Medical Xpress

Menopause associated with more fat around heart, raising risk for heart disease

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Late- and post-menopausal women have significantly greater volumes of fat around their hearts - a risk factor for heart disease - than their pre-menopausal counterparts, a University of Pittsburgh Graduate School of Public Health study has shown for the first time.

The finding, published online and scheduled for the Sept. 1 issue of *The Journal of Clinical Endocrinology & Metabolism*, likely can be attributed to changing hormone levels and could guide potentially life-saving interventions. The work was funded by the National Institutes of Health (NIH) and American Heart Association (AHA).

"Cardiovascular disease is the leading cause of death in women, and it increases after age 50 - the average age when a woman is going through menopause," said lead author Samar R. El Khoudary, Ph.D., M.P.H., assistant professor in Pitt Public Health's Department of Epidemiology. "By showing that menopause appears to be associated with a shift in fat deposits that leads to more fat around the heart, we've uncovered a new potential contributor to increased risk of cardiovascular disease in women."

Weight gain in women during and after menopause has long been attributed to aging, rather than menopause itself. However, recent research identified changes in body fat composition and distribution due to menopause-related hormonal fluctuations.

No previous study had evaluated whether those changes in fat

distribution during menopause affect cardiovascular fat. Increased and excess fat around the heart and vasculature can be more detrimental than abdominal fat, causing local inflammation and leading to heart disease. Doubling certain types of cardiovascular fat can lead to a more than 50 percent increase in coronary events.

Dr. El Khoudary and her team evaluated clinical data, including blood samples and heart CT scans, on 456 women from Pittsburgh and Chicago enrolled in the Study of Women's Health Across the Nation (SWAN). The women averaged about 51 years of age and were not on hormone replacement therapy.

As concentrations of the sex hormone estradiol - the most potent estrogen - declined during menopause, greater volumes of cardiovascular fat were found. The finding held even after the team took into account the effects of age, race, obesity, physical activity, smoking, alcohol consumption, medication use and chronic diseases.

"Developing prevention strategies to reduce cardiovascular fat in women at midlife may reduce their heart disease risk, especially knowing that the menopausal transition puts women at risk for excess fat around their hearts," said Dr. El Khoudary. "Previous studies suggest that reducing heart fat is feasible through weight loss or weight management, but these studies only looked at small numbers of people and there have been no clinical trials linking cardiovascular outcomes with heart fat changes due to weight management interventions. Clearly there is a need for larger scale studies to determine the best intervention strategies to help post-menopausal women reduce fat near the heart."

Dr. El Khoudary and her research team are working on seeking more funds to evaluate whether cardiovascular fat volumes progress over time in midlife women, and, if so, whether this progression will be associated with greater evolution in atherosclerosis and more cardiovascular events

in post-menopausal women.

Provided by University of Pittsburgh Schools of the Health Sciences