primary studies - published RCT

Improved antioxidant and fatty acid status of patients with cystic fibrosis after antioxidant supplementation is linked to improved lung function.

Code: PM12499335 **Year:** 2003 **Date:** 2003 **Author:** Wood LG

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

Single centre randomized controlled trial

Participants

46 people with CF >5 years of age with diagnosis confirmed by sweat test. All participants discontinued vitamin supplementation prior to enrolment but were supplemented with vitamin E and A for 4 weeks before the trial started

Interventions

Control: continuation of low-dose supplement (10 mg vitamin E + 500 Î¼g vitamin A) taken for 4 weeks prior to trial start. Frequency: once per day with breakfast. Duration: 8 weeks. Intervention: 200 mg vitamin E (RRR a-tocopherol), 300 vitamin C (sodium ascorbate), 25 mg Î²-carotene, 90 Î¼g selenium (selenomethionine), 500 Î¼g vitamin A (retinyl palmitate in oil).

Outcome measures

Lung function (FEV1 % predicted), quality of well being, lipid peroxidation, plasma antioxidant status, plasma fatty acid status, pulmonary exacerbations measured at 0 and 8 weeks.

Main results

Antioxidant defenses in group B improved, whereas those in group A did not: in groups B and A, the mean (+/- SEM) changes (Delta) in vitamin E were 10.6 +/- 1.5 and -1.9 +/- 0.9 micro mol/L, respectively (P

Authors' conclusions

Whereas increased beta-carotene, selenium, and fatty acid concentrations are linked to improved lung function, increased plasma fatty acid concentrations are linked to oxidative stress. If oxidative stress is deemed to be important to the clinical outcome of CF patients, means of reducing oxidative stress while maintaining a high-fat, high-energy diet must be investigated.

http://ajcn.nutrition.org/content/77/1/150.full.pdf

See also

Am J Clin Nutr. 2003 Jan;77(1):150-9.

Keywords

Antioxidants; Child; Dinoprostone; non pharmacological intervention - diet; pharmacological_intervention; Respiratory System Agents; Supplementation; Vitamin A; vitamin C; Vitamin E; Vitamins; Low-Dose; Selenium; Prostaglandins; Gastrointestinal agents; Minerals;