Abstract: P427

Substitution of liquid dairy and risk of incident type 2 diabetes mellitus in the EPIC-NL cohort

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Background: Identifying modifiable risk factors for type 2 diabetes mellitus (T2DM) is essential to improve prevention strategies. Higher consumption of dairy products, in particular yogurt, has been associated with a lower risk of T2DM. In a Danish population, consumption of whole-fat yogurt instead of milk, buttermilk or skimmed yogurt has been associated with a lower risk of T2DM.

Objective: To investigate associations of liquid dairy product substitutions with T2DM incidence.

Methods: 35,900 participants of the European Prospective Investigation into Cancer and Nutrition-Netherlands (EPIC-NL) cohort were included. Information on liquid dairy consumption (skimmed milk, skimmed fermented milk, buttermilk, whole-fat milk, whole-fat yogurt) at baseline (1993-1997) was obtained by a single validated food frequency questionnaire. Potential T2DM cases were identified by self-report or linkage to the hospital discharge registry, and validated by consulting the general practitioner. Multivariable Cox proportional-hazard regression models were applied to investigate the association between substitution of portions (200 gram) of liquid dairy product and risk of incident T2DM.

Results: During 15 years follow-up, 1,466 validated incident cases of T2DM occurred. After adjustment for demographic and cardiovascular risk factors, replacing whole-fat milk (HR:0.87, 95%CI:0.56-1.36), buttermilk (HR:0.79, 95%CI:0.52-1.21) skimmed milk (HR:0.78, 95%CI:0.51-1.19) or skimmed fermented milk (HR:0.89, 95%CI:0.57-1.39) with whole-fat yogurt was not associated with risk of T2DM, nor was replacing whole-fat milk (HR:0.98, 95%CI:0.80-1.19) or buttermilk (HR:0.89, 95%CI:0.76-1.03) with skimmed fermented milk, replacing whole-fat milk (HR:1.12, 95%CI:0.93-1.35) or skimmed fermented milk (HR:1.15, 95%CI:0.98-1.33) with skimmed milk, or replacing whole-fat milk (HR:1.10, 95%CI:0.93-1.30) and skimmed milk (HR:0.98, 95%CI:0.90-1.08) with buttermilk.

Conclusion: Modelled substitutions within the group of liquid dairy products were not associated with risk of T2DM among a Dutch population, in contrast with findings from a previous Danish cohort. Wide confidence intervals for the whole-fat yogurt substitutions suggested low statistical power. To further elucidate these findings, the associations between dairy substitution and diabetes risk should be investigated in other populations, preferably with a wider consumption range of whole-fat yogurt.