primary studies - published RCT

Comparison of four pancreatic extracts in cystic fibrosis.

Code: PM3304172 **Year:** 1987 **Date:** 1993 **Author:** Beverley DW

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

6-week cross-over study planned.

Participants

19 adolescents and adults diagnosed with CF on genotype, sweat test, or clinically (median age 17 years, age range 12 years to 26 years), 11 male, 5 female. 3 participants excluded due to requiring a course of corticosteroids for asthma attacks. All were recruited within 4 weeks of hospitalisation for acute respiratory infection and judged to be in optimum condition for disease stage. All were Pseudomonas aeruginosa colonised and produced at least 5 ml sputum daily. Initial randomisation gave groups with comparable baseline characteristics except for age. The treatment group also had significantly greater weight, peripheral blood leucocyte and neutrophil counts.

Interventions

2.7 g EPA daily compared with identical olive oil placebo capsules, over 6 weeks.

Outcome measures

Outcomes included in this review: number of people experiencing adverse events; number of deaths; changes in haematological and growth indices; changes in lung function; changes in in-vitro neutrophil chemotaxis.

Main results

EPA was well tolerated and resulted in a significant reduction in sputum volume (median change with EPA -10 mL/day, placebo 0; p = 0.015), and improvements in Schwachman score (EPA 5%, placebo 0; p = 0.034), forced expiratory volume in 1 s (EPA 0.25 L, placebo -0.1 L; p = 0.006), and vital capacity (EPA 0.6 L, placebo 0; p = 0.011). Relative chemotaxis of circulating neutrophils to LTB4 increased from a subnormal baseline of 4 (median; range 0-10) microns/30 min before treatment, to a near normal value of 11 (5-18) microns/30 min after EPA. Relative chemotaxis to LTB4 of patients taking placebo did not change: the difference in response was highly significant (p = 0.001). Specific reduction of neutrophil chemotaxis to LTB4 is a sensitive assay of chronic in-vivo exposure to LTB4.

Authors' conclusions

LTB4 has a pathogenetic role in the lung damage of cystic fibrosis. Longer-term clinical trials of EPA are warranted in a larger number of cystic fibrosis patients.

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See also

Arch Dis Child. 1987 Jun;62(6):564-8.

Keywords

Adolescent; Adult; Bacterial Infections; Child; Infection; non pharmacological intervention - diet; pharmacological_intervention; placebo; Pseudomonas aeruginosa; Pseudomonas; Respiratory Tract Diseases; Respiratory Tract Infections; Supplementation; essential fatty acids; omega-3; Eicosapentaenoic acid -EPA-; Capsules;