

EFFECTS OF N-3 POLYUNSATURATED FATTY ACIDS (Ω -3) SUPPLEMENTATION ON SOME CARDIOVASCULAR RISK FACTORS DURING A KETOGENIC DIET.

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Introduction

Background: the ketogenic diet (KD) has become a widely used nutritional approach for weight loss. Some of the KD's positive effects on metabolism and cardiovascular risk factors are similar to those seen after n-3 polyunsaturated fatty acids (ω -3) supplementation. We hypothesized that a ketogenic Mediterranean diet with phytoextracts combined with ω -3 supplementation may have increased positive effects on cardiovascular risk factors and inflammation.

Materials and Methods

We analyzed 34 male overweight subjects; aged between 25 and 65 years who were overall healthy apart from overweight. The subjects followed a ketogenic diet protocol for four weeks; with (KDO3) or without (KD) ω -3 supplementation.

Results

All subjects experienced a significant loss of body weight and body fat and there was no significant differences between treatment (body weight: KD—4.7 kg, KDO3—4.03 kg, body fat KD—5.41 kg, KDO3—5.86 kg). There were also significant decreases in total cholesterol, LDL-c, and glucose levels. Triglycerides and insulin levels decreased more in KDO3 vs. KD subjects, with a significant difference. All the investigated inflammatory cytokines (IL-1 β , IL-6, TNF- α) decreased significantly in KDO3 subjects whilst only TNF- α showed a significant decrease in KD subjects over the 12 month study period. No significant changes were observed in anti-inflammatory cytokines (IL-10 and IL-1Ra), creatinine, urea and uric acid. Adiponectin increased significantly only in the KDO3 group.

Conclusions

ω -3 supplementation improved the positive effects of a ketogenic Mediterranean diet with phytoextracts on some cardiovascular/metabolic risk factors and inflammatory state.