

197

THE EFFECT OF FISH-OIL SUPPLEMENTATION ON MATERNAL AND NEONATAL OUTCOMES: A TRIPLE BLIND RANDOMIZED CONTROLLED TRIAL

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Background and aims: To evaluate the effect of fish oil supplementation on pregnancy outcomes in mother and newborn.

Method: This randomized, triple-blinded placebo-controlled trial was conducted on 150 pregnant women aged 18–35 from February 2014 to April 2015 in Tabriz, Iran. Participants assigned to receive either 1000 mg fish oil supplements containing 180 mg eicosapentaenoic acid and 120 mg docosahexaenoic acid from week 20 of gestation to birth. Primary outcome measure was birth weight. Gestational duration, preterm labour, low birth weight (LBW), length, and head circumference, maternal serum DHA and EPA level at 35–37 weeks were also examined. The statistical analysis was intent-to-treat.

Results: Demographic characteristics were similar in both groups ($P>0.05$). The mean (SD) birth weight in the fish oil and placebo groups were 3256g (362) and 3172g (447),

respectively (adjusted MD=84.1g; [95% CI -24.8, 193.2]). Five (7.6%) neonates in the placebo versus no case in the fish oil group were born with LBW ($p=0.02$). The rate of preterm labour was lower in the fish oil group (adjusted OR=0.74; [95% CI 0.16, 3.42]). However, there were no statistically significant differences in the maternal outcomes ($P>0.05$) with exception of the proportion of maternal serum DHA fatty acid at 35–37 weeks ($P<0.001$).

Conclusion: Although low dose fish oil supplementation increased birth weight, its effect was not statistically significant. The frequency of LBW was significantly reduced in the intervention group but the observed reduction needs to be confirmed in future larger investigations using different doses of omega-3.