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News

STS Press Release

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Durability of Open Heart Surgery Offers Younger Patients Superior Long-Term Results ***Study challenges validity of stenting as the go-to approach for treating coronary artery disease***

FORT LAUDERDALE, FLORIDA (January 30, 2018) — Younger patients with severe coronary artery disease may experience better long-term outcomes when they are treated with coronary artery bypass grafting (CABG) instead of more popular and less invasive stenting procedures, according to a scientific presentation at the 54th Annual Meeting of The Society of Thoracic Surgeons.

“This trial is unique in that we have studied young patients whose long-term outcomes are especially important to ascertain,” said senior author Wael Awad, MD, of St. Bartholomew’s Hospital, London, United Kingdom. “An increasing number of these patients with coronary artery disease are being offered stents primarily. This study shows that they may be better off with CABG.”

Dr. Awad and colleagues examined data from 100 patients who received stents (percutaneous coronary intervention [PCI]) and 100 patients who underwent CABG. All patients were younger than age 50. The operations were performed between January 2004 and December 2004 at the London Chest Hospital, and then followed at intervals of 5 and 12 years. Follow-up information was collected from clinical notes and telephone surveys with patients or their general practitioners in December 2009 and again in December 2016.

PCI is a nonsurgical procedure that uses a thin, flexible catheter placed through the skin into an artery in the groin or arm. A balloon on the end of the catheter is positioned in the narrowed coronary artery and inflated to open up the blockage. A stent is a metal mesh tube that is left behind to help keep the artery from collapsing. Drugs attached to the stent help prevent the body from reacting to the stent and shutting down the artery again. CABG, which is the most commonly performed heart operation in the United States, is designed to bypass the blockages in the coronary arteries in order to create a new path for blood flow to the heart. With CABG, the surgeon removes a healthy blood vessel, usually from the leg, arm, chest, or abdomen, and connects it to other arteries (usually the aorta) in the heart. This enables blood flow to “bypass,” or go around, the diseased or blocked portion of the coronary artery.

KEY POINTS

- CABG should be the preferred method of revascularization in young patients with more severe coronary artery disease.
- Stenting is less invasive than CABG, but associated with repeated hospital visits and reinterventions.
- Physicians and surgeons should work together closely to determine specific revascularization strategies for each patient.

The researchers compared the two patient groups, looking closely at the rates of myocardial infarction (MI; heart attack), repeat revascularization, and total major adverse cardiovascular and cerebrovascular events (MACCE). At the 5-year follow-up, all of these rates were significantly greater in the PCI group compared to the CABG group: MI was 9% vs. 1%, respectively; repeat revascularization was 31% vs. 7%, respectively; and MACCE was 34 vs. 13, respectively. Similarly, at the 12-year follow-up, the rates of the PCI group were considerably higher than those of the CABG patients.

The extent and severity of coronary artery disease was important in this study. When researchers examined data from patients with one- or two-vessel coronary artery disease, they found no differences in the rates of death, MI, stroke, repeat revascularization, or MACCE. However, in patients who had more extensive, three-vessel disease, these rates were significantly higher in the PCI group compared to the CABG: MI was 47.6% vs. 19.2%, respectively; repeat revascularization was 66.7% vs. 20.5%, respectively; and MACCE was 19 in 21 patients vs. 31 in 78 patients, respectively.

“Despite the less invasive nature of PCI, this is yet another example where the important advantages of coronary bypass surgery make it the most effective therapy for the treatment of extensive coronary artery disease,” said Robbin G. Cohen, MD, MMM, Associate Professor of Cardiothoracic Surgery at the Keck/University of Southern California School of Medicine in Los Angeles, who was not directly involved in this study. “This is especially important in younger patients whose futures rely on their long-term outcomes.”

Both revascularization strategies are feasible, according to the researchers. PCI is less invasive but associated with repeated hospital visits and repeat procedures, whereas CABG is more invasive but also more durable, making it the better option for patients with severe coronary artery disease, especially in the long term.

“Our findings support CABG as the preferred method of revascularization in young patients with three-vessel disease,” said Dr. Awad. “PCI is reasonable and as safe as CABG in young patients, but this should be reserved for patients with single or two-vessel disease. Patients with more extensive coronary artery disease should be offered surgery.”

Dr. Awad recommended a heart team approach where surgeons, cardiologists, and other health care professionals meet to discuss all options for patients who require procedures for coronary disease. Following that meeting, the patient should be advised of the recommended approach for his/her individual case and meet with a surgeon to be fully informed about the advantages and disadvantages of the procedures.

“Patients, especially younger ones, are increasingly opting for less invasive procedures,” said Dr. Awad. “By providing them with all of the facts, they can make informed decisions about their treatments. It is important that patients ask questions and are fully involved in their treatment.”

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The other authors of the study were AM Shafi, AA Dhanji, and A Habib.

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Founded in 1964, The Society of Thoracic Surgeons is a not-for-profit organization representing more than 7,100 cardiothoracic surgeons, researchers, and allied health care professionals worldwide who are dedicated to ensuring the best possible outcomes for surgeries of the heart, lung, and esophagus, as well as other surgical procedures within the chest. The Society's mission is to enhance the ability of cardiothoracic surgeons to provide the highest quality patient care through education, research, and advocacy.