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ACUTE AND CHRONIC OMEGA-3 FATTY ACIDS ACTIVATES GPR120 IN PERIPHERAL BLOOD MONONUCLEAR CELLS FROM NAFLD AND OBESE PATIENTS REDUCING INFLAMMATION

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Rationale: The chronic and low grade inflammation is a common link between obesity and its associated comorbidities. GPR120 is the nutritional omega-3 (N3) receptor, however, its activity was not measured in humans.
Methods: It is a double-blind, randomized clinical trial study, approved by ethical committee from Federal University of Sergipe. We recruited obese and NAFLD volunteers and administered 3 daily capsules of N3 (EPA+DHA), totaling 2 grams, or mineral oil as placebo, for 30 days. After 3 hours of the first capsules consumption and after 30 days, a blood samples were collected and the serum and monocyte cells (PBMC) separated. An immunoprecipitation test was carried out to test the GPR120 activation through its connection to b-arrestin protein in PBMC. In the end of experimental period we evaluated the pro-inflammatory markers such as TNF-a, IL-1b, PTP1b and JNK proteins using western blots. Biochemical analysis of alanine and aspartate aminotransferases was also analyzed. To guarantee the quality of N3 capsules, and its biodisponibility and bioaccessibility, the mass spectrometry coupled to gas chromatography was used. For statistical analysis, *t* Student or Wilcoxon tests were used, adopting $P<0.05$ as significant.
Results: The N3 fatty acids reached the blood stream after 3 hours of first consumption, and was enough to increase the connection between GPR120 cell surface receptor and its first downstream protein, beta-arrestin2. After 30 days of treatment, the proinflammatory cytokines such TNF and IL1-b and PTP1b was not altered, however, phospho-JNK was significantly reduced ($P<0.05$). Importantly, ALT and AST were reduced after treatment in comparison to placebo.
Conclusion: These preliminary results showed the ability of omega-3 fatty acids acutely to activate its receptor, GPR120. After 30 days, the treatment reduced JNK protein, an important inflammatory marker, but not the others. The ALT and AST liver damage enzymes was reduced, showing the potential of omega-3 treatment when NAFLD is associated to obesity.
References: *Endocrinology*. 2015;156(11):4033-4046.

Cell. 2010;142(5):687-698.
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THE EFFECT OF SLEEP ON LIPID PROFILE AMONG EMIRATI OBESE INDIVIDUALS

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Rationale: The aim of the study was to determine if sleep quality is associated with an increased risk for cardiovascular disease (CVD) based on lipid profile in obese class II (Body mass Index (BMI) $\geq$35 kg/m^2) Emirati subjects.
Methods: A total of 28 obese (BMI $\geq$35 kg/m^2) Emiratis residing in the United Arab Emirates (UAE) were recruited and sleep quality was assessed using the Pittsburgh sleep quality index (PSQI). Blood was collected and tested for: total cholesterol (TC), high density lipoprotein (HDL), low-density lipoprotein cholesterol (LDL), and triglyceride (TG). Multiple linear regression analysis tested the association between these lipid markers: TC, HDL, LD, and TG (outcome variables) and sleep quality measured by PSQI, adjusting for other potential confounders (age and gender).
Results: The sample mean age was 29.61 ± 8.75 years (68% were female, and 32% were male). Overall, 50% of participants reported poor sleep quality as defined by a PSQI score $\geq$6. A high PSQI score was significantly associated with higher TG ($P=0.016$) and TC ($P=0.028$) compared to those with good sleep quality. According to our findings PSQI score had no effect on LDL or HDL.
Conclusion: Poor lipid profile (TG and TC) was independently associated with poor sleep quality regardless of age and gender. However, it is suggested to replicate a similar study with a larger sample to be able to generalize and get more accurate results. Sleep may be an important factor to look into when establishing a treatment plan for obese individuals that suffer from dyslipidemia.
References: Buysse DJ, Reynolds CF, Monk TH, et al. The Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and research. Psychiatry Res. 1989;28:193–213.
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BODY COMPOSITION IN WOMEN WITH SEVERE OBESITY: AGREEMENT BETWEEN DUAL ENERGY X-RAY ABSORPTIOMETRY AND MULTIFREQUENCY BIOIMPEDANCE ANALYSIS

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Rationale: It is important to identify accurate and accessible methods to assess the body composition of severely obese individuals in order to carry out this analysis more routinely to prevent the worsening of the clinical condition, as well as monitoring and improving interventions. The aim of this study was to analyze the agreement between the Dual Energy X-Ray Absorptiometry (DXA) and MultifrequencyBioimpedance Analysis (BIAMF) methods in the analysis of the body composition of women with severe obesity (Body Mass Index - BMI $\geq$ 35 kg/m^2)
Methods: Baseline data from a randomized clinical trial. DXA was performed on Lunar DPX NT (GE Healthcare) device and BIAMF on Inbody S10 device. Total fat mass (kg), total lean mass (kg) total fat free mass (kg) and body fat (%) were analyzed. The agreement between the methods was assessed by the Concordance Correlation Coefficient (CCC) and Lin graphs. Moderate agreement was considered for CCC 0.40 to 0.69 and strong agreement for CCC 0.70 to 0.89.
Results: 104 women were evaluated, with the following averages: age 40.23 ± 8.49 years, BMI 43.60 ± 4.60 kg/m^2, fat mass 55.32 ± 7.72 kg, lean mass 49.89 ± 6.33kg, fat-free mass 52.31 ± 6.32kg and body fat 52.43 ± 4.17%. We observed a strong agreement for: fat mass (CCC = 0.861), lean mass (CCC = 0.778) and fat-free mass (CCC = 0.794). Percentage body fat had moderate agreement (CCC = 0.527). According to the curve in Lin's chart, BIAMF underestimated percentage body fat and overestimated fat mass, lean mass and fat free mass.
Conclusion: BIAMF showed strong agreement with DXA for the assessment of fat mass, lean mass and fat-free mass, which can be used to analyze these parameters in women with severe obesity.
References: Guedes DP. Procedimentos clínicos utilizados para análise da composição corporal. Rev Bras Cineantropometria e Desempenho Hum 2013;15(1):113–29.
Hinkle DE, Wiersma W, Jurs SG. Applied Statistics for the Behavioral Sciences. 5th Ed. Boston: Hugton Miffin College Division; 2003.
WHO – World Health Organization. Obesity: preventing and managing the global epidemic. Geneva, WHO; 2000. 177p.
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4-MODULE DIET PROTOCOL APPROACH IN A MULTI-DISCIPLINARY WEIGHT LOSS PROGRAM

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