MedicalXpress

Hormone level linked with increased risk of diabetes, cardiovascular disease, breast cancer, death

October 9 2012

Plasma levels of proneurotensin are associated with the development of diabetes, cardiovascular disease, cardiovascular and total mortality, and breast cancer in women during long-term follow-up, according to a study in the October 10 issue of *JAMA*.

Neurotensin, an amino acid peptide primarily expressed in the central nervous system and gastrointestinal tract, regulates both satiety and breast cancer growth in the experimental setting, but little is known about its role in the development of breast cancer or cardiometabolic disease in humans, according to background information in the article. Proneurotensin is a precursor of the hormone neurotensin.

Olle Melander, M.D., Ph.D., of Lund University, Malmo, Sweden and colleagues conducted a study to test if a fasting plasma concentration of proneurotensin is associated with future risk of diabetes mellitus, cardiovascular disease, breast cancer, and death. Proneurotensin was measured in plasma from 4,632 fasting participants of the population-based Malmo Diet and Cancer Study baseline examination 1991-1994. Various models were used to evaluate the relationship between baseline proneurotensin and first events and death during long-term follow-up until January 2009, with median (midpoint) follow-up ranging from 13.2 to 15.7 years depending on the disease.

Overall, proneurotensin was related to risk of new diabetes,

cardiovascular disease, and cardiovascular mortality, with a significant interaction between proneurotensin and sex on risk of cardiovascular disease. "Exclusively in women, proneurotensin was related to incident diabetes, cardiovascular disease, breast cancer, total mortality, and cardiovascular mortality," the authors write.

The researchers note that the elevation of proneurotensin several years before onset of disease indicates that proneurotensin may be a marker of underlying disease susceptibility rather than an expression of subclinical disease. "As an observational study, our results do not prove any causation between proneurotensin and cardiometabolic disease and breast cancer."

The authors add that the relationships between proneurotensin and all end points were significant in women but not in men; however, because there was only significant interaction between sex and proneurotensin for the outcome of incident cardiovascular disease, it remains to be shown whether the association between proneurotensin and adverse outcome is specific for women.

More information: *JAMA*. 2012;308[14]:1469-1475.

Provided by JAMA and Archives Journals