

Stress-Related Behaviors Increase Heart Risk

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Psychological distress is a significant driver of cardiovascular disease, mostly because of poor health behaviors associated with chronic stress, according to the findings of a prospective study.

Psychologically distressed individuals were at a significantly elevated risk of having a stroke, heart attack, and invasive cardiovascular interventions. And the relationship between stress and cardiovascular disease, in particular, was a linear one. However, most of the relationship between distress and disease was apparently caused by poor health behaviors, Mark Hamer, Ph.D., of University College London, and his colleagues reported.

“Our data suggest that the behavioral factors of smoking and physical activity made the largest contribution to increased risk, with C-reactive protein and hypertension making a modest contribution,” the investigators wrote (*J. Am. Coll. Cardiol.* 2008;52:2156-62).

The team analyzed data from the Scottish Health Survey, a national survey that includes a representative sample of all households in Scotland. The analysis included data from the 1998 and 2003 cohorts of 6,576 adults aged 30 years and older, none of whom had cardiovascular disease at baseline. The baseline assessment included demographics, health behaviors, and a 12-item measure of psychological distress.

The mean follow-up time was 7 years; measured outcomes (MI, coronary artery bypass, percutaneous coronary angioplasty, stroke, and heart failure) were assessed from records contained in the national patient database.

At baseline, 15% of participants were classified as psychologically distressed. Compared with nondistressed individuals, they were younger and more likely to be female, to have poorer health behaviors, to have hypertension, and to have higher levels of inflammatory and hemostatic markers.

A multivariate analysis determined that smoking, physical activity, alcohol consumption, C-reactive protein, and hypertension were significantly associated with being psychologically distressed.

After 7 years, there were 223 cardiovascular events; 63 were fatal. Psychologically distressed individuals were 54% more likely to have experienced an event than were nondistressed participants. With every standard deviation increment in the health questionnaire score indicating psychological distress, the investigators found a 7% increase in the risk of an event, even after adjusting for age and gender.

Further analysis concluded that 83% of the association between distress and disease could be explained by health behaviors, inflammatory markers, or hypertension. “When behavioral factors were modeled separately, smoking accounted for 41%, physical activity for 22%, and alcohol for about 2% of the variance,” the investigators wrote.

“The further addition of pathophysiological factors accounted for a further modest proportion of the variance (hypertension explained 13% and CRP, 5%).”

The associations were similar among men and women, although weaker in older participants than in younger ones.

There were 247 deaths of any cause during the follow-up period. The investigators found that participants with psychological distress were 88% more likely than were

nondistressed individuals to have died, even after adjustment for age, gender, and socioeconomic status. The risk was still elevated, although attenuated, after adjustment for behavioral and pathopsychological risk factors (hazard ratio 1.36).

The findings should spur providers to adopt an integrated approach to cardiovascular disease prevention strategies, Dr. Roland von Känel wrote in a commentary (*J. Am. Coll. Cardiol.* 2008;52:2163-5).

“Specifically, behavioral interventions targeting smoking cessation and increasing physical exercise, as well as blood pressure-lowering techniques and inflammation-lowering relaxation techniques, are best delivered in combination with psychotherapeutic and psychopharmacologic means aimed at directly alleviating psychological distress,” wrote Dr. von Känel of the University Hospital Bern (Switzerland). ■

