primary studies - published RCT

Temporal associations among energy intake, plasma linoleic acid, and growth improvement in response to treatment initiation after diagnosis of cystic fibrosis.

Code: PM16452358 **Year:** 2006 **Date:** 2006 **Author:** Shoff SM

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

RCT

Participants

A total of 71 CF children who had pancreatic insufficiency but not meconium ileus enrolled in the Wisconsin CF Neonatal Screening Project were studied. Responders were defined by having achieved adequate weight gain, as indicated by a recovery of weight z score (Wtz) comparable to Wtz at birth (WtzBR) within 2 years of diagnosis. Increased EN and sustained normal plasma linoleic acid level (increased pLA) were defined by achieving energy intake > or =120% of estimated requirement for > or =75% of the time and maintaining plasma LA > or =26% of total fatty acids for > or =75% of the time, respectively.

Outcome measures

energy intake (increased EN) and plasma essential fatty acid status

Main results

Thirty-two (68%) screened patients and 13 (54%) patients whose CF was diagnosed conventionally recovered WtzBR within 2 years of diagnosis. Screened patients responded at significantly younger ages (mean/median: 6.3/4.3 months) than patients whose CF was diagnosed conventionally (mean/median: 15.8/11.8 months). Proportionately fewer screened patients (33%) achieved increased EN compared with patients whose CF was diagnosed conventionally (73%). However, more screened patients responded to increased EN and recovered WtzBR (91%) than patients whose CF was diagnosed conventionally (56%), although this difference was of borderline significance. Compared with having neither increased EN nor increased pLA, the likelihood of being a responder was greatest with combined increased EN and increased pLA, followed by increased EN only. The positive associations between increased EN and increased pLA to treatment responsiveness remained significant after adjustment for neonatal screening status, baseline height and weight status, and indices of pulmonary disease severity.

Authors' conclusions

Increased EN and increased pLA are critical in promoting adequate weight gain in children with newly diagnosed CF.

http://dx.doi.org/10.1542/peds.2004-2832

See also

Pediatrics YR: 2006 VL: 117 DE: RCT NO: 2

Keywords

linoleic acid; non pharmacological intervention - diet; Supplementation; Malnutrition; Nutrition Disorders; omega-6; essential fatty acids;