Abstract

Introduction: Type 2 diabetes mellitus increases the risk of hypertriglyceridemia and is an independent risk factor for cardiovascular diseases. Current literature reveals the beneficial effects of n-3 polyunsaturated fatty acids (n-3 PUFA) in hypertriglyceridemia treatment, however the safety for type 2 diabetic subjects are still debatable. This literature review discusses the safety on glucose metabolism of n-3 PUFA supplementation in the treatment of hypertriglyceridemia in subjects with type 2 diabetes mellitus.

Methods: A literature review was conducted on EMBASE and MEDLINE database to investigate clinical trials published since 1990 until June 2014 that investigated the effects of dietary/supplementation n-3 PUFA intake in hypertriglyceridemia treatment in subjects with type 2 diabetes mellitus. Results and Discussion: Fourteen clinical trials (n = 2,105) were included in this review. All trials reported a reduction in triglycerides levels between 12 - 34% in intra-group and 15 - 36% in between-groups analysis. Four trials showed a significant increase in LDL-c (6 - 18%) and another four in HDL-c levels (4 - 15%). No significant changes were found to total cholesterol, VLDL-c, fasting glucose, HbA1C, and insulin sensitivity index. Conclusions: The n-3 PUFA supplementation leads an improvement on TG levels and did not result in any impairment on glucose metabolism in hypertriglyceridemic patients with type 2 diabetes mellitus being a safe option to treat the diabetic population.

Keywords
N-3 PUFA, Diabetes mellitus, Triglycerides, Lipid profil,,Cardiovascular diseases.