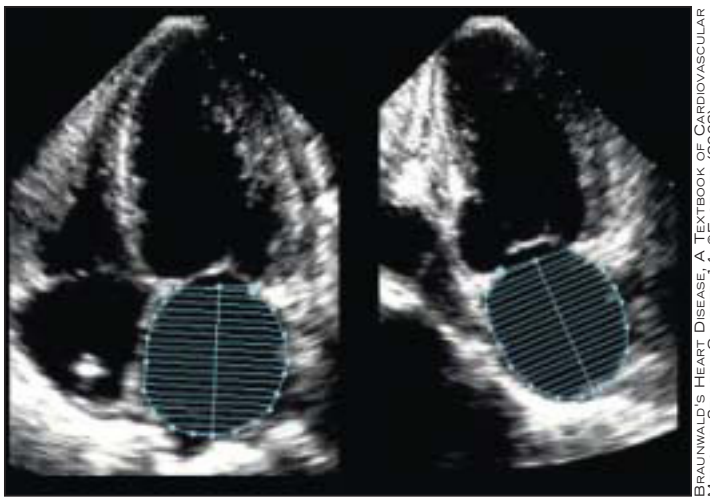

Braunwald's Heart Disease, A Textbook of Cardiovascular Medicine, 8th ed., Chapter 14, © Elsevier (2008)

**In elderly patients with preserved systolic heart function, left-atrial volume, shown in four-chamber (left) and two-chamber apical (right) views, predicted death. Abnormal left-ventricular geometry was also found to be a predictor.**

# Left Heart Shape and Size Are Risk Indicators in Elderly

BY MITCHEL L. ZOLER
*Philadelphia Bureau*

TORONTO — Increased left-atrial volume and abnormal left-ventricular geometry were each independent predictors of death in elderly patients with preserved systolic heart function in a large study.

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 older than 70 years (average age 78 years) who were referred for an echocardiographic examination at the Ochsner Clinic in 2004-2006. All patients had a left-ventricular ejection fraction of at least 50%, and their average ejection fraction was about 60%. In an average follow-up of 1.6 years, 1,531 patients (14%) died.

**A high left-atrial volume index may be an indicator of diastolic dysfunction. But there is no current treatment for it.**

**DR. PATEL**

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 in the patients in the quartile with the smallest left atria. The average left-atrial volume index was 32.5 mL/m$^2$ in the patients who survived during follow-up, and 35.7 mL/m$^2$ in the patients who died, a 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% in those with normal left-ventricular geometry at baseline (about 50% of all participants), compared with 19% mortality in 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.

Multivariate analysis showed that left-atrial volume index and abnormal left-ventricular geometry were significant, independent factors contributing to mortality. Other significant determinants were age, sex, BMI, and LVEF.

An additional analysis showed that of the quartile of patients with the highest left-atrial volume index, those who also had a left ventricle with a concentric, hypertrophic shape had a strikingly high 50% mortality rate during follow-up.

A limitation of this study was that it included only people who had been referred for cardiac echocardiography. Dr. Patel also did not have information on causes of death or the prevalence of comorbidities. ■