OMEGA 3 FATTY ACID SUPPLEMENTATION AND PREVENTION OF PRETERM LABOR: A META-ANALYSIS

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BACKGROUND: Preterm birth is defined as delivery of an infant prior to its 37th weeks of gestation that may bring about high morbidities and mortalities in the neonatal period. This has been a global concern because it is still the leading cause of mortality in children less than 5 years old worldwide. Infants may survive with essential newborn care but are still physiologically and metabolically immature with higher risk of morbidities and mortality than term infants.

OBJECTIVES: This study aims to determine if Omega-3 Fatty acid supplementation can prevent preterm labor

METHODOLOGY: A systematic search was conducted in the following databases: MEDLINE via PubMed, Cochrane Library CENTRAL and Ovid database. Registry database clinicaltrials.gov was also searched. Included trial under consideration were evaluated for inclusion and methodological quality. Two authors independently evaluated quality of the trials and extracted data. Any disparity was resolved through. Statistical analysis was done using Review Manager version 5.3.

RESULTS: Six (6) studies involving 7075 healthy pregnant women were included in the meta-analysis. The review demonstrated no significant difference in terms of preventing preterm birth when giving Omega 3 fatty acid compared with the control group. However, a trend was noted towards its prevention compared with the control group (RR 0.80; 95% CI, 0.44 to 1.46). There was also a marginally significant difference in the proportion of subjects with preterm labor between the two groups and a trend toward a beneficial effect on those given the Omega 3fatty acid supplement (RR 0.65; 95% CI 0.39 to 1.06). The dose that may prevent preterm birth was not established but benefits were noted with doses of 300 and 600 mg. The gestational age in the treatment group was significantly higher by 0.19 weeks or 1.33 days (95% CI 0.03 to 0.34) but lower birthweight by 133.9 grams (95%CI -230.1 to 37.71).

CONCLUSION: The results of this review showed that prevention of preterm labor and consequently preterm birth were not significantly different between women given omega 3 fatty acid compared with those in the placebo group. However, a trend towards a beneficial effect in preventing preterm labor and delivery was seen. Dosage of the omega 3 fatty acid was not established yet but protective effect was noted for dosages between 300 mg and 600 mg. Giving of omega 3 fatty acid supplements may not increase birthweight but may prolong gestation to term.

Keywords: Preterm birth, omega 3 fatty acid, docosahexaenoic acid, DHA, gestational age, birthweight