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Serum triglycerides and cancer risk in the metabolic syndrome and cancer (Me-Can) collaborative study

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Background: High levels of serum triglycerides are related to increased risk of cardiovascular diseases; however, little is known about their role in cancer risk. We examined the association between serum triglycerides and cancer risk in a large prospective study of 514,097 participants among seven European cohorts.

Methods: The metabolic syndrome and cancer project (Me-Can) includes cohorts from Norway, Austria, and Sweden. The current study included data on 257,585 men and 256,512 women. Mean age at baseline was 44 years and mean follow-up time was 10.4 years. A total of 38,746 men and women were diagnosed with cancer. Cox regression models were used to estimate relative risk (RR) of cancer for triglyceride levels in quintiles and as a continuous variable. All risk estimates were corrected for random error in exposure measurement by use of regression dilution ratio.

Results: Relative risk for the top versus bottom quintiles of triglycerides of overall cancer was 1.16 (95% confidence interval (CI) 1.06-1.26) in men and 1.15 (1.05-1.27) in women. For specific cancers, significant increases were found for cancers of the colon (RR: 1.96, 95% CI, 1.44-2.67), respiratory tract (RR: 1.42; 95% CI, 1.12-1.80) and the kidney (RR: 1.85, 95% CI, 1.14-3.02) among men and for respiratory (RR: 2.10; 95% CI, 1.41-3.12) and cervical cancers (RR: 1.88; 95% CI, 1.07-3.30) among women.

Conclusion: Data from our study provided evidence for a possible role of serum triglycerides in cancer development.

Adipokines and prostate cancer progression: nested case-control study (Protect)

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Background: Obesity has been associated with increased risk of aggressive prostate cancer and with poor disease outcome. Adipokines, small signalling molecules produced by adipocytes, may mediate this association and be useful markers of prognosis. We investigated the association of two adipokines, leptin and adiponectin, with prostate cancer stage in a nested case-control study.

Methods: 146 men with localised (TNM stage ≤ 2) prostate cancer and 146 with advanced stage ($T \geq 3$) prostate cancer were selected from the prostate-specific antigen (PSA) case finding phase of the UK population-based Prostate testing for cancer and Treatment (Protect) study. Adiponectin and leptin concentrations were established in sera taken at enrolment by enzyme-linked immunosorbent assay.

Results: Statistical analyses are ongoing, but preliminary odd ratios for adiponectin, leptin and leptin:adiponectin ratio (4th quartile versus 1st quartile of logged values), adjusted for age at blood draw, are 0.84 (95% confidence interval (CI) 0.44-1.61), 0.75 (95% CI 0.39-1.44) and 0.80 (95% CI 0.42-1.54) respectively. These estimates were not altered following adjustment for body mass index.

Conclusion: This study found little evidence that adiponectin and leptin separately, and as a ratio, are very strongly related to risk of advanced prostate cancer in PSA-detected cases, but the study was small and we cannot rule out modest effects.