primary studies - published RCT

Gastric function in children with cystic fibrosis: effect of diet on gastric lipase levels and fat digestion.

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

RCT

Participants

6 children with cystic fibrosis

Interventions

The patients were studied at three different periods: first during their usual diet, then 2 wk after consuming a moderate-fat diet (approximately 30% of calories derived from fat), and finally 2 wk after consuming a high-fat diet (approximately 50% of calories derived from fat). The diets were given in random order.

Outcome measures

Fasting and postprandial activity of digestive enzymes, gastric pH, and gastric volume measured before, during, and after 120 min of feeding

Main results

Fasting and postprandial activity of digestive enzymes, gastric pH, and gastric volume measured before, during, and after 120 min of feeding did not differ significantly as a function of fat intake. Postprandial gastric lipase output (units per kilogram of body weight) during usual, moderate-fat, and high-fat diets was close to or higher than (38.8 +/- 7.2, 44.9 +/- 8.6, and 54.8 +/- 5.5 U/kg per 20 min) gastric lipase output of premature infants (22.5 +/- 6.4 to 28.3 +/- 6.6 U/kg per 20 min) or of healthy adults (5.4 +/- 0.4 U/kg per 15 min) fed a high-fat diet. Postprandial pepsin output was higher (4749 +/- 797, 6117 +/- 925, and 5444 +/- 819 U/kg per 20 min) than in premature infants (597 +/- 77 to 743 +/- 97 U/kg per 20 min) or healthy adults (781 +/- 56 U/kg per 15 min). Eighty minutes after feeding gastric lipolysis reached 20 to 36%.

Authors' conclusions

This study shows that gastric lipase activity is high in cystic fibrosis patients maintained on diets providing 32% to 49% energy as fat, and that gastric lipase level did not increase over the ranges of dietary fat intake tested

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See also

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Keywords

Adolescent; Adult; Child; Infant; Newborn; non pharmacological intervention - diet; Supplementation; Pancreas insufficiency; Pancreatic Diseases; Gastrointestinal Diseases; Malabsorption; Nutrition Disorders;