

Impact of Plant Oils on the Lipid Profile in Type 2 Diabetics

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AIM: Due to the high prevalence of dyslipidemia in type 2 diabetics and indications of positive effects of plant oils on the lipid profile, the investigation of their link was of interest.

MATERIAL AND METHODS: To study the effects of different PUFA-rich plant oils (a pure single oil – SO and a mixed oil – MO) with a similar fatty acid pattern, on the plasma lipid profile, 92 participants (34 insulin-dependent (IDDM) and 58 non-insulin-dependent (NIDDM), each group was randomly divided into two subgroups – SO and MO) were instructed to consume a standardized teaspoon of the respective oil three times per day for 10 weeks (approx. 9 g/d). Blood samples were taken four times (before intervention – T0, after four weeks (T1) and 10 weeks (T2) of intervention, and eight weeks after the end of intervention – T3). After each blood sampling the following parameters were analyzed: triglycerides (TG), total cholesterol (C), LDL-C and HDL-C (all enzymatically).

RESULTS: After 10 weeks of intervention (T2) a 12.4% decrease in TG could be observed in the MO-group, the strongest decrease was measured in the MO-NIDDM group (-14.6 %; $p=0.093$), whereas constant levels were found in the SO-group. A slight decrease in TG from T1 to T2 could be assessed for both groups. At T3 a strong (not significant) increase above baseline could be observed in the SO-IDDM group (+35%). Total-C levels of 186 mg/dl (SO) and 193 mg/dl (MO) did not change significantly, neither at T1 nor at T2, however, a 6.2 % decrease was observed in the SO-NIDDM group at T2. Onset levels of LDL-C levels were comparable (106 and 109 mg/dl in the SO and MO, respectively). LDL-C was constant during the entire study period of 18 weeks. Both groups showed significantly decreasing HDL-C levels after 10 weeks of intervention ($p<0.05$). No difference in the lipid profile was found between IDDM and NIDDM.

CONCLUSION: An easy and practical intervention of type 2 diabetics with few tea spoons of plant oils daily showed a trend for decreased TG concentration but at the same time reduced HDL-C values.