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**Citation:** *The Journal of Thoracic and Cardiovascular Surgery*, “In the current era, complete revascularization improves survival after coronary artery bypass surgery.”

#### **HIGHLIGHTS:**

When a patient has several coronary arteries blocked, heart surgeons should attempt to restore blood flow to all affected areas of the heart, and they should use arteries, not veins, to serve as conduits. These factors significantly impact long-term survival rates, according to a new study. The cardiothoracic surgeon directing the research urges surgeons “to try to graft all affected territories and to use arterial grafts whenever possible.” Noting that there are a number of variables in the way open-heart operations can be performed, he encourages patients to become more involved in their care by understanding the choices and asking questions.

#### **RESTORING FLOW TO ALL BLOCKED AREAS OF THE HEART IMPROVES 5-YEAR SURVIVAL RATE, STUDY SAYS**

**LOS ANGELES** (June 17, 2005) – Pointing out that not all coronary artery bypass operations are performed the same way or have equivalent outcomes, cardiothoracic surgeons at Cedars-Sinai Medical Center have found that patients who have blockages of multiple coronary arteries and undergo “complete revascularization” – grafting of arteries to restore blood flow to all affected territories of the heart – have consistently better long-term survival rates than those who have “incomplete revascularization.”

The findings are based on a review of 1,034 patient cases with five-year follow-up, and are reported in the current issue of *The Journal of Thoracic and Cardiovascular Surgery*.

“Our study centered on the various factors that make for the most successful coronary artery bypass operation, and we were looking not only at in-hospital survival but five-year survival,” said Wen Cheng, M.D., the cardiothoracic surgeon who led the study. “Although most survival studies are based on immediate outcomes, this is not the whole picture. We should be emphasizing long-term survival. What are the results going to be after five years or more? Is the patient going to need another intervention? And the most important thing: Is the patient going to be alive?”

The study found that patients have significantly better long-term outcomes when surgeons place a bypass graft to all the territories of the heart that have significantly blocked arteries. Taking into consideration the various risk factors from one group of patients to another, incomplete revascularization clearly increased the chance of death within five years of bypass surgery. In fact, there was a 70 percent increase in the chance of death from any cause, and an 85 percent increase in the chance of dying of a cardiac-related disorder if a patient received incomplete revascularization.

“The benefit of complete revascularization makes intuitive sense, and this study supports that. But many of the procedures that are being performed today result in only incomplete revascularization,” Cheng said.

(more)

“According to one recent study, for example, complete revascularization was achieved in only 74 percent of patients undergoing percutaneous intervention (balloon angioplasty and stenting) and in only 82 percent of those undergoing coronary artery bypass surgery.”

The Cedars-Sinai study also found that long-term survival increased when arteries, not veins, were used in grafting. Especially in the early days of bypass operations, saphenous veins from the legs were used to replace blocked coronary arteries. But in the past few years, many surgeons have abandoned veins for arteries of the chest and arm.

“It is much easier to harvest and work with veins, but, unfortunately, veins do not last forever,” said Cheng. “Arteries are naturally better able to carry blood under arterial pressure than veins, and while arterial grafting is technically more difficult to accomplish, requiring a higher level of skill, it was the best choice for our patients.”

Results of the study are based on a review of the quality assurance database for patients who underwent coronary artery bypass grafting between January 1998 and January 2000 at Cedars-Sinai. Over the course of its nearly 35-year history, the medical center’s Division of Cardiothoracic Surgery has compiled a database of about 25,000 patient outcomes.

“In this study, we tried to look at every possible factor – individually and in combination with hundreds of other factors – that might affect whether a patient lives or dies in five years,” Cheng said. “Many things did not matter one way or another, but several factors did make a significant difference. Notably, patients who had complete revascularization did better than those who had incomplete revascularization, and patients who had arterial grafting did better than those who had venous grafting. Based on these findings, we encourage heart surgeons to try to graft all affected territories and to use arterial grafts whenever possible.”

Cheng also urges patients to learn more about the fundamentals of heart surgery and recognize that surgeons are faced with a number of choices in each case. There are many ways to perform an operation, but different approaches may have different outcomes.

“When I have a patient in my office and we say, ‘You’re going to need surgery,’ they hear nothing else,” he said. “To the patient, the big decision is surgery or no surgery. Once that decision is made, they assume one operation is the same as another. But we’re saying there’s more to it than that. You can trust your surgeon but still ask questions. In fact, patients can be more proactive and confident in their care if they understand the basics. What operation are you planning for me? Which vessels are you planning to treat? And what kind of grafts are you using?”

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One of only five hospitals in California whose nurses have been honored with the prestigious Magnet designation, Cedars-Sinai Medical Center is one of the largest nonprofit academic medical centers in the Western United States. For 17 consecutive years, it has been named Los Angeles’ most preferred hospital for all health needs in an independent survey of area residents. Cedars-Sinai is internationally renowned for its diagnostic and treatment capabilities and its broad spectrum of programs and services, as well as breakthroughs in biomedical research and superlative medical education. It ranks among the top 10 non-university hospitals in the nation for its research activities and was recently fully accredited by the Association for the Accreditation of Human Research Protection Programs, Inc. (AAHRPP). Additional information is available at [www.cedars-sinai.edu](http://www.cedars-sinai.edu).

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