

and high adherence to Mediterranean diet. Further analyses are required to explore the associations among the variables considered as key factors for adolescents' healthy development.

#### A45

##### FOOD DATABASE OF ENDOCANNABINOIDS, N-ACYLETHANOLAMINES AND N-ACYLPHOSPHATIDYLETHANOLAMINES AND DAILY INTAKE IN WESTERN, MEDITERRANEAN AND VEGETARIAN DIETS

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**Introduction:** N-acylphosphatidylethanolamines (NAPEs), N-acylethanolamines (NAEs), and the endocannabinoids (ECs) are lipids involved in different physiological processes in both animals and plants. NAPEs derive from NAPEs through the action of NAPE-PLD. NAPEs can be hydrolyzed by FAAH and form free fatty acids and ethanolamine. In animals, NAPEs and ECs activate the cannabinoid receptors, the vanilloid receptor/TRPV1, peroxisome proliferator-activated receptor- $\alpha$  (PPAR- $\alpha$ ) and G protein-coupled receptors present along the gastrointestinal tract (GIT). The activation of receptors is involved in the regulation of food intake, lipid metabolism, release of gut peptides and pain modulation. Although the presence of NAPEs, NAEs and ECs in foods is recognized, their content in foods is underestimated.

**Objectives:** The objectives of this study were to determine the concentration of NAPEs, NAEs and ECs in 43 foods and to estimate their daily intake through a diet that follows the principles of Mediterranean (MD), Vegetarian (VD) and Western Diet (WD). The concentration of NAPEs, NAEs and ECs in foods was determined by LC-HRMS analysis. The diets provided 2,000 kcal.

**Results:** NAPEs and NAEs are most abundant in vegetables products than in animal products, while the opposite was found for the ECs. The estimated daily intake of NAPEs was hundreds of milligrams with abundance being in MD = VD > WD. The intake of NAEs and ECs was hundreds or tens of micrograms; the abundance of NAPEs was in MD = VD > WD, while that of ECs was in MD = WD > VD.

**Conclusions:** Food choices influence NAPEs, NAEs and ECs intakes. It is likely that those compounds may contribute to the biological effects of diets in short and long periods.

#### A46

##### LONG-TERM EFFECTS OF THE KETOGENIC DIET ON GROWTH IN CHILDREN WITH RESISTANT DRUG EPILEPSY AND GLUCOSE TRANSPORTER TYPE 1 DEFICIENCY SYNDROME

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**Introduction:** The ketogenic diet (KD) is an effective therapeutic option for patients with drug-resistant epilepsy (EFR) and is the only therapy currently available for Glucose Transporter Type 1 Deficiency Syndrome (GLUT1-DS). Studies on long-term effects and, particularly, on growth are required.

**Methods:** Primary objective: evaluate the growth trend in children with EFR and GLUT1-DS treated with KD. Secondary objective: identify patients with growth retardation eligible for diagnostic tests to identify GH deficiency. Retrospective study, conducted on children (age 1-15 years) affected by EFR (n 23) and by GLUT1-DS (n 22) treated with classical KD for at least 1 year and with follow-up of at least 6 months. All subjects underwent measurements of anthropometric (height, weight, body mass index, body circumferences), auxological (genetic target, growth rate), body composition (skinfold thickness, bioimpedance) parameters. Patients with a height  $\leq$ -3 DS or height  $\leq$ -2DS and growth rate  $\leq$ -1DS were considered pathological (Note 39 AIFA). **Results:** All patients showed significant changes in weight and height at 12 months. 3 patients with EFR and 10 patients with GLUT1 were diagnosed as pathological. There were no differences between the variables analyzed at baseline and at 12 months between pathological GLUT1 and non-pathological GLUT1.

**Conclusions:** Preliminary analysis showed a higher incidence of short stature in patients with GLUT1 compared to epileptics. The disease could directly affect growth through a defective GH secretion induced by the GLUT1 mutation. A total of 13 patients are candidates for diagnostic studies of GH deficiency. A larger number of patients is required to allow optimal stratification of subjects to investigate relationship between diet variables and growth.

#### A47

##### SUPPORT OF NUTRITIONAL THERAPY IN THE KOREIC SYNDROME: CLINICAL CASE

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**Introduction:** The choreic syndrome is characterized by irregular, arrhythmic movements, variable location, difficulty in phonation and deglutition and increase in energy expenditure. The aim of the study was to evaluate the weight variation and body composition during nutritional therapy.

**Methods:** A 53-year-old man with choreic syndrome diagnosis in 2015 and weight loss of 20 kg in the last 8 months before our observation. The patient reports irregular episodes of dysphagia for solids and liquids, burning in the oral and perioral region. The nutritional state was evaluated using: anthropometric parameters, body composition by bioimpedance analysis and dietary intakes with a follow-up of 24 months. Dietary plan: energy, 2466 Kcal/die; proteins, 109 g/die (17.7%); lipids 70 g/die (25.5%); glycid 373 g/die (56.8%); privileged complex carbohydrates, vegetable fats and high biological value proteins. The caloric intake was distributed into 5 meals /die. The consistency of the dishes was made creamy and thickeners were used for liquids which have been recommended to receive adequate intake.

**Results:** The diet compliance was good. At baseline and after 24 months of dietotherapy we observe: weight increase 47.8 Kg vs 55.5 Kg, increase of BMI 18 kg/m<sup>2</sup> vs 21 kg/m<sup>2</sup>, respectively; maintenance of the BCM and recovery of a normoidrateration state. The patient reports a subjective well-being.

**Conclusions:** Despite the excessive energy expenditure resulting from hyperkinesia and complications associated with the choreic syndrome, adequate nutritional therapy allows a recovery of body weight with good preservation of muscle mass and hydration status. This contributes to improving the quality of life in the course of pathology.

#### A48

##### BODY DENSITY ESTIMATION FROM MULTI-FREQUENCY BIOELECTRICAL IMPEDANCE ANALYSIS MEASUREMENTS

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**Introduction:** Air plethysmography analysis is a method to measure the human body density (D) and ables to evaluate the body composition. This tool is emerging as a convenient alternative to the hydrostatic weighing. D allows estimation of the Human Fat Mass percentage using typical regression relations (see Siri, 1956). The objectives of the study is to define the relationship between Bioelectrical parameters obtained by Multifrequency Bioelectrical Analysis (MF-BIA) and D.

**Methods:** 25 healthy subjects ( $35 \pm 8.2$  anni;  $1.72 \pm 0.08$  m;  $78.6 \pm 15.3$  kg) both genders have been enrolled and D measurements have been collected with an Air plethysmography (BODPOD, Cosmed, Italia). Moreover, MF-BIA parameters as Z, PA, Rx and Xc at 5, 10, 50, 100, 250 kHz have been measured (Human in Touch, DSmedica, Italia). Multiply regression analysis has been performed between D and MF-BIA parameters and backward identification method has been used as selection criterion ( $p < 0.05$ ; software SPSS, IBM, USA).

**Results:** Statistical analysis reports as PA at 50 and 100 kHz are the MF-BIA parameters with best prediction value of D as measured by BODPOD ( $p < 0.005$ ). The main results (expressed as mean  $\pm$  SD) are: D:  $1.038 \pm 0.029$ ; D(PA50):  $1.041 \pm 0.019$ ; D(PA100):  $1.036 \pm 0.019$ . Data with an R2adj of 0.394 and 0.442 and a SE of 0.022 and 0.021 for PA50 and PA100, respectively.

**Conclusions:** Phase Angle at 50 kHz and 100 kHz are accurate D predictors. It would seem that the D estimation are slightly higher and lower with PA50 and PA100 respectively. Future investigations on a greater subject number are required to confirm present results and to increase the estimation precision. Moreover, similar studies are necessary to recognise MF-BIA and D relation also in particular categories as well as Obese and diabetic patients.

#### A49

#### BIOELECTRICAL IMPEDANCE ANALYSIS (BIA) AND PHYSICAL FITNESS IN NEPHROPATHIC PATIENTS ON PERITONEAL DIALYSIS

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**Introduction:** Body composition and physical fitness are both components of nutritional status and are closely related to each other. In clinical practice, they can be assessed using bioelectrical impedance analysis (BIA) and performing physical fitness tests (PF), respectively. The main objective of the study was to evaluate in patients in peritoneal dialysis (PD) the relationships of PF tests with those BIA variables that are considered as markers of skeletal muscle quality (qualitative BIA).

**Methods:** Patients in DP were studied in clinically stable conditions: 31 men (age  $60.6 \pm 15.5$  years; BMI ( $27.8 \pm 4.1$  kg/m<sup>2</sup>) and 23 women (age  $51.8 \pm 13.1$  years, BMI  $28.5 \pm 5.8$  kg/m<sup>2</sup>). The PF tests performed were GS = gait speed, STS test = sit to stand and TUG = timed up and go. BIA (HUMAN IM-TOUCH, DS Medica-Milan) was carried out for assessing body composition. In particular, multifrequency (IR) ratio between Z at 250 kHz and Z at 5 kHz, and phase angle (PhA, measured at 50 kHz) were considered as indices of body cell mass and extracellular water.

**Results:** On average, PF tests did not differ significantly between gender and the same was true for IR (M:  $0.876 \pm 0.022$  vs. F:  $0.878 \pm 0.012$ ) and PhA ( $5.5 \pm 1.4$  vs.  $5.2 \pm 0.8$  degrees). After adjusting for gender, GS and TUG were weakly correlated with BMI (but not with the other anthropometric variables) and much more closely with PhA and IR. STS was not associated with BMI and only weakly correlated with IR and PhA. Multiple linear regression model indicated that BMI+IR or BMI+PhA were predictors of STS and TUG, whereas IR (or PhA) was the only significant predictor of STS.

**Conclusions:** The preliminary results of this study show that in PD patients qualitative BIA variables such as IR or PhA have significant and interesting associations with some of the major PF tests.