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statistically superior TWL when compared to ESG with a statistical p-value of 0.02. EWL and BMI change with LSG and ESG were comparable with a statistical p-value of 0.5 and 0.13 respectively.
Conclusion: ESG, as a minimally invasive treatment modality, demonstrates successful clinical outcomes in patients with obesity, in terms of TWL% EWL%, and BMI. Outcomes at 12 months are similar to LSG, except for TWL that was statistically superior with LSG when compared to ESG. This study was limited by heterogeneity and indirect comparison. Well-conducted large scale studies with adequate follow-up time are needed to establish the role of ESG in the treatment of obese patients.
Disclosure: Nothing to disclose

P0677 PERINATAL PROGRAMMING OF INTESTINAL HOMEOSTASIS FOLLOWING EXPOSURE TO A HIGH FAT DIET IN MALE RATS OFFSPRING

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Introduction: Perinatal period is characterized by phases of development with high sensitivity to the environmental factors. Among the risk factors, malnutrition or maternal obesity are now recognized to program children's metabolism and promote the occurrence of obesity or type 2 diabetes during postnatal life. This study aims to identify the effects of maternal perigestational exposure to an obesogenic diet in offsprings. This exposure might increase the occurrence of obesity, associated with metabolic disorders, inflammation and disturbances of digestive function in male offsprings.
Aims & Methods: 8 female Wistar rats were fed a HFD, and 8 control female rats a standard diet (controls), supplemented or not with inulin.
Female rats were exposed to these experimental conditions during a 4-months pre-gestational period as well as during the gestation and lactation periods.
After weaning, 50 male pups were studied at young adulthood (D60), without any treatment during the experiment. Different segments of the digestive tract were studied for histological analysis, metabolic assays, inflammation and intestinal permeability.
Results: Rats from mothers fed a HFD have a higher weight than control pups at weaning time ($p < 0.001$), and the inulin appears to limit this weight gain (HFD *vs* HFDi $p < 0.05$), phenomenon still present at d60 (C *vs* HFD $p < 0.01$; HFD *vs* HFDi $p < 0.01$). Lipid and glycemic assays did not show significant differences. FITC assays didn't show any perturbation of the paracellular intestinal permeability. LPS and pro inflammatory cytokines assays (IL6, IL1β, TNFα) didn't reveal any tissue inflammation.
Conclusion: Our results indicate that pups from mothers fed an obesogenic diet are overweight at both weaning and young adulthood. Interestingly, inulin limits weight gain in these animals.
The obesogenic diet of the mother promotes the occurrence of obesity in male offsprings and an inulin-based dietary supplement could help limiting these deleterious effects. This hypothesis remains to be confirmed after analysis of the intestinal barrier tight junction proteins expression, other inflammatory markers and morphological alterations of the digestive system.
Disclosure: Nothing to disclose

P0678 ENDOSCOPIC SLEEVE PLICATION (ESP) FOR TREATMENT OF OBESITY I-II. PRELIMINARY RESULTS OF 2 SITES WITH THE NEW PATTERN FOR GASTRIC EMPTYING DELAY

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Introduction: Obesity is major disease in our society. Intragastric balloon is the endoscopic gold standard on short time weight loss. Endoscopic plicature can offer us better middle long term results than balloon for its durability.
Aims & Methods: This is a multi-center, prospective pilot study intended to evaluate the safety and efficacy of the Gastric Endoscopic Sleeve Plication procedure (mid & distal body plications) (GESP).
Study was Ethics approved at institutions. Written consent obtained. Indications have been obesity grade II. Use of the Incisionless Operating Platform (IOP) ™ (USGI Medical, San Clemente, CA, USA) with a defined new pattern of disposition of the transmural plications with the g-cath™ EZ suture anchors in the greater curvature shortening and tubulizing the stomach to potentially delay gastric emptying and reduce gastric volume / accommodation for an enhanced physiological effect.
Follow up data will be obtained prospectively every 2 weeks initially for the first 2 months and then monthly for the next 10 months on as part of our long term follow-up program that also emphasized changes in unhealthy eating/lifestyle habits.
Gastric emptying studies previously to the intervention, 2 months after and 6 months after intervention are scheduled. Satiety test are also scheduled during the follow up, basal, 2 months and 6 months after the intervention. Liver test with analytics and fibroscan are also done in those patients basal, 2 months and 6 months.
Results: 39 operations in 39 patients were successfully performed (M: 17 F: 22). Mean BMI 36.9 (Range 31.2 - 40.3). Mean number of anchors placed was 18.3. All patients were discharged ≤ 24 hours. No serious adverse events (SAE). % Mean Total body weight loss at 5 months for the 34 patients was 13.93 ± 4.14 Kg.
Conclusion: The GESP procedure seems to be a safe intervention without significant adverse effects to date. Initial results in weight loss are encouraging. However, long term follow-up and further study remains necessary to assess its value in treating the etiology of obesity.
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P0679 TRANSLATABLE MODEL OF METABOLIC SYNDROME AND LIVER DISEASE IN SMALL ANIMALS USING PRECLINICAL ULTRASOUND

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Introduction: Diagnostic ultrasound (US) using general US imaging devices can be effectively used for preclinical studies in small animals providing dynamic life-time control [1], furthermore, can enhance drug delivery and therapeutic effects with visual treatment monitoring (theranostic).
Aims & Methods: The aim was to develop model of metabolic syndrome in small animals using general US machines for longitudinal in vivo observation and screening large numbers of cases for facilitating further translation.The modeling of metabolic syndrome performed in compliance with the ethical standards and includes conducting an experiment on laboratory animals (mice, rats, murine) with the introduction of high calorie diet

or industrial fat-enriched diet; and further US monitoring using 5-20 MHz probes of diagnostic US machines in grey scale, Doppler, sonoelastography, M-mode detecting tissue movement, US-guided interventions, injection US contrast agents:
1) for precise diagnosis transabdominal US detecting signs of metabolic syndrome via detailed **imaging of internal organs:** liver size, echogenicity, stiffness, kidneys size, structure, Doppler measuring resistance index (RI) on segmental renal arteries, spleen size, muscle thickness at midfemoral level, assessment of visceral vessels, systemic hemodynamics, etc.;
2) for screening all involved animals we measured the visceral fat thickness (threshold considered as 1.5 mm in mice) on sagittal probe position and collected records of panoramic abdominal scans (in sagittal and transverse probe positions) and measured the largest longitudinal liver size (via subcostal approach). Weight, body size, laboratory indices (cholesterol, uric acid, glucose, etc.), microbiome, genetic markers were also determined. After sacrificing we evaluated studied organs.
Results: The model was successfully applied to study effects of new drugs: probiotic strains on high calorie-induced obesity model in BALB/c during 21 days [2] and prebiotic effect on high-calorie diet-induced obesity in rats [3]. US detected development metabolic syndrome, endogenous intoxication syndrome, visceral obesity and liver and kidney dysfunction in mouse and rats. Ultrasound data showed visceral obesity, injury of the liver and organs in all experimental animals. We revealed nephropathy signs (thinning, increasing echogenicity of kidney parenchyma, detecting increasing RI in renal arteries (over 0.7) was feasible in rats. Studies using the models demonstrated efficacy of studied strains, substances improving parameters during experiment. All observed changes were confirmed post mortem.
Conclusion: The method of modeling is reliable, allows to monitor metabolic syndrome signs with high translation potential reflecting development disease in humans.
References: 1. Bubnov RV. The use of ultrasound equipment of general use for in vivo study of cerium dioxide nanoparticles introduction in mice. Ultrasound Med Biol. 2011, 37 (8): 1-S162. https://doi.org/10.1016/j.ultrasmedbio.2011.05.750 2. Bubnov RV, et al. Comparative study of probiotic effects of lactobacillus and bifidobacteria strains on cholesterol levels, liver morphology and the gut microbiota in obese mice. EPMA J. 2017;8(4):357-76. https://doi.org/10.1007/s13167-017-0117-3. 3. Konopelniuk VV, et al. Efficacy of Fenugreek-based bionanocomposite on renal dysfunction and endogenous intoxication in high-calorie diet-induced obesity rat model–comparative study. EPMA J. 2017. https://doi.org/10.1007/s13167-017-0098-2
Disclosure: Nothing to disclose

P0680 ASSESSMENT OF METABOLIC SYNDROME IN INFLAMMATORY BOWEL DISEASE REVEALED FTO VARIANT RS9939609 AS A NOVEL GENETIC MARKER OF CROHN'S DISEASE

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Introduction: Metabolic syndrome (MeS) and inflammatory bowel disease (IBD) share common pathophysiological features including chronic inflammation in visceral adipose tissue, but the interplay still remains unrevealed. Great interest has been recently devoted to the association of FTO gene and obesity, although the biological function is still unclear. FTO is a member of a superfamily of Fe (II)-and 2-oxoglutarate-dependent dioxygenases and presents a nucleic acid demethylase. The proposed FTO pathophysiological mechanism includes alterations of methylation-demethylation states of genes expression in metabolically active tissues.
Aims & Methods: Newly diagnosed 94 Crohn's disease (CD) and 98 ulcerative colitis (UC) patients and 91 non-IBD controls with parameters of MeS were analyzed for FTO rs9939609 variant using PCR-ARMS (Polymerase Chain Reaction - Amplification Refractory Mutation System) method.
Results: We analyzed distribution of genetic variant FTO rs9939609, previously associated with obesity, in our study population. The genotype distribution was in Hardy-Weinberg equilibrium in each and total analyzed group. Results showed that FTO AA genotype was more frequent in CD than UC and control group, 29.8%, 23.5% and 14.3%, respectively. It has been demonstrated that AA genotype was significant predictor of CD occurrence (p = 0.01), adjusted for age and gender in the logistic regression model. Compared to TT and TA carriers, carriers of AA genotype had 2.6 higher odds for CD development (OR = 2.6 95% CI [1.2 - 5.4])
Conclusion: The nutrigenetic approach in IBD could improve understanding of obesity-associated complex diseases and contribute to better risk stratification, considering that genetic markers are not influenced by confounding factors such as education, physical activity, social-economic status and diet. Association of FTO variant with CD could direct further nutrigenomic studies in IBD research.
Disclosure: Nothing to disclose

P0681 MICROBIOTA CHANGES INDUCED BY MICROENCAPSULATED SODIUM BUTYRATE

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Introduction: Inflammatory bowel disease (IBD) is characterized by severe inflammation of the small bowel and/or the colon leading to recurrent diarrhea and abdominal pain. Butyrate represents one of the final product of saccharolytic fermentation of complex and nondigestible polysaccharides by anaerobic bacteria and has shown anti-inflammatory and regenerative properties, providing symptomatic relief when orally supplemented in patients suffering from a various range of colonic diseases(1). Limited data are available on butyrate effectiveness in patients with IBD due to the difficultines of proving an adequate concentration of butyrate in the colon.
Aims & Methods: We investigate the effect of a microencapsulated form of sodium Butyrate (MSB, Butyrose^{R}, SILA, Noale, Italy) on the faecal microbiota of patients with IBD. In this prospective-randomized-placebo-controlled study, 49 IBD patients, 19 CD and 30 UC with mild-to-moderate clinical activity were enrolled . Eighteen volunteers were recruited to provide a healthy microbiota model of the local people. Patients with extensive surgery were excluded. After stratification by clinical assessment, colonoscopy, and fecal calprotectin (FC) levels, the patients were randomized to oral administration of MSB (1800 mg/die) or placebo for 2 months, in addition to conventional therapy. Clinical activity was defined according to HBI in case of Crohn's Disease (CD) and Mayo score in case of ulcerative colitis (UC). Before (T0) and after (T1) butyrate treatment, stool samples were collected for faecal microbiota assessment analysis by 16S ribosomal RNA Illumina MiSeq sequencing. Patients completed the quality of life questionnaire in IBD (IBDQ) on T=0 and T=1
Results: We confirmed the evidence of a significant difference (p< 0.001) between the microbiota of healthy controls and IBD patients. MSB induced similar changes in the microbiota of IBD patients by increasing the bacteria able to produce shortchain fatty acids (SFCA). However, an increased abundance of butyrogenic colonic bacteria (including genera Butyricicoccus and Subdoligranulum) were observed in CD patients, whereas in UC patients we observed a major increase of Lachnospiraceae (sPLSDA analysis). Clinically, when only patients with calprotectin levels above 250ug/g for CD and 150ug/g(2) for UC were considered, a 30% decrease of calprotectin levels were observed in 67% of CD patients treated with MSB versus 33.3% in those treated with placebo. Subjective improvement in QoL based on IBDQ was significantly observed either in the treatment (p=0.0046) and in placebo (p=0.039) group. However, a greater effect was observed among the UC patients.
Conclusion: Microencapsulated sodium butyrate supplementation showed an increase of butyrogenic and SCFA bacteria stimulating growth with a mimicking prebiotic effect increasing the production of endogenous and physiological SCFAs with a marked improvement of QoL and reduction of the level of inflammatory markers.
References: [1] Duncan L.P., et al., (2004), Restricted distribution of the butyrate kinase pathway among butyrateproducing bacteria from the human colon., J Bacteriol , 2099-106 [2] Lin JF,et al., (2014), Metaanalysis: fecal calprotectin for assessment of inflammatory bowel disease activity, Inflamm Bowel Dis, 1407-15
Disclosure: Nothing to disclose

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