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Proneurotensin can significantly predict cardiovascular disease and diabetes in females - Malmö Preventive Project

Ayesha Fawad(1), O Melander(2), P Nilsson(3), M Melander(4)

(1) MD/PhD Department of Clinical Sciences, Lund University, Malmö, Sweden

(2) MD/PhD Department of Clinical Sciences, Lund University, Malmö, Sweden

(3) MD/PhD Department of Clinical Sciences, Lund University, Malmö, Sweden

(4) PhD Department of Clinical Sciences, Lund University, Malmö, Sweden

Corresponding author: Dr Ayesha Fawad, Lund University, Medicin, Malmö/Lund, Sweden.

E-mail: ayesha.fawad@med.lu.se

Background and Aims: Neurotensin is a gut hormone and it is released after fat intake. Proneurotensin is a stable fragment of the neurotensin and its fasting levels have shown to be significantly associated with the development of cardiovascular disease and diabetes in middle aged participants of the Malmö Diet and Cancer Study, primarily women. Here, we aimed to replicate the initial findings in an independent cohort with an older population.

Method: Malmö Preventive Project (MPP) is a Swedish population based prospective study which comprised 18240 subjects examined in 2002-2006. Fasting proneurotensin was measured in plasma from a random sample of 5402 participants (Age 69 SD (6,2), 68% Male). Multivariate Cox proportional hazard models adjusted for age, sex, use of antihypertensive medications, systolic blood pressure, BMI, current smoking, high density lipoprotein cholesterol (HDL-C), LDL-C, and fasting blood glucose levels for diabetes were used to relate the log transformed levels of fasting proneurotensin to the risk of first fatal or non-fatal cardiovascular event and diabetes in the mean follow up time of up to 6.5 years.

Results: There were 456 cardiovascular events observed in the study. Hazard ratios (HR) for CVD were expressed per 1 (SD) increment of log transformed proneurotensin for cardiovascular disease as HR 1,102; 95% CI; 1,06-1,54; P=0,037. There were total 222 diabetes events observed in the study. Hazard ratios (HR) for diabetes were expressed per 1 (SD) increment of log transformed proneurotensin for diabetes disease as HR 1,05; 95% CI; 0,91-1,20; P=0,5. But diabetes events results were more significant in females with HR 1,28; 95% CI; 1,30-1,59; P=0,02.

Conclusions: Fasting proneurotensin levels are independently associated with the risk of developing cardiovascular disease and as observed in the MDC study, proneurotensin predicted diabetes in females.