Diastolic Dysfunction Prevalence Rises With Age

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The prevalence of diastolic dysfunction increases as people age, even among healthy adults, according to a longitudinal study.

Results of the study add to the findings of previous cross-sectional community studies that diastolic dysfunction is highly prevalent in older adults, demonstrating that during 10 years of follow-up, middle-aged and elderly people were nearly three times more likely to show deteriorating diastolic function than improving diastolic function.

"That diastolic dysfunction worsened even in healthy persons supports the concept that aging may be accompanied by progressive deterioration in diastolic function. This age-related progression of diastolic dysfunction in the population contributes to the pathophysiologic substrate from which overt heart failure emerges," said Dr. Garvan C. Kane of Mayo Clinic and Medical School, Rochester, Minn., and his associates.

Previously, the investigators had performed two cross-sectional analyses of diastolic function in community residents aged 45 and older participating in the Olmsted County Heart Function Study in 1997-2000 and again in 2001-2004. They now report the results of 6 years of further follow-up of a subset of 1,402 of these subjects, which tracked within-patient changes in diastolic function over time.

In all, 90% of the study subjects were white, and 81% lived in urban settings.

Over time, 23% of subjects showed progression of diastolic dysfunction, compared with only 9% who showed improvement in diastolic dysfunction. The remaining 68% of subjects showed no change in diastolic dysfunction.

"A similar pattern of worsening diastolic function also was observed in a subset of [531] healthy participants" who had been free of hypertension, diabetes, coronary artery disease, and heart failure at baseline. About 20% showed worsening diastolic function, compared with 5% who showed improvement in diastolic dysfunction over time. The remaining 75% showed no change in diastolic dysfunction.

"However, to put diastolic dysfunction in context, it should be noted that only about 1 in 4 persons with moderate or severe diastolic dysfunction at examination 2 developed incident heart failure during follow-up. This suggests that superimposed clinical events play an important role in the transition from asymptomatic diastolic dysfunction to overt heart failure with preserved LVEF [left ventricular ejection fraction]," Dr. Kane and his colleagues said (JAMA 2011;306:856-63).

"Specifically, our findings are consistent with the hypothesis that a combination of cardiovascular aging and superimposed cardiovascular disease accelerates the deterioration in diastolic function, setting the stage for symptomatic heart failure with preserved LVEF in elderly persons," they noted.

It follows that preventing such superimposed events by addressing risk factors, particularly hypertension, "might be fundamental to reducing heart failure with preserved LVEF," they added. ■

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Major Finding: Over time, 23% of study subjects showed progression of diastolic dysfunction, compared with only 9% who showed improvement in diastolic dysfunction; in a subset of healthy subjects, 20% showed progression of diastolic dysfunction, compared with only 5% who showed improvement.

Data Source: A population-based cohort study involving 1,402 older adults whose heart function was followed for 4 years and again for an additional 6 years.

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