Fatty acids and cystic fibrosis

A. Sojo1, C. Vazquez1, L. Aldama-z-Echevarria1, N. Martinez1, F. Baranda1, A. Garcia1, J. Elorza1, J. Andrade1, J.A. Prieto1. 1Hospital Cruces, Cystic Fibrosis Unit, Barakaldo, Spain

Aims: To assess evolutive changes in EFA profile in a cohort of CF patients and to investigate its potential correlations with clinical and nutritional changes.

Methods: 24 patients were studied over a 8-year time span. A control group of 83 non-CF patients undergoing minor surgery was included.

Results: Mean age of study group at the onset was 7.8±3.9 years and 14±3.6 years at follow-up. 95.4% were PI. 5 had liver disease and 4 diabetes at the onset of the study and 9 and 6 at follow-up. There was a significant increase in BMI over the study, 17.1±2.1 kg/m² at the onset vs 19.4±3.1 kg/m² at follow-up. There was no significant change in mean FEV1%. There was a significant evolutive increase in saturated, monoeno saturated EFA, DPA, MeadAcid/AAD, and Dihomo-γ-linoleic (DHGLA) serum levels and a significant decrease in PUFA, w3, w6, linoleic (LA), linoergic, DHA, and LaxDHAs in patients as compared with controls. There was also a significant increase in DHGLA and decrease in LA and linoergic serum levels in study patients at follow-up as compared with baseline. We found some significant correlations between EFA profile and nutritional variables. Weight at the onset and at follow-up, and BMI at follow-up had all a negative correlation with baseline LA serum levels. Patients with liver disease at baseline had significantly increased AA and at follow-up significantly decreased w3.

Conclusions: Study group had abnormalities in EFA profile at baseline, with evolutive changes at follow-up. Significant decrease in w6, especially LA which correlated with nutritional impairment. DHA was decreased at baseline, and at follow-up with no correlation with the degree of fat malabsorption.

A fat lot of good. An 8 year longitudinal investigation of fat intakes in a paediatric CF population

C. Smith1, A. Winn2, S. Ranganathan3, P. Seddon3. 1Royal Alexandra Children's Hospital, Nutrition and Dietetics, Brighton, United Kingdom; 2University of Brighton, Computing, Mathematics and Information Sciences, Brighton, United Kingdom; 3Royal Alexandra Children's Hospital, Respiratory Medicine, Brighton, United Kingdom

Background: Reducing total and saturated fat intake is recommended for the general population. High fat intakes are still advised for those with CF but it has been suggested that the quantity and quality of fat intake be monitored closely.

Aim: To describe changes in macronutrient and fat intake over an 8 year period.

Method: Three-day food diaries were completed by patients with CF during annual review and nutrient composition was analysed using Compeat (Nutrition Systems, UK). The influence of year on % energy by type (fat, CHO, protein) and % energy by fat component (SFA, MUFA, PUFA) was examined by linear regression (SPSS v17.0, Chicago, USA).

Results: 134 food diaries were reviewed in 28 CF subjects (10 males) age range 1 to 18 years. Over the study period % energy from fat decreased slightly and % energy from protein increased slightly but these trends were not significant (protein p = 0.06, CHO p = 0.44, Fat p = 0.07). The % of energy derived from SFA, MUFA and PUFA also remained statistically unchanged (SFA p = 0.10, MUFA p = 0.20, PUFA p = 0.15). Saturated fat consistently contributed the most: 13−18% of total and PUFA also remained statistically unchanged (SFA p = 0.10, MUFA p = 0.20, p = 0.06, CHO p = 0.44, Fat p = 0.07). The % of energy derived from SFA, MUFA, PUFA was examined by linear regression (SPSS v17.0). The overall prevalence rate has remained stable at approximately 23−28%. When comparing the clinical parameters of the 2009 normal and abnormal glucose tolerance groups, the only statistically significant differences are seen when comparing age and pancreatic sufficiency, as expected those with abnormal glucose tolerance group are older and more likely to be pancreatic insufficient. Intensive monitoring of the blood glucose followed in 3/27 patients. CFRD was subsequently diagnosed in 1 patient.

Conclusion: The RLGTT is easily accepted and implemented in regular care. An abnormal RLGTT should be followed by intensive monitoring of blood glucose.