Program of the 16th Annual Meeting ASEMO-SAMO (in cooperation with AKJ) Thursday, 11th November Inselspital Berne

09.00	Registration	Livestream = Auditorium Rossi only!
	16th Annual Meeting ASEMO-SAMO (in cooperation with AKJ) **Update Lectures and New Issues** *Chairs: Dominique Durrer, Dagmar l'Allemand*	(Ettore Rossi)
09.15 – 09.50	**Hypothalamic Underpinnings of Anorexia Nervosa: AgRP neurons control compulsive exercise and survival in an activity-based anorexia model** (Maria Miletta, Zurich)	
09.50– 10.25	**«Diagnosis and multidisciplinary treatments of atypical eating disorders as muscle dysmorphia, diabulimia,…»** (Patrick Pasi Zurich)	
10.25 – 11.00	**«The Nature and Health Consequences of Weight Stigma» – virtual presentation** (Rebecca Puhl, Connecticut US)	
11.00 – 11.20	Coffee Break	(exhibition area)
11.20 – 12.05	**3 Oral Presentations** *Chairs: Philipp Gerber, Zoltan Pataky*	(Ettore Rossi)
11.20	Abstract 86 (S) – Relationship of preoperative psychiatric profile to short and long-term weight loss after bariatric surgery *Anouk Lüscher, Nathalie Vionnet, Johanna Frantz, Michel Suter, Michael Saraga, Michael Amiguet, Lucie Favre (Lausanne, Rennaz)*	
11.35	Abstract 83 – Regular SSB Consumption Increased Fasting FGF21 Levels in Healthy Lean Men *Bettina Geidl-Flueck, Michel Hochuli, Ágota Németh, Giatgen A. Spinas and Philipp A. Gerber (Zurich, Berne)*	
11.50	Abstract 80 – CSF1R inhibition by PLX5622 has a tissue-specific effect on glucose homeostasis in lean mice *Angela J.T. Bosch, Theresa V. Rohm, Sophia Wiedeman, Lena Keller, Andy J. Y. Low, Marc Stawiski, Leila Rachid, Julien Roux, Daniel Konrad, Stephan Wuest, Daniel T. Meier, Claudia Cavelti-Weder (Basel, Zurich)*	
12.05 – 12.15	Short Break	(exhibition area)
12.15 – 12.45	General Assemly ASEMO-SAMO (members only)	(Ettore Rossi)
12.15 – 12.45	Lunch	(exhibition area)

S = contribution of a student

86 S

Relationship of preoperative psychiatric profile to short and long-term weight loss after bariatric surgery

Author/Address of institution:

Anouk Lüscher (1), Nathalie Vionnet (2), Johanna Frantz (2), Michel Suter (3-4), Michael Saraga (5), Michael Amiguet (6), Lucie Favre (2)
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Background/Introduction:

Bariatric surgery has proven to be an effective therapy for patients with severe obesity. However, it ensures neither adequate weight loss after intervention nor long-term weight stability. Inconsistent results have been reported regarding the relationship between psychological predictors and postoperative weight outcome and this may be explained by the fact that factors influencing initial weight loss may differ from those influencing weight regain. In the present study, we aimed to determine whether preoperative anxiety, depression, eating and alcohol use disorders assessed by psychometric tests were associated with preoperative BMI and both early (1 year) and long-term (5 years) weight loss after Roux-en-Y gastric bypass. The secondary outcome was the exploration of a preoperative psychiatric profile to predict weight outcome.

Methods:

This is a single-center retrospective cohort including 236 patients who underwent Roux-en-Y gastric bypass between 2013 and 2019. The assessed psychiatric variables were depression, anxiety, eating disorders and alcohol consumption obtained through validated, specific psychometric tests (BDI-II, STAIS-S/T, BITE, AUDIT-C) prior to surgery. Results of the psychometric evaluation were analyzed as categorial variables. Follow-up weight loss was obtained yearly until up to 5 years after surgery. A multiple regression analysis of pre-operative BMI was conducted to assess its association with the pre-operative psychiatric profile. A linear longitudinal mixed model was built to study the impact of the pre-operative psychiatric profile on excess BMI loss (EBMIL) after surgery.The most and least favorable psychiatric profiles were deduced form the longitudinal model in terms of EBMIL at 1 year and in terms of subsequent evolution.

Results:

No significant association was found between any of the included psychiatric variables and pre-operative BMI, nor with EBMIL at 1 year. Regarding EBMIL evolution until year 5, the only significant association was for patients with a preoperative unusual eating pattern who regained weight faster than those with a normal eating pattern (each year -2.53%, ± 1.27, p 0.049).
There was a significant difference for EBMIL at 1 year between the most and least favourable psychiatric profiles (p 0.02) but theses profiles showed no predictive value for subsequent weight evolution.

Conclusion:

Preoperative psychiatric profiles assessing anxiety, depression and alcohol use disorder obtained by psychometric instruments has a weak predictive power on short term and long term weight evolution after surgery. Patient with unusual eating patterns from the BITE questionnaire might benefit from close monitoring to improve their long-term weight loss outcome. Further studies are needed to identify preoperative factors of weight outcome after bariatric surgery.

83

Regular SSB Consumption Increased Fasting FGF21 Levels in Healthy Lean Men

Author/Address of institution:

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2Department of Diabetes, Endocrinology, Nutritional Medicine and Metabolism, Inselspital, Bern University Hospital and University of Bern, Switzerland.

Background/Introduction:

Human fibroblast growth factor 21 (FGF21) is primarily produced and secreted by the liver as a hepatokine. It is a metabolic regulator with multiple effects. It regulates simple sugar intake and sweet taste preference, thermogenesis in adipose tissue as well as energy expenditure and has beneficial effects on glucose and lipid metabolism. Serum FGF21 levels are elevated in subjects with metabolic syndrome, NAFLD and coronary artery/heart disease. It is hypothesized that a state of FGF21 resistance exists under these conditions. However, factors that favor FGF21 resistance as well as the underlying mechanisms in FGF21 target tissues (e.g. liver, muscle, adipose tissue and the brain) are unknown.
This study aimed to investigate the effect of sugar sweetened beverage (SSB) intake on FGF21 serum levels in healthy lean men discriminating the effects of glucose, fructose and the disaccharide sucrose.

Methods:

Serum FGF21 levels were measured by ELISA in 83 subjects recruited from our previous randomized controlled trial on SSB consumption. During 7 weeks subjects had to consume daily fructose- (N=22), sucrose- (N=19) or glucose- (N=21) sweetened beverages (80g sugar/day) or to abstain from SSB consumption (control, N= 21).

Results:

The fasting FGF21 concentrations were significantly increased after the 7-week SSB intervention in all SSB groups compared with baseline (medians with IQR in pg/ml at week 7 vs baseline: Glucose 71.3 (80.6) vs 51.4 (27.0), p=0.022; Fructose 52.0 (76.2) vs 45.6 (69.8), p=0.033; sucrose 58.6 (70.8) vs 31.6 (38.6), p=0.002, Wilcoxon-Test). In contrast, FGF21 concentrations did not change in the control group (61.3 (56.7) pg/ml (week 7) vs 49.3 (62.3) pg/ml (baseline), p=0.473). The effects exerted by the glucose, fructose and sucrose sweetened beverages were strong (r >0.40). Analysis of dietary intake showed a compensatory reduction of sugar intake from fruits by SSB consumption (i.e. fructose and sucrose group).

Conclusion:

The increased FGF21 levels induced by regular SSB consumption in lean men may represent an adaptive metabolic response to limit simple sugar intake to maintain energy balance, glucose homeostasis and to prevent hepatic toxicity by excessive CHO consumption. Intriguingly, glucose-, fructose- and sucrose-sweetened beverages similarly increased fasting FGF21 levels. In the long-term, sustained increased FGF21 levels may reduce the physiologic response to FGF21 favoring a state of FGF21 resistance.

80

CSF1R inhibition by PLX5622 has a tissue-specific effect on glucose homeostasis in lean mice

Author / Address of institution:

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Background:

The colony stimulating factor 1 (CSF1) has a pivotal role in promoting proliferation, differentiation and survival of macrophages. Macrophages are known to impact on glucose homeostasis with both beneficial and deleterious effects. The aim of our study was to assess tissue-specific effects of CSF1R-inhibition by PLX5622 on immune cells and glucose homeostasis in lean mice.

Research Design and Method:

Male C57B6/N mice were treated with the CSF1R inhibitor PLX5622 mixed into standard diet (1200ppm) for either 3 weeks or 4-5 months. Immune cells were assessed by flow cytometry and glucose metabolism by glucose tolerance tests (GTT), hyperinsulinemic euglycemic clamps and *ex vivo* glucose stimulated insulin secretion (GSIS). Beta-cell mass was determined by histology.

Results:

Treatment with PLX5622 resulted in depletion of tissue resident macrophages in the brain, lung, colon, adipose tissue, peritoneum and pancreas. Depletion of macrophages was accompanied by an increase in eosinophils and innate lymphoid cells type 2 and elevated IL-6 in the blood, while triglycerides and cholesterol were reduced. These changes resulted in improved insulin sensitivity in peripheral tissues as shown by hyperinsulinemic euglycemic clamps. However, insulin secretion was reduced, leading to glucose intolerance at the late time points during GTT. Beta-cell mass and identity were unaltered, but *ex vivo* GSIS reduced in PLX5622-treated mice. This functional insulin secretory defect was partially restored by retinoic acid, indicating a potential role of macrophage-derived retinoic acid in insulin secretion.

Conclusion:

These data indicate that CSF1R-inhibition in lean mice has beneficial metabolic effects in peripheral insulin-sensitive tissues, while insulin secretion in islets of Langerhans is impaired. A better understanding on the differential effects of specific tissue resident macrophages on glucose homeostasis is crucial for the development of targeted immune-modulatory treatments in metabolic disease.