

Atrial Volume, Ventricular Shape Predict Mortality

BY MITCHEL L. ZOLER
Philadelphia Bureau

TORONTO — Increased left-atrial volume and abnormal left-ventricular geometry were each independent predictors of death among elderly patients with preserved systolic heart function in a study with more than 11,000 subjects.

The findings suggest a potential role for left-atrial volume index and assessment of left-ventricular geometry when evaluating elderly patients, Dr. Dharmendrakumar A. Patel said at the 14th World Congress on Heart Disease. Both parameters are measured by echocardiography.

A high left-atrial volume index may be an indicator of diastolic dysfunction, said Dr. Patel, a researcher at the Ochsner Clinic in New Orleans. But as of today, no interventions have proved to reduce left-atrial volume and thereby improve prognosis.

His study used echo results from 11,039 patients aged older than 70 years (average age 78 years) who were referred for an echocardiographic examination at the Ochsner Clinic during 2004-2006. All of the patients had a left-ventricular ejection fraction of at least 50%, and their average ejection fraction was about 60%. None of the patients had severe valve disease.

During an average follow-up of 1.6 years, 1,531 of the patients (14%) died.

Analysis of mortality by left-atrial volume index showed that the patients in the quartile with the largest left atria had a 19% mortality rate, significantly higher than the 11% death rate among the patients in the quar-

tile with the smallest left atria. (See box.) The average left-atrial volume index was 32.5 mL/m² among the patients who survived during follow-up, and 35.7 mL/m² among the patients who died, a statistically significant difference, Dr. Patel said at the congress, sponsored by the International Academy of Cardiology.

Patients with abnormal left-ventricular geometry also had worse survival, compared with those with normal geometry. The mortality rate during follow-up was 12% among those with normal left-ventricular geometry at baseline (about 50% of all people in the study), compared with 19% mortality among the 5% of patients with concentric, left-ventricular hypertrophy at baseline, the geometry that carried the highest mortality risk. Patients with concentric remodeling and those with eccentric hypertrophy also had significantly increased death rates, about 15%-16%, during follow-up.

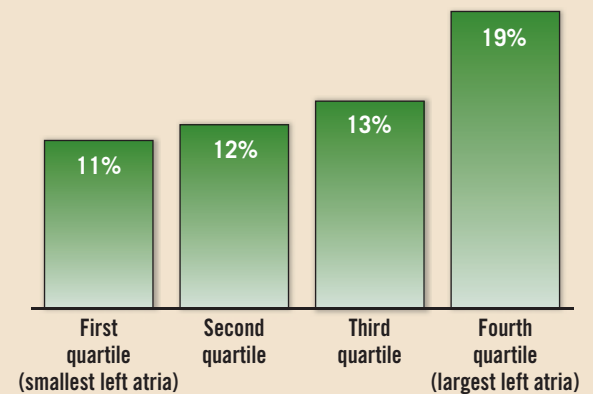
A multivariate analysis showed that left-atrial volume index and abnormal left-ventricular geometry were significant, independent factors that contributed to mortality in these patients. Other significant mortality determinants were age, gender, body mass index, and left-ventricular ejection fraction.

An additional analysis further documented the additive risk posed by the two echo parameters that Dr. Patel studied. Among the quartile of patients with the highest left-atrial volume index, those who also had a left ventricle with a con-

centric, hypertrophic shape had a strikingly high, 50% mortality rate during follow-up, he reported.

A limitation of this study was that it included only people who had been referred for an echocardiography examination, presumably because of a suspected cardiovascular disorder. In addition, Dr. Patel did not have information on the causes of death nor on the prevalence of comorbidities, such as hypertension and coronary artery disease.

Mortality Higher in Patients With Larger Left Atria



Note: Based on data for 11,039 patients with an average age of 78 years.
Source: Dr. Patel

Nocturnal BP Patterns Altered With Obesity

BY SHARON WORCESTER
Southeast Bureau

NEW ORLEANS — Obesity blunts the normal pattern of nocturnal blood pressure dipping, and this might be one mechanism through which obesity contributes to adverse cardiovascular outcomes, findings from a recent study suggest.

Blood pressure normally drops by 10%-20% at night during sleep, compared with blood pressure during waking hours during the day, and studies have shown that nondipping (defined as less than a 10% decrease in blood pressure at night) is associated with increased cardiovascular morbidity and mortality, Dr. Otello Randall reported in a poster at a meeting sponsored by the International Society on Hypertension in Blacks.

In the study, hourly blood pressure measurements were taken in 200 obese African American patients who were classified into three groups on the basis of their body mass index, in kg/m²: less than 40, 40-49.9, and at least 50. The average age of the patients was 47 years, and most (83%) were women.

The researchers found that as BMI increased, so did the rates of nocturnal nondipping. The rates of nondipping were 26%, 41%, and 76% for the three BMI categories, respectively. Additionally, 36% of the patients were "reverse dippers," meaning their blood pressure actually increased at night, reported Dr. Randall, professor of medicine and cardiology at Howard University, Washington.

The mean percentage of dipping was 8.6% in those with a BMI of less than 40, 8.4% in those with a BMI of 40-49, and 3.9% in those with a BMI of 50 or greater. Those with a BMI of at least 50 had a significantly smaller decrease in nocturnal blood pressure than the other two BMI groups. Daytime blood pressure for this study was defined as the average of hourly readings between 8 a.m. and 10 p.m., and nighttime blood pressure was defined as the average of hourly readings from 10 p.m. to 6 a.m.

"Nondipping and reverse dipping are known to be associated with the potential risk for target organ damage. The high rates of nondipping and reverse dipping in this obese population reinforces the need to reduce BMI and improve hemodynamic and lipid profiles through lifestyle changes," Dr. Randall said.

Omega-3 Fatty Acid Use Is Associated With Reduced Risk for New Atrial Fib

BY MITCHEL L. ZOLER
Philadelphia Bureau

TORONTO — Patients with cardiovascular disease on an oral regimen of omega-3 fatty acid had a 73% reduced risk for developing atrial fibrillation in a retrospective, observational study of more than 11,000 patients.

Although the study controlled for identified confounding factors, it cannot be considered definitive because it involved an uncontrolled, retrospective study, Brian J. Barnes, Pharm.D., and his associates reported in a poster at the 14th World Congress on Heart Disease.

In addition, the analysis did not include information on the dosages of omega-3 fatty acids taken or the duration of treatment. "The optimal dose of omega-3 fatty acid to prevent atrial fibrillation is unknown," Dr. Barnes and his associates said in their poster. The new finding warrants a prospective study to better document the impact of omega-3 fatty acid on the incidence of new-onset atrial fibrillation, they said.

The study included 11,360 patients with cardiovascular disease who were seen in the cardiology service during 2005-2007 at the University of Kansas Medical Center, Kansas City. The review excluded patients who had atrial fibrillation before starting treatment with omega-3 fatty acid, as well as patients with incomplete echocardiography data.

The study group included 8,760 patients with no omega-3 fatty acid exposure (77%), and 2,600 with exposure (23%). The patients who received omega-3 fatty acid were older (average age 66 years) than those with no exposure (average age 63 years), and

also sicker, with a higher prevalence of coronary disease (57%, compared with 29%), and diabetes (23%, compared with 19%), and higher rates of using other cardiovascular drugs such as statins, aspirin, and ACE inhibitors. But an enlarged left atrium (more than 4 cm) was more common among the patients not on omega-3 fatty acid (75%) than in the patients taking omega-3 fatty acid (61%).

During follow-up, the rate of new atrial fibrillation was 23% among patients not taking an omega-3 fatty acid, and 9% among those on an omega-3 fatty acid, said Dr. Barnes, a researcher in the department of pharmacy practice.

In a multivariate model that included all of the known differences between the two groups at baseline, omega-3 fatty acid use was linked with a statistically significant, 73% reduction in the rate of new atrial fibrillation, said the researchers at the congress, which was sponsored by the International Academy of Cardiology. Other variables linked with a reduced risk for atrial fibrillation were statin use (linked with a 24%

risk reduction), and a history of diabetes (linked with a 15% risk reduction). Variables linked with an increased risk for atrial fibrillation included age of 60 years or older, which boosted the risk about 3.4-fold, compared with patients aged 30-45 years; valvular disease, which raised the risk by 75%; an enlarged left atrium, which raised the risk by 33%; and male gender, which raised the risk by 17%.

Possible mechanisms by which treatment with omega-3 fatty acid might cut the risk for atrial fibrillation include anti-inflammatory and anti-arrhythmic effects.

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