女性における精神的ストレスの心血管系への有害な作用(Abstract 14860)

心疾患を有する若年女性は感情的ストレスの心血管系への影響を過剰に受けやすい

Young women with heart disease are disproportionally vulnerable to cardiovascular effects of emotional stress

安定冠動脈疾患（CHD）を有する若年女性は、感情的ストレス下に置かれると、男性よりも心筋虚血を生じやすいが身体的ストレスではそうではない、との研究結果が2014年American Heart Association年次集会で発表された。研究者らは安定CHD患者534人に、標準的な精神ストレス検査を施行し、別の日に従来の身体ストレス検査（運動または薬物）を施行した。ストレスと安静時との差から、総虚血性灌流欠損（IPD）の定量的計測が得られた。精神的ストレスに関しては、年齢による性別への有意な影響があった（p=0.001）。55歳以下の女性は精神的ストレスにより同年代の男性と比較し、IPDが3倍以上生じた。55歳以下の女性では心臓への血流が3倍以上減少し、56～64歳では心臓への血流が2倍減少し、65歳以上では心臓への血流には差がなかった。精神的ストレスにより血流に大きな差が生じたのとは対照的に、身体的ストレス下での血流に関しての男女差はなかった。

Full Text

Young women with stable coronary heart disease (CHD) are more likely than men to develop myocardial ischemia if they're under emotional stress, but not physical stress, according to research presented at the American Heart Association's Scientific Sessions 2014.

"Women who develop heart disease at a younger age make up a special high-risk group because they are disproportionally vulnerable to emotional stress," said Viola Vaccarino, M.D., Ph.D., study author and chairwoman of Cardiovascular Research and Epidemiology at Emory University's Rollins School of Public Health in Atlanta, Georgia.

Women generally develop heart disease later in life than men. However, younger women who have premature heart attacks are more likely to die than men of similar age. Risk factors, such as diabetes or high blood pressure, don't explain these mortality differences.

In the study, researchers gave a standardized mental stress test and, on a separate day, a traditional physical stress test (exercise treadmill test or pharmacological stress test) to 534 patients with stable coronary heart disease. For the mental stress protocol, patients were asked to imagine a stressful life situation and deliver a speech about this story in front of a small audience.

Researchers used nuclear imaging to take pictures of the heart while undergoing each of the two stress tests and while at rest. They also monitored heart rate and blood pressure during both mental and physical tests. Then, they analyzed the differences in coronary blood flow based on gender and age. In this manner, the difference between stress and rest provided a quantitative measure of total ischemic perfusion deficit (IPD).

For mental stress there was a significant sex by age interaction (p=0.001). Women ≤55 years had more than threefold IPD with mental stress than men of similar age. Women age 55 and younger had three times greater reduction in blood flow to the heart; age 56-64 had double the reduction in blood flow to the heart; and age 65 and older had no difference in blood flow to the heart. In contrast to the large differences in blood flow observed with mental stress, there was no IPD with physical stress between women and men.

Young and middle-age women may be more vulnerable to emotional stress because they face considerable burden of stressors in everyday life such as managing kids, marriage, jobs and caring for parents, Vaccarino said. Biology may also play a role -- for example, a greater propensity towards abnormal blood vessel function during emotional stress, such as exaggerated constriction of coronary or peripheral blood vessels.

Healthcare providers should be aware of young and middle-age women's special vulnerability to stress and "ask the questions about psychological stress that often don't get asked," Vaccarino said.

"If they note that their patient is under psychological stress or is depressed, they should advise the woman to get relevant help or support from mental health providers, stress reduction programs or other means."

Co-authors are Pratik Pimple, M.B.B.S., M.P.H.; Ernest Garcia, Ph.D.; Jonathon Nye, Ph.D.; Ibhar Al Mheid, M.D.; Kobina Wilmot, M.D.; Ronnie Ramadan, M.D.; Amit Shah, M.D., M.S.C.R.; Paolo Raggi, M.D.; Fabio Esteves, M.D.; Michael Kutner, Ph.D.; Qi Long, Ph.D.; J.D. Bremner, M.D.; and Arshed Quyyumi, M.D.

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