransplantation really should be avoided,” said Dr. Kawut of Columbia University, New York.

In general, only 15% of patients who undergo lung transplant survive to 5 years. Repeating lung transplantation can keep some patients alive but the procedure is more challenging, the patients more vulnerable, and the ethical issues more complex, according to Dr. Kawut.

The investigators compared transplantation registry data on 205 patients who underwent lung retransplanta-

tion from 2001 through May of 2006 (the modern-era group) with data on a historical cohort that underwent lung retransplantation from 1990 to 2000, and a third group of patients who underwent primary lung transplantation in the modern era.

The number of lung retransplantations ranged from 25 to 33 per year in 2001-2004 and leaped dramatically to 71 in 2005, when the Organ Procurement and Transplantation Network adopted the new Lung Allocation Score (LAS). The study includes 13 of the 56 retransplantations performed in 2006. The median wait for a lung retransplantation in the modern era was 6 months before introduction of the LAS and 1 month since then.

Pre-LAS, 75% of recipients got lung retransplants within 19 months and the rest waited more than 19 months. Under the LAS system, 25% of recipients underwent lung retransplantation within 3 days of being wait-listed—“unbelievable!” Dr. Kawut remarked. Half of lung retransplantations occurred within 1 month, and 75% of retransplantations were performed within 2 months.

At 1 year after retransplantation, 62% of patients were alive. At 5 years, 45% were alive. Compared with retransplantations done before 2001, patients in the modern era were 40% more likely to survive. Compared with patients undergoing a first lung transplant in the modern

era, those getting retransplanted in the same time period were 40% more likely to die after controlling for the potentially confounding effects of age, sex, race, the initial diagnosis, the type of transplant procedure, and the use of mechanical ventilation.

A statistically significant increase in risk for death if the retransplanted lungs came from a male donor should be considered with some skepticism because other studies have not shown this, Dr. Kawut said.

To help physicians advise patients considering lung retransplantation, the investigators analyzed data on a subset of 110 patients who survived at least 1 year after the procedure. They found an “absolutely dismal” survival rate of 14% for those who underwent retransplantation within 30 days of the primary transplant and 1-year survival in 58% who underwent retransplantation more than 30 days after the initial surgery—“still not perfect, but much better than 14%,” he said. “Numbers like these may be more useful for the patient in your office.”

The most difficult part of lung retransplantation is the ethical issues involved in giving one patient two opportunities for transplant when that probably denies other patients of even one transplant, because of donor organ shortages. Attention to this ethical issue “trails far behind our ability to do the procedure,” he said. ■

## Incense Use Tied to Respiratory Cancers

LOS ANGELES — A large prospective cohort study has found an association between long-term exposure to burning incense and cancers of the respiratory tract, according to a poster presentation by Dr. Jeppe T. Friberg at the annual meeting of the American Association for Cancer Research.

Among 61,320 Singapore Chinese, long-term incense users had more than twice the relative risk of non-nasopharyngeal carcinomas of the upper respiratory tract, compared with people who did not use incense.

The risk of squamous cell carcinomas of the lung rose 1.7-fold and the risk of squamous cell carcinomas of the entire respiratory tract rose 1.8-fold among long-term incense users, wrote Dr. Friberg of the University of Minnesota, Minneapolis, and colleagues.

The use of incense did not increase the risk of non-squamous cell carcinomas. Participants in the study were 45-74 years old and were cancer free when they enrolled between 1993 and 1998. They underwent a comprehensive interview on living conditions, dietary factors, and lifestyle factors. Investigators followed the cohort through 2005.

In the multivariate analysis, results were adjusted for age, gender, dialect group, education level, number of cigarettes smoked per day, years of smoking, frequency of alcohol intake, intake of isothiocyanates, intake of Chinese-style preserved foods, body mass index, and parity in women.

The investigators noted that the burning of incense is an integral part of daily life in large parts of Asia and is not restricted to places of worship: About half the population in Southeast Asia burns incense at home every day. Incense burning produces a great deal of particulate matter and releases many possible carcinogens including polyaromatic hydrocarbons, carbonyls, and benzene.

—Robert Finn



**Risk of squamous cell carcinomas rose 1.8-fold in long-term users.**

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## Look to Vital Signs for Clues About Missed Pulmonary Thromboemboli

BY TIMOTHY F. KIRN

Sacramento Bureau

SAN DIEGO — More than 400,000 cases of pulmonary thromboembolism are missed by doctors every year in the United States.

Over the past few years, it has become clearer why many of those cases are missed and how they could be diagnosed, Dr. Daniel J. Sullivan said at a congress of the American College of Emergency Physicians.

Most often, the patient has an abnormal vital sign that should alert the emergency physician to the possibility of pulmonary embolism (PE), but that single, critical sign sometimes is missed in the complexity of the situation, said Dr. Sullivan, a faculty member in the department of emergency medicine at Rush Medical College, Chicago.

“Syncope, dyspnea, rapid pulse, risk factors such as immobilization—please think PE,” he said. “Every case seems to have good clues.”

Dr. Sullivan presented two cases to illustrate his point. The first case involved a nurse who came into the emergency department (ED) complaining of pain, redness, and possible infection of a wound on her leg.

She had been in a car accident 2 weeks before. In the accident, she sustained two fractures of the arm, a dislocated hip, and a laceration on the shin. In the patient history, the examining physician noted that the patient had a closed reduction of a hip fracture and had spent a week in the hospital before being discharged 1 week earlier.

The patient’s initial vital signs were a temperature of 98.3° F and blood pressure of 140/80 mm Hg. Most important, her respiratory rate was 20 breaths per minute, and her pulse was 88 beats per minute.

Her respiratory rate was the clue the physician overlooked, Dr. Sullivan cautioned, together with the fact that her history said she had had hip surgery recently—and thus had spent time immobilized. In addition, the patient arrived in a wheelchair.

Instead, the physician focused on her complaint about her leg. He assumed he saw signs of cellulitis, and treated that with no further work-up.

The patient went home, only to develop respira-

tory distress 12 hours later. She was brought back to the ED and died of a massive pulmonary embolism.

The second case Dr. Sullivan outlined was like the first, in that the history should have given the clinician pause.

The patient in the second case was a 55-year-old obese woman who came to the emergency department complaining of nausea, vomiting, and diarrhea that had continued for 4 days.

When the patient arrived at the ED, both the triage nurse and the examining physician noted that they saw no specific signs of illness—the patient’s color was good, and she had no upper airway congestion, chest pain, sweating, or cyanosis. Her abdominal exam was normal, her laboratory tests were normal, and a chest x-ray showed nothing.

However, the physician did note that the patient was in moderate distress. The patient’s respiratory rate, noted by the triage nurse, was 34 breaths per minute. But the nurse recorded that as a normal rate, and nobody questioned it. Moreover, the patient’s pulse was 96 beats per minute, and her temperature was not very high, at 100° F.

The medical history taken in the emergency department did not include the fact that the patient had had a prior PE. That was a fatal error, Dr. Sullivan continued, because the medical history did say that she was obese and had a clinical picture that did not really fit an infection.

When the woman became short of breath before leaving the emergency department, no one informed the physician. She collapsed and died as she was leaving the hospital.

In both of the cases, the patients’ breathing and/or vital signs offered warnings that should have prevented premature diagnosis, Dr. Sullivan said.

One particularly tricky situation occurs when the patient might have pneumonia or some other infection, he cautioned. In cases that turn out to involve pulmonary embolism, patients often have a pulse that is too high and a temperature that is only mildly elevated. That combination should always raise a red flag for possible PE, Dr. Sullivan said. ■