primary studies - published RCT

Bronchodilation from intravenous theophylline in patients with cystic fibrosis: results of a blinded placebo-controlled crossover clinical trial.

Code: PM2654849 **Year:** 1989 **Date:** 1994 **Author:** Pan SH

Study design (if review, criteria of inclusion for studies)

6-week, parallel design trial with 4 arms.

Participants

12 children and young adults diagnosed with CF and pancreatic insufficiency (mean (SD) age 12.2 (5.4) years) on genotype or sweat test and able to complete the spirometric tests. Also pancreatic insufficient and plasma vitamin A and E levels within the no 13 gender and age-matched people, without CF (mean (SD) age 13.4 (6.3) years), 7 males, 6 females.

Interventions

8 x 1 g capsules fish oil (4 capsules twice daily) (3.19 g EPA and 2.21 g DHA) compared with olive oil placebo capsules flavoured to obtain a slight fish taste, over 6 weeks.

Outcome measures

Outcomes included in this review: number of people experiencing adverse events; number of deaths; changes in haematological indices; changes in plasma and erythrocyte levels of EPA and DHA and EPA/AA ratio.

Main results

Significant incorporation of omega-3 fatty acids into plasma and erythrocyte membrane phospholipids was observed in subjects with and those without CF randomly assigned to the fish oil treatment. For example, in subjects randomly assigned to receive fish oil, the eicosapentaenoic acid/arachidonic acid ratio in plasma increased 9.8-fold, from 0.04 +/- 0.02 (mean +/- SEM) to 0.39 +/- 0.11 (p = 0.02), in the patients with CF (n = 7) and 23.0-fold, from 0.04 +/- 0.01 to 0.92 +/- 0.17 (p = 0.001), in the subjects without CF (n = 8) who received fish oil (p = 0.02, patients with CF vs subjects without CF at 6 weeks). No clinically or statistically significant changes from baseline were observed in platelet aggregation or levels of vitamin E or A in subjects who received fish oil.

Authors' conclusions

Future studies are indicated to determine whether omega-3 fatty acid enrichment provides a clinically beneficial antiinflammatory effect in patients with CF.

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See also

Pediatr Pulmonol. 1989;6(3):172-9.

Keywords

Adolescent; Child; Docosahexaenoic Acid -DHA-; omega-3; Gastrointestinal Diseases; non pharmacological intervention - diet; Oral; Pancreas insufficiency; Pancreatic Diseases; oils; Supplementation; essential fatty acids; Malabsorption; Nutrition Disorders; Capsules; Food;