Biomarkers found for postmenopausal cardiovascular disease

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Analysis of blood protein data from the Women's Health Initiative cohorts has revealed new biomarkers for stroke and coronary heart disease (CHD). Research published in BioMed Central's open access journal *Genome Medicine* found that beta-2 microglobulin (B2M) levels were significantly elevated in postmenopausal women with CHD, and insulin-like growth factor binding protein 4 (IGFBP4) was strongly associated with stroke.

Ross Prentice, from the Fred Hutchinson Cancer Research Centre, Seattle, USA, worked with a team of researchers to carry out proteomic analyses on samples from 800 women who developed CHD, 800 who developed stroke and a group of matched controls. He said, "We contrasted pools formed by equal plasma volumes from 100 cases or from 100 pair-matched controls, with eight such pool pairs for each of the study diseases. The two novel markers we identified, B2M and IGFBP4, have the potential to help elucidate hormone therapy effects on the cardiovascular diseases as observed in the WHI randomized controlled trials".

B2M has previously been associated with CHD risk factors including age, blood pressure, and C-reactive protein, and has been reported to show an inverse association with high-density lipoprotein (HDL) cholesterol. According to Prentice, "Our finding of B2M elevation in plasma obtained months or years prior to CHD diagnosis appears to be novel, however". The identification of IGFBP4 as a risk marker for stroke in postmenopausal women also appears to be a novel finding.

Speaking about the results, Prentice said, "Blood protein concentrations provide a source for novel disease risk markers that may be modifiable by treatments or other exposures. As such, protein markers have potential to enhance the understanding of disease pathogenesis, and to elucidate biological processes whereby an exposure affects disease risk."

More information: Novel proteins associated with risk for coronary heart disease or stroke among postmenopausal women identified by in-depth plasma proteome profiling, Ross L Prentice, Sophie J Paczesny, Aaron Aragaki, Lynn M Amon, Lin Chen, Sharon J Pitteri, Martin McIntosh, Pei Wang, Tina Busald Buson, Judith Hsia, Rebecca D Jackson, Jacques E Rossouw, JoAnn E Manson, Karen Johnson, Charles Eaton and Samir M Hanash, Genome Medicine (in press), genomemedicine.com/

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