

Effectiveness on maternal and offspring metabolic control of a home-based dietary counseling intervention and DHA supplementation in obese-overweight pregnant women (MIGHT study) : a randomized controlled trial-Study protocol

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Abstract

Background Lifestyle interventions are the primary prevention strategy for gestational diabetes (GDM) in obese/overweight women; however, these interventions have shown limited effectiveness. Omega-3 polyunsaturated fatty acids (PUFAs) intake has shown beneficial effects on glucose metabolism, lipid fractions and inflammatory factors in women who already have GDM. Combining PUFAs supplementation with a lifestyle intervention could achieve lower increase of glucose levels by improving insulin sensitivity. Our aim is to assess two prenatal nutritional interventions (home-based dietary counseling and/or docosahexaenoic acid (DHA) supplementation) delivered to obese/overweight women during pregnancy for them and their offspring to achieve better metabolic control. **Methods/design** Randomized controlled trial, 2 × 2 factorial design. Eligible pregnant women will be randomly allocated to one of the four parallel arms: 1) Home-based dietary counseling +800 mg/day DHA supplementation (n = 250); 2) 800 mg/day DHA (n = 250); 3) Home-based dietary counseling +200 mg/day DHA (n = 250); 4) 200 mg/day DHA (n = 250). Primary outcomes are: GDM; macrosomia; and neonatal insulin resistance. Data analyses will be done on an intention-to-treat basis. **Discussion** We expect the present study to contribute to the understanding of the potential effectiveness of an omega-3 supplementation on the risk of developing GDM in overweight/obese pregnant women. We will also test if the combination of having better dietary habits alongside with omega 3 supplementation will improve insulin sensitivity and as consequence, a lower elevation of glucose levels could be achieved..

Keywords

Diabetes, Obesity, Nutrition, Polyunsaturated fatty acid, Clinical trials, Chile.