Medical Xpress

Size matters: Obesity leading risk factor of left atrial enlargement during aging

November 9 2009

Aside from aging itself, obesity appears to be the most powerful predictor of left atrial enlargement (LAE), upping one's risk of atrial fibrillation (the most common type of arrhythmia), stroke and death, according to findings published in the November 17, 2009, issue of the *Journal of the American College of Cardiology*.

This prospective study—the first to evaluate factors affecting left atrial remodeling during aging over 10 years—found obesity and hypertension to be independent predictors of LAE, both resulting in a variety of structural and functional changes in the heart. The highest measures of left atrial volume (iLA) were seen in obese patients with high blood pressure; this group also had the greatest increase in iLA (+6ml/m) and the highest incidence of LAE upon follow-up (31.6 percent compared to baseline prevalence of 10 percent among all participants). In linear regression models, the effect of obesity was almost twice that of hypertension.

Results of the present study also suggest that LAE in obese and hypertensive patients may be caused by different physiological mechanisms. In individuals with high blood pressure, the heart has to deal with greater pressure, which results in a thickening of the walls of the left ventricle. This change also affects the left atrium as the pressure in this chamber ultimately increases as well as resulting in enlargement and loss of function of the atrium. The mechanisms by which obesity might promote the increased size of the left atrium are seemingly more complex than with hypertension. Obese subjects may undergo dilatation

of this chamber because of the cardiac output; that is, the blood that is transported by the heart every minute is increased. Subsequently, these alterations may lead to a volume overload in the left atrium.

The present data further confirm the strong relation of obesity and LAE reported in previous studies, some of which have shown that excess weight appears to impact left atrial size even at a very early age, potentially predisposing young obese individuals to future cardiovascular problems. Amid the growing obesity epidemic, authors stress the importance of early assessment and intervention, especially in younger obese patients to prevent the premature onset of cardiac remodeling—changes in size, shape, and function of the heart—resulting from LAE. Authors caution that the extent to which weight management or moderate weight loss can improve LAE remains unclear and needs further investigation.

Study participants included 1,212 men and women aged 25 to 74 years old who were followed between October 1994 and June 1995. Baseline data were obtained from a survey of the population-based Monitoring of Trends and Determinations in cardiovascular Disease (MONICA) study in Germany. Left atrial volume was determined by an echocardiogram at baseline and again after 10 years. All participants underwent blood pressure screening and an interview related to personal medical history, lifestyle and health behavior. Obesity was defined as body mass index (BMI) ≥ 27.3 kg/m^2 in men and 27.8 kg/m^2 in women.

Source: American College of Cardiology (news : web)

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