



ASE American Society of
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LACK OF ADHERENCE TO GUIDELINES FOR SEVERE AORTIC STENOSIS LEAVE SYMPTOMS UNIDENTIFIED AND PATIENTS WITH LIFE-THREATENING HEART CONDITIONS UNTREATED

More than 75 percent of patients studied did not have aortic valve replacement surgery even though they met established criteria

WASHINGTON, DC – JUNE 8, 2009 – Symptoms of severe aortic stenosis are under-diagnosed, preventing patients from receiving potentially life-saving aortic valve replacement surgery, according to research unveiled at the 20th Annual Scientific Sessions of the American Society of Echocardiography (ASE). By using cardiovascular ultrasound and other objective tests, physicians can more accurately diagnose symptoms of severe aortic stenosis and help prevent the rapid progression of the disease.

Aortic stenosis is a heart valve condition in which the aortic valve, the main valve that directs blood flow to the rest of the body, is narrowed and deformed. Symptoms of this condition may include shortness of breath, chest discomfort and fainting spells. This study was designed to determine the proportion and characteristics of patients with severe aortic stenosis who do not undergo aortic valve replacement surgery, to determine why those patients are not being referred for the procedure, and to determine the frequency of stress testing to identify patients who would benefit from the procedure.

For this research, physicians examined 106 patients and found that only 25 percent with severe aortic stenosis (AS) were referred for surgery. The other 75 percent did not have valve replacement (AVR) surgery even though they met echocardiographic criteria (AVA < 1.0 cm², aortic valve gradient > 40 mmHg). Of the patients who did not have surgery, 42 percent were symptomatic. The most common reason patients with symptomatic, severe AS did not receive AVR was because symptoms were thought to be unrelated to AS. Fifteen percent of those patients later died.

“It is well known that severe aortic stenosis is a life-threatening condition,” said Dr. Benjamin H. Freed of the University of Chicago Medical Center, a lead author of the study. “Patients are not being referred for aortic valve replacement surgery because symptoms of aortic stenosis are not being identified or are not attributed to aortic stenosis. As a result, surgery in these patients is frequently delayed or not performed. This could be resolved by using objective tests, such as calcium assessment with echocardiography to diagnose symptoms and predict rapid progression of the disease.”

Patients with suspected aortic stenosis should talk to their doctors about whether they need an echocardiogram or other diagnostic tests. Patients with existing aortic stenosis should monitor their conditions carefully and if their conditions become severe, they should discuss their options for aortic valve replacement surgery with their doctors.

The research was conducted by Benjamin H. Freed, Roberto M. Lang, Lissa Sugeng, Kathleen Furlong, and Valluvan Jeevanandam at the University of Chicago in Chicago, Illinois.

The American Society of Echocardiography (ASE) is a professional organization of physicians, cardiac sonographers, nurses and scientists involved in echocardiography, the use of ultrasound to image the heart and cardiovascular system. The organization was founded in 1975 and is the largest international organization for cardiac imaging. For more information on ASE, visit www.asecho.org or ASE's Public Information site, www.SeeMyHeart.org.

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**NONSURGICAL OPTION FOR COMMON HEART PROCEDURE OFFERS
EFFECTIVE RESULTS WITH LESS RECOVERY TIME FOR PATIENTS**

Technique presents options to elderly patients who may not survive open-heart surgery

WASHINGTON, DC – JUNE 8, 2009 – Patients unable to undergo open-heart surgery may be candidates for a new nonsurgical aortic valve replacement procedure, according to a study presented at the 20th Annual Scientific Sessions of the American Society of Echocardiography (ASE). Transcatheter aortic valve replacement is a promising new treatment for patients with severe aortic stenosis who are considered high risk for conventional surgical aortic valve replacement.

With this approach, echocardiography, or heart ultrasound, is used to guide interventional cardiologists through the procedure and to assess the effects of intervention after the procedure. While this study showed promising results, the Food and Drug Administration (FDA) has not yet approved transcatheter procedures for aortic valve replacement.

“Some people with severe aortic stenosis, or narrowing of the aortic valve, are not good candidates for open-heart surgery because they may have other medical conditions that would classify them as high risk for surgery,” said Dr. Linda D. Gillam of the Columbia University Medical Center in New York, a lead author on the study. “This less invasive approach proved to be as effective as surgical aortic valve replacement with the patients in the study and can be done in a cath lab with less stress to the patient and a shorter recovery period.”

A total of 24 patients with symptomatic aortic stenosis underwent successful transcatheter aortic valve replacement or surgical aortic valve replacement during the study. There were no significant baseline differences between the two approaches. The study concluded that transcatheter and surgical aortic valve replacement result in comparable improvements in radial strain, strain rate and left ventricular ejection fraction in elderly patients with severe symptomatic aortic stenosis.

“People in their 80’s have a 5-10 percent mortality rate when undergoing surgery for aortic valve replacement,” Gillam said. “These findings are especially critical for elderly patients who could not survive open-heart surgery.”

The study was conducted by Kotaro Arai, Eiichi Hyodo, Rebecca T. Hahn, Weihong Li, Kohei Fujimoto, Roy Pizzarello, Susheel Kodali, Mathew Williams, Martin B. Leon, Shunichi Homma, and Linda D. Gillam at Columbia University Medical Center in New York, NY.

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STUDY SHOWS DOCTORS CAN BETTER PREDICT SURVIVAL CHANCE FOR HEART PATIENTS WITH NEWER IMAGING TECHNOLOGY

*Study finds 3-D echocardiography serves as a stronger predictor of patient outcomes
than 2-D*

WASHINGTON, DC – JUNE 8, 2009 – Physicians can better predict potentially life-threatening cardiac events with real-time, three-dimensional echocardiography technology, according to a study released at the 20th Annual Scientific Sessions of the American Society of Echocardiography (ASE) in Washington, DC.

Physicians can use echocardiograms, or heart ultrasounds, to view the heart's left ventricular end systolic volume (this measurement refers to the volume of blood in the ventricle immediately after the contraction of the heart) and ejection fraction, (a measurement that determines how well the heart is pumping), which determines the severity of the patient's heart condition. The study concluded that 3-D measurements could help guide management decisions on how to best treat the patient and therefore, better predict the patient's chance of survival.

Left ventricular end-systolic volume measured by 2-D echocardiography is an important correlate of survival. The study sought to determine whether 3-D echo was more predictive of outcome than 2-D echo. The study included 535 patients referred for left ventricle assessment. Patients underwent assessment with 2-D and 3-D echocardiography.

Over 4-5 years, cardiac admission, incident heart failure and atrial fibrillation and all-cause mortality information was obtained in 461 of 504 patients with images suitable for measurement. The results showed 48 events (10 percent) including 34 deaths. Larger left ventricular end-systolic volume and lower ejection fraction were associated with worse outcome.

The addition of 2-D echo end-systolic volume increased the association of clinical variables (renal disease, left ventricular impairment and age) with outcome, but 3-D echo end-systolic volume increased the strength of association. Similarly, the incremental value of 2-D echo ejection fraction was exceeded by 3-D echo ejection fraction.

“Three-dimensional echocardiography addresses some of the limitations that existed in two-dimensional echo,” said Dr. Carly Jenkins, of the University of Queensland in Woolloongabba, Australia, a lead author of the study. “This study proves that 3-D technology has a better diagnostic value for predicting patient outcomes with regard to left ventricular volume and ejection fraction. By using the newer technology, physicians can make better decisions about patient management.”

The study was conducted by Carly Jenkins, Tony Stanton and Thomas H. Marwick at University of Queensland in Woolloongabba, Australia.

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