while increasing chondrogenic markers. Hormonally-induced adipogenesis in the presence of the GAG mixture resulted in down-regulation of lipogenic genes (Cebpa, Fasn), up-regulation of oxidative metabolism-related genes (Ppargc1a, Mtco2), and down-regulation of insulin resistance-related adipokines (resistin and retinol binding protein 4).
Conclusion: A GAG mixture can tip the adipogenic/chondrogenic fate balance of multipotent cells towards chondrogenesis and, under adipogenic conditions, favor a more favorable metabolic and secretory gene expression profile of adipocytes.

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PP245-SUN *Outstanding abstract*

PHOSPHORUS SUPPLEMENTATION FOR 3 MONTHS DECREASES BODY WEIGHT AND WAIST CIRCUMFERENCE OF OVERWEIGHT AND OBESE ADULTS

M. Bassil[1], J. Ayoub[2], M. Abou Samra[2], O. Obeid[2]. *[1]Natural Sciences, Lebanese American University, [2]Nutrition and Food Sciences, American University of Beirut, Beirut, Lebanon*

Rationale: We have previously demonstrated that pre-meal Phosphorus (P) intake reduces immediate subsequent food intake by 27–33%. This study aims to investigate the effect of medium term (3 months) phosphorus supplementation on food intake and body weight.
Methods: The study is a double-blind, randomized, placebo-controlled study. Overweight and obese subjects (n = 50) (18 men and 32 women) with a BMI of 31±1.3 kg/m^2 and age of 30±3.0 years were randomized to receive daily placebo (cellulose) or potassium phosphate (375 mg) tablets with each main meal (breakfast, lunch, and dinner) for a period of 3 months. Weight, BMI, waist circumference (WC), HbA1c, blood lipid profile as well as fasting and 2 h OGTT glucose, insulin and GLP-1 were collected at baseline and 3 months after supplementation.
Results: After 3 months P supplementation, the change in weight (−0.44±0.53 kg), BMI (0.16±0.18 kg/m^2) and WC (−3.48±0.60 cm) was significantly ($p < 0.05$) lower compared with placebo (1.13±0.45 kg, 0.42±0.18 kg/m^2 and 0.38±0.4 kg/m^2, respectively). The change in blood glucose, insulin, triglycerides, LDL-C, HDL-C, GLP-1, and $HbA1_C$ did not differ between groups.
Conclusion: Phosphorous supplementation over a period of 3 months was significantly associated with decreased body weight, BMI, and waist circumference. However, there was no significant effect on blood lipid profile, $HbA1_C$, glucose, insulin and GLP-1. The findings support a promising role of the mineral P in treating obesity, especially abdominal adiposity. The exact mechanisms of action and longer term effects still need to be elucidated.

Disclosure of Interest: None Declared.

PP246-SUN *Outstanding abstract*

ALTERED CIRCULATING GUT HORMONE PATTERNS CHARACTERIZE OBESITY AND ARE DIFFERENTIALLY ASSOCIATED WITH INSULIN RESISTANCE

R. Barazzoni[1], G. Gortan Cappellari[1], A. Semolic[1], M. Ius[1], L. Mamolo[1], M. Zanetti[1], P. Vinci[1], G. Guarnieri[1]. *[1]Dept of Medical, Surgical and Health Sciences, University of Trieste, Trieste, Italy*

Rationale: Changes in gut function and gut hormone secretion may contribute to the onset of obesity (body mass index >30 kg/m^2) and insulin resistance. Altered gut hormone profiles may conversely contribute to identify obese patients at risk for obesity-associated metabolic complications. Potential alterations in gut hormone patterns and their associations with insulin resistance in humans remain incompletely defined.
Methods: Plasma concentrations of glucose-inhibitory peptide (GIP), glucagon-like peptide-1 (GLP-1) and PYY were measured by xMAP technology, and total, acylated and desacylated ghrelin (T-, A-, D-Ghr) were measured by RIA in 96 obese (50% Males, 48±1 years) and in 75 age, sex-matched lean individuals (BMI < 25 kg/m^2). Associations with anthropometric parameters [BMI, waist circumference (WC)] and HOMA insulin resistance index were also determined.
Results: GIP, GLP-1 and PYY were higher in obese than in lean group (GIP: 40±2 vs 30±2 pg/ml; GLP-1: 24.7±1.6 vs 9.7±0.2 pg/ml; PYY: 71±3 vs 39±3 pg/ml, all $P < 0.01$). In contrast, T- and D-Ghr (T-Ghr: 630±32 vs 816±29 ng/ml; D-Ghr: 563±31 vs 764±27 ng/ml; $P < 0.05$) but not A-Ghr (67±8 vs 66±4 ng/ml) were lower in obese individuals. GIP, GLP-1 and PYY were positively associated with anthropometric parameters and HOMA ($P < 0.05$). GIP and PYY, but not GLP-1, were associated with HOMA also in multiple regression including BMI or WC. In contrast, T- and D-Ghr were associated negatively with HOMA independently of BMI and WC ($P < 0.05$), with no associations for A-Ghr.
Conclusion: The current data identify high GIP, GLP-1 and PYY with low T- and D-Ghr as obesity-associated alterations in gut hormone circulating patterns. The results further suggest that high GIP and PYY as well as low T- and D-Ghr are independent determinants of obesity-associated insulin resistance.

Disclosure of Interest: None Declared.

PP247-SUN *Outstanding abstract*

COMPARISON OF THE IMPACT OF FAT-SOLUBE VITAMINS DEFICIENCY AFTER GASTRIC BYPASS VS BILIOPANCREATIC DIVERSION

C. Muñoz-Darias[1], P. Suárez-Llanos[1], M.E. Fuentes-Ferrer[2], L.A. Alvarez-Sala-Walther[3], I. Bretón-Lesmes[4].
[1]Endocrinology and Nutrition, Hospital Universitario Nuestra Señora de Candelaria, Santa Cruz de Tenerife, [2]Preventive Medicine, Hospital Clínico San Carlos, [3]Internal Medicine, [4]Endocrinology, Hospital General Universitario Gregorio Marañón, Madrid, Spain

Rationale: This study compares incidence of fat-soluble vitamins deficiency in patients undergoing gastric bypass (BG) and Larrad type biliopancreatic diversion (BPD) analyzing some risk factors in its evolution.
Methods: Comparative study of two retrospective clinical cohorts composed by 97 patients undergoing BG and 133