

Abstract DES 2019

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Title: Effects of a six-month low-carbohydrate diet in patients with type 2 diabetes on glycemic control, body composition and cardiovascular risk factors

Background

Low-carbohydrate diets (LCD) have been shown to improve glycemic control, reduce weight and decrease antidiabetic medication in patients with type 2 diabetes (T2D). The aim of this study was to determine the effect of a isocaloric LCD on glycemic control, body composition, and cardiovascular risk factors in patients with T2D continuing antidiabetic medication unchanged.

Materials and method

71 subjects with T2D were randomized 2:1 to either a LCD with a maximum 20 % of energy from carbohydrates and minimum 50 % from fat (LCD group) or a standard diabetes care diet (placebo group). Subjects attended three visits over six months for blood sample analyses, anthropometrics and blood pressure assessments. Body composition was evaluated with DEXA-scan before and after intervention. Anti-diabetic treatment was unaltered, except in case of hypoglycemia. The placebo-controlled mean-effect-of-intervention (beta-coefficient and SE) is reported.

Results

The LCD group decreased carbohydrate intake from 42 to 13 E%, and increased fat intake from 38 to 63 E% (all $p < 0.001$). HbA1c declined in the LCD group after 3 months (-8.9 ± 1.7 mmol/mol, $p < 0.001$) and remained decreased at 6 months (-7.5 ± 1.8 mmol/mol, $p < 0.001$). After both 3 and 6 months BMI and waist were reduced (all $p < 0.01$), which was accompanied by a reduction in total fat mass at six months (-2.2 ± 1.0 kg, $p = 0.027$). Lean body mass was unaffected ($p = 0.32$). No changes in cholesterol, triglycerides or blood pressure were seen after 6 months.

Conclusions

A LCD high in monosaturated fat has sustained beneficial effects on glycemic control and body composition, but does not seem to affect cardiovascular risk factors in patients with T2D.