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“Looking For Better Outcomes in Metabolic Surgery”

Program and Abstracts

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The VIIIth National Symposium of Bariatric and Metabolic Surgery

“Looking For Better Outcomes in Metabolic Surgery”

Bucharest, Romania, December 10, 2016

Symposium Director:

**Catalin Copaescu, MD, PhD
Associated Professor of Surgery**

Program and Abstracts

The VIII th National Symposium of Bariatric and Metabolic Surgery

“Looking For Better Outcomes in Metabolic Surgery”

Bucharest, Romania, 10 December 2016

Symposium Director - Catalin Copăescu

SCIENTIFIC PROGRAM

- 08.30 - 08.40 Opening Ceremony**
Symposium Director - Cătălin Copăescu
RSS President - Silviu Constantinoiu
ARTCO President - Nicolae Iordache
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Dragan Micic (Belgrade, Serbia)
Marius Nedelcu, (Romania)
- 08.40 - 08.55 The Association Between Eating Disorders and Obesity**
Oltea Joja (Bucharest, Romania)
- 08.55 - 09.05 New Drugs for Weight Loss – An Efficient Competition or Complementary to Bariatric Surgery?**
Dragan Micic (Belgrade, Serbia)
- 09.05 - 09.20 Surgenomics: A new Look in Pharmacogenomics and Personalized Medicine in Bariatric and Metabolic Surgery**
Eren Taschin (Istanbul, Turkey)
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Snezana Polovina (Belgrade, Serbia)

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- 09.45 - 09.55 **Metabolically unhealthy obese before and after sleeve gastrectomy (OP-002)****
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Alina Pârvu (Cluj-Napoca - Romania)
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Gabriela Tanko, Cătălin Copăescu (Bucharest, Romania)
- 10.05 - 10.15 **Hiperinsulinemic Hipoglycemia after Gastric Bypass – Actual Diagnostic and Treatment (OP-004)****
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Milos Bjelovic (Belgrade, Serbia)
Ciprian Duță (Timișoara, Romania)
Dan Ulmeanu (Bucharest, Romania)
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- 11.40 - 11.50 **Outcomes of Bariatric Surgery can be improved by Special Follow-up Program? (OP-007)****
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Cosmin Ion Puia (Cluj-Napoca, Romania)
Cristian Boru (Romania)
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Yury Yashkov , Moskow, Rusia
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Nicolae Iordache (Bucharest, Romania)
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N. Patrick (Abu-Dhabi, UAE)
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- 17.30 - 17.45** **Diluted Chloramine in the Treatment of Upper Gastric Fistulae – A case report (OP-021)**
C.I. Puia, P. Puia (Cluj Napoca, Romania)
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- 18.30** **Final Remarks. Closing Ceremony**
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POSTER SESSION

Our Experience in Metabolic Surgery, Gastric Sleeve Group (P-001)

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Laparoscopic Concomitant Gastric Sleeve and Repair of a Morgany Larrey Hernia – case Report (P-002)

D.E. Mihaila, I. Slavu, V. Braga, L. Alecu (Bucharest, Romania)

Challenges and Pitfalls of Laparoscopic Sleeve Gastrectomy and Hiatal Hernia Repair In Situs Inversus Totalis (P-003)

Maura Priboi, Cătălin Copăescu (Bucharest, Romania)

Effect Of Lifestyle Changes On Hormonal Profile In Obese, Type 2 Diabetes Patients With A Metabolic Surgery Indication (P-004)

Diana Simona Stefan, Daniela Lixandru, Laura Petcu, Ariana Picu, Bogdan Smeu, Catalin Copăescu, Constantin Ionescu-Tirgoviste, Cristian Guja (Bucharest, Romania)

Endoplasmic Reticulum Stress And Autophagy In Human B-Cells Exposed To Sera From Obese Type 2 Diabetic Patients; Beneficial Effects Of Improving Glycemic Control (P-005)

Madalina Dumitrescu, Alina Constantin, Miruna Nemezc, Cristian Guja, Bogdan Smeu, Gabriela Tanko (Bucharest, Romania)

ORAL PRESENTATIONS (OP)

OP-001

BARIATRIC SURGERY INFLUENCE ON ENDOMETRIAL CANCER

Irina Bălescu, Cătălin Copăescu

Bucharest, Romania

Endometrial cancer remains one of the commonest gynecologic malignancies among women worldwide, with an increasing incidence especially among obese postmenopausal women. It has been demonstrated that there is a strong correlation between obesity, glucidic metabolism, insulin resistance and inflammatory status and type I endometrial cancer. Beginning from this point attention was focused on studying the potential effect of weight loss on the endometrial lining and it has been demonstrated that bariatric surgery could induce a reversal of the endometrial premalignant modifications. We present a literature review and our preliminary results regarding the potential protective effect of bariatric surgery against type I endometrial cancer in obese postmenopausal women.

OP-002

METABOLICALLY UNHEALTHY OBESE BEFORE AND AFTER SLEEVE GASTRECTOMY

Florinela Catoi Galea¹, Romeo Florin Galea², Aurel Mironiuc², Ștefan Chiorescu², Alina Pârvu¹

Pathophysiology Department¹, Second Surgical Clinic²

"Iuliu Hațieganu" University of Medicine and Pharmacy Cluj-Napoca

Central obesity is often associated with insulin resistance, type 2 diabetes, hypertension, dyslipidaemia, systemic inflammation and cardiovascular disease. However, a body mass index higher than 30 kg/m² does not necessarily induce metabolic disorders. Some obese individuals, classified according to their BMI, may have better metabolic profiles than predicted. To be more specific, the prevalence of metabolically healthy obese ranges between 10% and 45%. Therefore, in obese patients, the metabolic health can be considered a dynamic condition and not a definitive state. In this respect, the role of different fat depots on the development of metabolic complications is still open to controversy. While the resolution/improvement of metabolic comorbidities is already well known in metabolically unhealthy obese patients submitted to bariatric/metabolic surgery, it seems that the same treatment has a favourable impact and might prevent/delay the onset of metabolic disorders in case of metabolically healthy obese.

OP-003**“ C.R.E.D.O.R” - A RTC FOR THE EFFICIENCY OF METABOLIC SURGERY VERSUS CONSERVATIVE TREATMENT IN PATIENTS WITH POOR CONTROL OF T2DM - 1 YEAR RESULTS**

Bogdan Smeu¹, Constantin Ionescu-Tirgoviste², Cristian Guja², Gabriela Tanko³, Daniela Lixandru⁴, Cătălin Copăescu¹

¹*Ponderas Academic Hospital, Bucharest, Romania*

²*Institute of Diabetes, Nutrition and Metabolic Diseases “Prof. Dr N. Paulescu”, Bucharest, Romania*

³*Institute of Cellular Biology and Pathology “Nicolae Simionescu” of the Romanian Academy, Bucharest, Romania*

⁴*“Carol Davila” University of Medicine and Pharmacy, Bucharest, Romania*

Background: The T2DM remission after metabolic surgery opens new pathways for basic research for better understanding its pathogenesis and provides a hope for reducing the long term medical expenses for these patients.

Aim: to develop a selection protocol for T2DM patients with obesity eligible for metabolic surgery (laparoscopic sleeve gastrectomy), after comparing the treatment efficacy with the current standard treatment of T2DM.

Methods: C.R.E.D.O.R. (Collaborative Romanian Efforts for Diabetes and Obesity Retrench) is a prospective randomized trial control with 38 patients in two groups. The surgical group (19 patients) underwent laparoscopic sleeve gastrectomy in a Center of Excellence in Bariatric and Metabolic Surgery (Ponderas Academic Hospital) by one surgical team and the conservative group was treated by one medical team from “Prof. N. Paulescu” National Institute for Diabetes, Nutrition and Metabolic Diseases, according to up to date clinical guides for diabetes mellitus.

Results: The surgical group obtained, as expected, the most statistically significant results after one year, in BMI (39.96 to 28.7kg/m², p<0.000001), the abdominal circumference (134 to 102 cm, p<0.0001421), glycaemia (197.68 to 96.33 mg/dl, p<0.000001), HbA1c (8.4 to 5.9%, p<0.0001426), HDL (34.2 to 50.7mg/dl, p<0.000001), TGL (178.23 to 86.26mg/dl, p<0.000001), and almost all metabolic and oxidative stress parameters. Only 2 patients from the surgical group are on diabetic medication one year after surgery (2/19) with reduced doses, compared with all 19 from the medical group (19/19).

Conclusions: Sleeve gastrectomy proves to be one of the most effective metabolic procedure available, with statistically significant results on T2DM patients with obesity.

Acknowledgement: We acknowledge the financial support from the Romanian Academy and from MEN-UEFISCDI through „Partnership in priority areas” programme, project code: PN-II-PT-PCCA-2013-4-2154 (CREDOR).

OP-004**HIPERINSULINEMIC HIPOGLYCEMIA AFTER GASTRIC BYPASS – ACTUAL DIAGNOSTIC AND TREATMENT**

Raluca Oana Munteanu

Bucharest, Romania

Hypoglycemia is defined by Whipple’s triad. Severe hypoglycemia characterized by neuroglycopenic symptoms is a complication that may occur years after gastric bypass and it is different to the Dumping syndrome. The pathophysiological mechanisms described are increasing beta-cell mass and function, decreased secretion of ghrelin, changing the metabolism of bile acids, changes in gut microbiota. Clinical and laboratory diagnosis consist of fasting hypoglycemia (<55mg/dl), hypoglycemic symptoms, hyperinsulinemia (>3uUI/ml), suppressed B-OH butyrate and exclusion of other causes of hypoglycemia (test renal function, hepatic, CSR insufficiency, alcohol, hypoglycemic medications, MEN). Post gastric bypass hiperinsulinemic hypoglycemia should initially be treated with a high-protein, high-fiber, low-carbohydrate diet and then, if hypoglycemia persists, by medication (acarbose, calcium channel blocker, octreotide, diazoxide). Gastric bypass reversal and pancreatic resection surgery are a last resort for patients with severe neuroglycopenia when dietary modification and drug therapy fail. The diagnostic and therapeutic protocol used in PONDERAS ACADEMIC HOSPITAL for post gastric bypass hiperinsulinemic hypoglycemia is presented.

OP-005**MANAGEMENT OF RESPIRATORY PROBLEMS IN OBESE SURGICAL PATIENTS**Daniela Godoroja*Ponderas Academic Hospital – Center of Excellence in Bariatric and Metabolic Surgery – Bucharest, Romania*

Background and Aim: There is an exponential reduction of functional residual capacity (FRC) and expiratory reserve volume (ERV) with increasing BMI, this effect being more prominent with upper body fat distribution of obesity. High oxygen consumption and increased minute oxygen demand have consequences the rapid decrease of arterial oxygen levels following the cessation of breathing. Obstructive sleep apnoea (OSA) and obesity hypoventilation syndrome (OHS) cause larger decreases in lung volumes and compliance and increased closing volumes and oxygen requirement leading to: rapid desaturation during induction of general anaesthesia and increased the incidence of postoperative desaturation, respiratory failure and respiratory arrest, postoperative cardiac events and ICU admission. All these pathophysiological changes impose a specific treatment in anaesthesia and postoperative care for obese surgical patient, to minimise risk and improve the outcomes.

Methods: The anaesthetic management of obese surgical patients includes the following pathways: Pre-operative preparation: 1. Respiratory assessment -Arterial saturation in room air, Spirometry, OSA/OHS diagnostic, SpO₂ < 95% on air, Forced vital capacity < 3 l or forced expiratory volume in 1 s < 1.5 l or ERV < 0,55, Serum bicarbonate concentration > 28 mmol.l⁻¹; 2. Airway Risk assessment; 3. An appropriate airway management plan refers to the process of decision making for a standard induction, a rapid sequence induction or an awake intubation. Induction of general anaesthesia includes the following: 1. RAMP-position with the ear level with the sternal notch, and the arms away from the chest; 2. Preoxygenation; 3. CPAP-10 cm H₂O; 4. Drug dosing - based upon lean body weight and titrated to effect, avoid opioids and sedatives and use NMB monitoring; 5. Plan of routine tracheal intubation & airway rescue with the incorporation of modern optical/video devices, supraglottic airways, FOB and invasive airway. A safe anaesthetic peri-operative strategy includes the following: (a) Avoidance of general anaesthesia and sedatives where possible, (b) Use of short acting agents (c) Use of depth of anaesthesia monitoring techniques to limit anaesthetic cumulation, (d) Use of neuromuscular monitoring to maintain a level of block compatible with surgery and to ensure complete reversal of block before waking the patient (f) Maximal use of local anaesthetic and multimodal opioid-sparing analgesia, (g) Maintaining the head at 45 degrees.

Postoperative care: Full monitoring should be maintained in the post- anaesthesia care unit (PACU). The patient should be managed in the sitting position with 45 head-up tilt. Oxygen therapy should and monitoring of oxygen saturations until mobile postoperatively. Use the personal CPAP and Non Invasive Ventilation in patients with moderate severe OSA. If long-acting opioids are required and the patient is not stabilised on CPAP pre-operatively, then the use of intensive care is recommended.

Conclusions: Obese desaturate sooner and faster and we have less time for successful intubation. Proper positioning, oxygen and PEEP help to improve the apnoeic time. An appropriate strategy for anaesthesia and postoperative care improves respiratory and cardiac function reducing the postoperative complications.

OP-006**NON-INVASIVE VENTILATION IN OBESITY**Elena Cristina Mitrofan¹, Dan Timofte²*¹Clinic of Pulmonary Diseases; ²University of Medicine and Pharmacy, Iasi, Romania*

Obesity is associated with obstructive sleep apnea (OSAS), obesity –hypoventilation syndrome (OHS). Overlap syndrome is an association between COPD and OSAS. Acute hypercapnic respiratory failure is an increasing cause of admission in intensive care unit. Using non invasive ventilation (NIV) has become the main modality of ventilatory assistance for these patients. The specificities for NIV are bi-level mode efficacy, mandatory back-up frequency, additional oxygen therapy, positive inspiratory pressure elevated for OHS, or associated COPD and SAOS, positive expiratory pressure elevated for OSAS. If failure of bi-level mode, NIV with volume control should be tested. In patients with COPD and OHS, an associated nocturnal hypoventilation can indicate to deliver domiciliary NIV, after discharge from the hospital. For stable SAOS, continuous positive airway pressure will be indicated after an initial titration for SAOS.

OP-007

OUTCOMES OF BARIATRIC SURGERY CAN BE IMPROVED BY SPECIAL FOLLOW-UP PROGRAM?

D. Barjica, C. Lazar, A. Dobrescu, G. Verdes, G. Notidi, C. Duta

Timisoara, Romania

Background: The aim of our study is to determine if a specially directed program improves weight loss after sleeve gastrectomy.

Methods: Our special directed program was introduced from 2012 involves setting exhaustive controls targets at fixed intervals after sleeve gastrectomy. We compared the patients between 2012 and 2015 with the patients from 2009 to 2012 when the follow-up program was standard.

Results: A total of 387 patients were included, with 215 patients in the special weight loss program. The 2 groups were similar in terms of gender distribution, ethnicity distribution, age, and preoperative weight, preoperative body mass index, and surgical technique. The follow-up rates at 3, 6, 9, and 12 months for patients in the special program was 84.5%, 85.2%, 69.7%, and 87.2%, respectively, compared with 65.9%, 58.3%, 61.2%, and 48.3% for the standard program. The mean excess weight loss at 3, 6, 9, and 12 months were 40%, 54%, 62%, and 72%, respectively, for the special program group, and 36%, 48%, 54%, and 62%, respectively, for the standard program, where statistical significance ($P < .005$) was achieved at 12 months.

Conclusion: Our results suggest that a special, well-designed protocol may improve weight loss outcomes after laparoscopic sleeve gastrectomy.

OP-008

FOLATE DEFICIENCY MANAGEMENT AFTER BARIATRIC SURGERY

Ruxandra Pleșa

Ponderas Academic Hospital, Center of Excellence in Bariatric and Metabolic Surgery, Bucharest, Romania

The MTHFR gene is implicated in making an enzyme called methylenetetrahydrofolate reductase. This enzyme plays a role in the aminoacids metabolism (the methylation of homocysteine to methionine), it participates in the chemical reactions involving the metabolism of the B9 vitamins, it is important for the DNA repairing process. There are two types of mutations: MTHFR C677T and MTHFR A1298C. The genetic change of the MTHFR gene, depending of the type of change, is related to several health conditions such as: birth defects, miscarriage, the bad use of the dietary folates and the synthetic form -folic acid. The polymorphisms in the MTHFR gene may be a possible risk factor for a variety of other common conditions such as hearth disease, stroke, high blood pressure, preeclampsia, glaucoma, psychiatric disorders and some types of cancers, vascular disease. It is still unclear what role changes in the MTHFR gene play in these conditions. There are also a large number of epigenetic factors likely to determine the risk of developing the above mentioned health conditions. Diet, bariatric interventions may play this role; although the mutation is not inherently dangerous, genes react differently to the foods we eat and to the lifestyle we have. Symptoms related with the MTHFR gene are: depression, gastrointestinal issues, folate deficiency, high levels of homocysteine, autoimmune diseases. The MTHFR change is cited to be largely spread in the general population ,according to a local genetic laboratory and also the folate deficiency is very frequent detected among the obese patients undergo a bariatric intervention. When epigenetic (a very restrictive diet following a bariatric procedure) meets an MTHFR gene change in a patient with folate deficiency, the risk for the above mentioned health conditions to appear is very high. It becomes an even bigger problem when the recommendation for treatment is the daily dose of folic acid. Our paper presents such a case of an obese patient undergoing a bariatric procedure and the evolution after the treatment with the right form of folic acid (metafolin).

OP-009**GERD AFTER BARIATRIC SURGERY – DIAGNOSTIC AND THERAPEUTIC SOLUTIONS**Ionuț Hutopilă, Cătălin Copăescu*Ponderas Academic Hospital – Center of Excellence in Bariatric and Metabolic Surgery – Bucharest, Romania*

Background: Obesity and gastroesophageal reflux (GORD) are frequently encountered. Up to 50% of the obese patients have reflux due to the presence of generating factors (hiatal hernia; large waist circumference, high intra-abdominal pressure, decreased lower esophageal sphincter tone, increased frequency of transient lower esophageal sphincter relaxations). To lower the risk factors or to eliminate them, weight loss and - where it is the case - appropriate recalibration of the esophageal hiatus, are the recommended. For selected obese patients with GORD, bariatric surgery is the optimal surgical treatment, but the results depend on the type of surgery.

Aim: The purpose of the study is to set criteria for choosing an appropriate type of surgery for obese patients with GORD and how to manage them postoperatively.

Method: The type of bariatric is chosen in respect with GORD or hiatal hernia presence. Several proposed surgical options are analysed in this respect. (1) In patients with severe esophagitis grade C,D, or Barrett's esophagus, the laparoscopic Roux - en - Y gastric bypass is the choice. (2) In the cases with light/ medium esophagitis, other options like laparoscopic adjustable gastric banding, laparoscopic sleeve gastrectomy, gastric plication (depending on eating behavior, degree of obesity) are considered. (3) In particular cases, when the patients refuse bariatric surgery, Short Floppy Nissen or Toupet fundoplication is used.

Results: After bariatric surgery, the majority of the patients encounter a good control of the reflux. Meanwhile, in a significant number of patients, GORD may persist or can occur "de novo" after bariatric surgery. The postoperative follow up program is mandatory to identify and offer therapeutic solutions to these patients. (a) Most of the patients have GORD unexplained by an anatomical impairment and no surgical solution is required. Conservative pharmacological treatment (proton pump inhibitors, prokinetic therapy) and changing eating behavior, are recommended with a successful control. (b) If GORD is caused by anatomical/mechanical modifications like stenosis, band slippage, hiatal hernia occurrence, the therapeutic solutions are endoscopic (dilatations) or surgical (repositioning of the lap band, removal of the lap band, recalibration of esophageal hiatus, conversion to other procedure - laparoscopic Roux-en-Y gastric bypass or laparoscopic cardiopexy with round ligament – Narbona Arnau). The preliminary results of the study will be presented.

Conclusions: Complete preoperative evaluation and choosing the optimal intervention are conditions that lead to a better control of GORD at the obese patients. The treatment of GORD after bariatric surgery for majority of patients consists in drug therapy (PPI, prokinetic) and very few of them require surgical solution. GORD and obesity are chronic disease that need treatment in a multidisciplinary team and active follow-up.

OP-010**COMPLETE POSTERIOR APPROACH – 3 PORTS SLEEVE GASTRECTOMY**N. Marius¹, B. Moldovan¹, C. Rad¹, D. Pocreata¹, N. Patrick²¹Brasov, Romania; ²Abu-Dhabi, UAE

Introduction: Laparoscopic-Sleeve-Gastrectomy (LSG) represents the most frequent bariatric procedure performed worldwide. Multiple techniques are described. Herein, we provide a didactic video with the technical details regarding the complete posterior approach for reduced port surgery for LSG.

Material and Methods: The standard technique includes 5-ports. The standard fourth trocar for the liver retractor is replaced by the left hand of the surgeon, who uses the posterior part of the stomach to lift up the left lobe of the liver. After complete dissection of the posterior attachments of the fundus, the left crus is identified and represents the main landmark of the dissection. From posterior to anterior, a tunnel is created at the level of angle of His. During dissection, the last short gastric vessels are non-divided, playing the role of the assistant exposure (the fifth trocar).

Results: Once the stomach has been freely dissected, a 37-Fr calibration tube is inserted and the stomach is then transected, respecting two principles. First, particular attention must be paid to the incisura angularis in order to avoid a stricture at this point. The left hand stapling offers the correct direction "to respect the incisura angularis". Second, in order to perform an

efficient procedure, it is important to remove the whole gastric fundus. For this, an anterior eversion of the gastric fundus is performed for the last two firings.

Conclusions: Dividing all connective tissue and vascular attachments of the stomach, especially in the posterior part, creates a tight and symmetric sleeve. A complete mobilization of the stomach is essential to understanding the anatomy.

OP-011

MINI GASTRIC BYPASS WITH 4K TECHNOLOGY AS TREATMENT OF MORBID OBESITY IN PATIENT WITH VENTRICULOPERITONEAL SHUNT (VIDEO)

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Ventriculoperitoneal (VP) shunt placement is used to treat idiopathic intracranial pressure. Obesity is a risk factor related to shunt migration, dislodgement, and subsequent failure due to increased intraabdominal pressure. Minigastric bypass consists in both restrictive and malabsorptive mechanisms, and indications to this procedure as an efficient primary and redo procedure are increasing lately. Technology can always improve the surgical act, and 4K vision is spreading in many operating rooms. Laparoscopic approach is subject to continuous change. Ultrahigh definition is the next development in video technology, it delivers fourfold more detail than full high definition resulting in improved fine detail, increased texture, and an almost photographic emulsion of smoothness of the image. New 4K ultrahigh-definition technology might remove the current need for the use of polarised glasses. We present the laparoscopic one anastomosis gastric bypass, done with the new 4K technology, as primary bariatric procedure for morbid obese patient with VP shunt.

OP-012

LAPAROSCOPIC TRANSGASTRIC PROCEDURES IN BARIATRIC SURGERY CANDIDATES - A SINGLE CENTER EXPERIENCE

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Background: The bariatric surgery candidates are routinely explored by upper endoscopy and sometimes previously unexpected pathologies or situations (gastric tumors, phytobezoars, foreign bodies – migrated bands) are discovered. Some of these instances will be dealt by endoscopic approach and some by laparoscopic means.

Objective: we present our experience with laparoscopic transgastric procedures performed between 2011-2016 in Ponderas Hospital – Centre of Excellence in Metabolic and Bariatric Surgery in bariatric surgery candidates.

Methods: All the candidates for bariatric surgery underwent upper endoscopy. The endoscopic findings and the therapeutic specifically chosen solution were analysed.

Results: 13507 candidates for bariatric surgery underwent upper endoscopy and in 46 (1,31%) we found gastric tumors, phytobezoars and migrated bands. 29/46 (63%) cases were treated by endoscopic approach (band removal, submucosal tumor excision, phytobezoars extraction) and 17/46 (37%) by laparoscopic transgastric approach (11 band removals and 6 tumor excisions). Laparoscopic transgastric procedures were successfully performed in all patients. Mean operation time was 105 min (50-165 min). One patient presented upper gastrointestinal tract bleeding from the intragastric staple line – treated with an endoscopic hemostatic clip. The mean hospital stay was 2,8 days (2-6 days).

Conclusions: the laparoscopic transgastric approach is a safe and effective technique, and can be taken in consideration when dealing with band removals and gastric tumors in patients candidates to bariatric surgery.

OP-013**LOOP GASTRIC BYPASS – THE STEP BY STEP TECHNIQUE (VIDEO)**

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Background: Loop Gastric Bypass procedure has proven to be technically simple, safe, and effective, resulting in durable weight loss and with major benefits on main comorbidities. However, the outcomes are highly depended on the performance of the surgical technique performance. We aim to present the operative technique for laparoscopic loop gastric bypass (LLGBP) as a teaching experience for less experienced surgeons.

Methods: In this video, it is presented the procedure of laparoscopic loop gastric bypass in the hands of a young surgeon, outlining the main operative steps, and identifying the difficulties in performing this kind of surgery for the less experienced ones.

Results: As all the steps of the procedure were followed according to a specific technical protocol, no intraoperative complications were encountered. An acceptable longer operative time was recorded.

Conclusion: Obesity surgery has various alternatives for metabolic patients and better outcomes are targeted. Choosing the laparoscopic loop gastric bypass is a decision based on well-established criteria and the surgical technique should follow a specific protocol. The technical aspects demonstrate the experience of the surgeon performing the procedure, the know-how and useful tips and tricks, too.

OP-014**SURGICAL PROCEDURES FOR OBESE PATIENTS - OTHER THAN BARIATRICS**

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Bucharest, Romania

The paper shows a clinical case of a male 49 years morbidly obese patient, BMI – 76 kg/m², with a lot of other pathologies associated, who was suffering of acute appendicitis mis-interpreted as a pericecael abcess due to a appendicular mass. The patient died in the 11 postoperative day. Objective: We want to point out what went wrong and what should have been done in order to decrease the number of such cases.

Methods: The study of medical documents, intraoperative record. Case specifics: superobese patient, hard to investigate in our public hospitals due to the lack of medical resources for this kind of patients. Usually, this patients have a lot of other pathology that need close attention and correction.

Discussions: We wanted to underline that the number of obese patients is rising, that means we have an increasing number of obese patients with surgical pathology. There are a few clinical centers that can manage such patients in our country, most of them private hospitals. We need public centers of treatment for obese patients that can manage such cases and surgeons special trained for.

OP-015**NOTES-GASTROJEJUNOSTOMY VS ENDOSCOPIC ULTRASOUND (EUS)-GUIDED GASTROJEJUNOSTOMY IN MANAGING OBESITY – A FEASIBILITY STUDY ON PIGS**

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Background: Over the past years, endoscopic therapies have been evaluated, as they are considered the next step in minimal invasive surgery, with multiple advantages as compared with conventional or laparoscopic interventions. With laparoscopic gastric bypass in treating morbid obesity as the golden standard, alternative endoscopic procedures are currently tested, with the ultimate goal to develop a therapeutic method with less physical discomfort and faster recovery for patients.

Objective: To compare Natural Orifice Transluminal Endoscopic Surgery (NOTES) versus Endoscopic Ultrasound (EUS)-Guided Gastrojejunal Bypass (EUS-GJJ) in experimental pig models.

Materials and methods: Under general anesthesia, 4 pigs were subjected to a gastrojejunal bypass (GJJ), being divided in two groups. NOTES intervention were performed with an endoscope which allowed gastric incision and peritoneal visualization. Consecutively, laparoscopic access was realized and a jejunal loop was placed near the gastric wall incision and sutured. EUS-guided procedure consisted of an enteric balloon inflated away from the duodenum and visualized under EUS-imaging. The next step was to deploy a lumen apposing hot metal stent (Xlumena, Mountain View, USA) nearby the balloon on EUS-guidance. All pigs were clinically followed for the next two weeks concerning food intake, weight and behavior, and necropsy was subsequently performed

Results: Technical success was observed in both experiments. The mean time for EUS-GJJ was shorter than NOTES-GJJ with almost 20 minutes. All animals showed normal eating behavior without any sign of infection within the follow up. No stent migration and no suturing complications were observed. Necropsy showed complete adhesion between the stomach and the jejunum wall in all cases.

Limitations: Small number of animals. The pylorus was not closed.

Conclusion: Both procedures prove to be technically safe, with no side effects on follow-up. EUS-GJJ seems to be more accurate for choosing the specific length of the jejunum when using an enteric balloon, and much faster as compared to a NOTES technique.

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OP-016

CONCOMITANT SURGICAL TREATMENT OF OBESITY AND SURGICAL COMORBIDITIES

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The objectives: Metabolic surgery is performed now in many centers with convincing results. The bariatric patients could present both medical and surgical comorbidities. Concomitant surgical treatment of these should take into account the higher risk associated with two simultaneous procedures.

Material and method: There were included patients operated at the 3rd surgical unit between June 2012 and October 2016 using at least one type of laparoscopic bariatric procedure. Data was retrospectively extracted from a prospective database. **Results:** 215 patients were operated. In 204 patients (LSG) laparoscopic sleeve gastrectomy was performed, in 4 laparoscopic gastric plications, in 4 laparoscopic gastric by-pass. Out of 204 patients with LSG, in 21 patients another surgical procedure was performed: 11 hiatal hernia repairs, 5 cholecystectomies, 3 adhesiolysis, 2 umbilical hernias, 1 postoperative hernia. The mean operation time of concomitant operations was 80 min significantly longer the 45 min for only LSG. The length of stay was identical. One patient developed a biliary drainage from gallbladder bed of the liver and was treated conservatively. There was no difference between complications rate and the length of stay between the two groups.

Conclusions: During learning curve, the successful procedure represents a motivation for next cases. Every complication represents a drawback. In the studied cohort there was a small number of concomitant interventions with no complications.

So the concomitant intervention is justified and feasible as long as it is performed safe and it doesn't prolong too much the total operation time jeopardizing the postoperative outcome.

OP-017

ABDOMINAL WALL HERNIAS IN MORBIDLY OBESE PATIENTS - A RELIABLE ALGORITHM

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Ponderas Academic Hospital – Center of Excellence in Bariatric and Metabolic Surgery – Bucharest, Romania

Background: Obesity represent an important risk factor for primary and incisional hernia occurrence and for hernia recurrence. Despite the incidence of ventral hernias (8-11%) in the morbidly obese patients seeking surgical treatment for obesity, there is no consensus regarding the optimal treatment of ventral hernias in patients who present for weight loss surgery.

Aim: We propose an algorithm for ventral hernia management in the obese patient **Material and method** We apply in our clinic a treatment algorithm that improved the results of hernia repair in obese patients. I. Staged approach delayed hernia repair: 1 step – metabolic procedure / 2 step - hernia repair. Best option for obese patient with ventral hernia with no risk of hernia incarceration seeking ventral hernia repair / metabolic procedure. II. Concurrent bariatric procedure and repair of ventral hernia can be the option in patients with hernias that should be repaired : hernias that have to be reduced during surgery because of technical needs should be repaired, small necked, deep hernia , with high risk of or incarcerated ventral hernias (bowel) III. Staged approach 1 step- hernia repair/ panniculectomy and hernia repair 2 step- bariatric procedure For selected morbid patients with huge hernia or inferior abdominal pannicula and hernia that impair bariatric postoperative recovery. **Discussion** For the morbid obese patients with voluminous ventral hernia the staged approach with 1step- weight loss- 2 step hernia repair revealed as the best option especially for complex ventral hernias . Due to the weight loss the technical circumstances of the operation are improved, hernia recurrence rate reduced, the risk of perioperative complications reduced. Medical weight loss need time but bariatric weight loss is a safe and definitive method to effect weight loss. **Conclusion** Hernias are more prevalent in patients with obesity and especially morbid obesity. Clinical exam and preoperative investigations should minimize handling hernias at the time of bariatric procedures and allow having a preoperative strategy. For the optimal time and method of treatment of abdominal wall hernias with best results in obese patients undergoing bariatric procedures we propose an reliable algorithm

OP-018

MODIFIED LONROTH TECHNIQUE FOR RYGBP

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Introduction: Laparoscopic Roux-en-Y Gastric Bypass (LRYGBP) represented for many years the gold standard technique in bariatric surgery, but due to high risk of long-term complications it has been surpassed by sleeve gastrectomy. The potential risk for long-term complications (internal hernia, marginal ulcer, stenosis, candy-cane syndrome) following LRYGB represent significant concerns for patient and surgeon and there are potential risks related to the surgical technique.

Methods: Multiple techniques are described for LRYGBP with the purpose to diminish long-term complication rate. Herein, we provide a video with different personal technical modifications to the initial Lonroth technique including narrow gastric pouch, systematic closure of the mesentery and modified jejun-jejunal anastomosis.

Results: The standard technique includes the division of the biliary limb after the jejun-jejunal anastomosis. We perform this division immediately after completion of the gastro-jejunal anastomosis, in order to prevent a long blind loop of the alimentary loop, which can cause a candy cane syndrome. The Petersen's space is always closed starting with the base of the mesentery by a continuous running suture. Another modification of the original Lonroth's technique is represented by the jejun-jejunal anastomosis, which is performed by the left hand with a uniform, lesser tension on the anastomosis. The

opening is in the proximal part, the suture becoming easily and comfortable, with less risk of stenosis.

Conclusions: The risks of long-term complications following LRYGBP could be diminished by respecting some technical details.

OP-019

THE BEST CHOICE FOR HEMOSTASIS ON THE STAPLER LINE

Dan Ulmeanu, Victor Diaconu

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Background: Homeostasis, in our view, is the most demanding part of the surgical procedure and it is linked to major complications. There are lots of opinions, no universal consensus and the experience of the leading surgeon is has the most decisive role.

Objective: To investigate and search for the most effective way of hemostasis on the stapler line of the sleeve gastrectomy.

Methods: A total of 150 patients with sleeve gastrectomy with different methods of hemostasis on the stapler line (oversewing, clipping, applying hemostatic agents, bipolar coagulation, Peristrip dry). The study included all patients with sleeve gastrectomy regardless BMI or associated pathology.

Results: Of the 60 patients in which oversewing was used for hemostasis there was no postoperative bleeding and only 1 gastric fistula. Using bipolar coagulation in 60 patients there were no postoperative complications. In the 20 cases in which Peristrip dry, clipping was used there was no surgical complication. In the last 10 cases in which hemostasis was achieved by the use of hemostatic agents there was one postoperative bleeding that needed reintervention.

Conclusions: We need consensus, protocols and may be the most needed thing is better tools specially designed for this part of the surgical procedure.

OP-020

ENDOSCOPIC TREATMENT OF SLEEVE GASTRECTOMY OBSTRUCTIVE COMPLICATIONS

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Objective: The objective of this study is to analyze a series of patients who develop obstructive complications (OC) after laparoscopic sleeve gastrectomy (LSG).

Methods: A retrospective study reviewed the morbidly obese patients who underwent LSG between May 2011 and December 2016 in our Bariatric Center of Excellence (CoE), to identify the patients treated for OC. The LSG standard technique involved the 32 Fr boogie calibration for all the patients, the systematic posterior fixation of the gastric pouch since 2013 and, systematic stapled line over sewn reinforcement, since 2014.

Results: 2801 patients (71.5% female and 28.5% male) with a mean age: 42 ± 12 years and a mean BMI: 38 ± 11 Kg/m² underwent LSG. In 35 (1.2%) of these patients OC were demonstrated, all the cases after 2013. In 2 cases surgery was the first choice. In the other 33 case endoscopic management was the first choice. The mean number of dilations was 1.7 ± 1.2 , and the median balloon size was 20 mm (range 10 - 40 mm). Further surgery was needed in 2 case for associated leakage, that implies 94% successful rate for endoscopic treatment.

Conclusion: OC after LSG performed in a large volume CoE are rare but they require early diagnosis and consecutive treatment. OC may be successfully treated with endoscopic balloon dilation. Expertise in bariatric endoscopy is required.

OP-021**DILUTED CLORAMINE IN THE TREATMENT OF UPPER GASTRIC FISTULAE – A CASE REPORT**C.I. Puia, P. Puia*Cluj-Napoca, Romania**Objective:* To discuss the treatment of a fistula after gastric sleeve gastrectomy.*Material and Method:* We present the case of a patient with a fistula that occurred on day 8 postoperatively at the upper pole of the suture line after sleeve gastrectomy. Manual resuturing was unsuccessful. Endoscopy and iodine contrast swallow described a cavity of about 3 cm diameter drained by the subhepatic tube. The drainage liquid is very fetid and does not descend below 200 mL. Clips or coated stents were not available at the time. To decrease bacterial burden the patient is asked to drink 4 times daily two mouthfuls of diluted Chloramine (0.5 tablet in 10 liters of water). It was noted that treatment with parenteral antibiotics chosen according to sensitivity testing did not yield any results. The foul odor and high bacterial population persisted.*Results:* Fetid odor disappeared after 2 days, the bacterial population decreased and the fistula flow was reduced to 50 ml after 5 days and closed after 9.*Conclusions:* Reducing the bacterial burden of the perifistular cavities by administering orally diluted chloramine may have beneficial effects on the fluid drainage and indirectly may help fistula healing.**OP-022****LAPAROSCOPIC ESO-GASTRO-JEJUNOSTOMY FOR CHRONIC LEAKS AFTER LSG**Sorin Velici, Dan Andrei, Cătălin Copăescu*Ponderas Hospital – Center of Excellence in Bariatric and Metabolic Surgery – Bucharest, Romania**Background:* Laparoscopic sleeve gastrectomy (LSG) is widely accepted as a bariatric surgical procedure being very well standardized, with low complication rate and insignificant long-term nutritional deficiencies. Its major complications are staple-line bleeding, strictures and staple-line leaks. Leaks after LSG (1.5 to 5%) are the most feared and difficult complications to deal with. There is currently no universal protocol showing how to manage and treat a gastric leak. However, timing of diagnosis plays an important role in deciding the invasiveness of treatment. Endoscopic approaches (endoprosthesis, endoscopic clips, endoscopic sealing glue or balloon dilation), washout, drainage placement and re-suturing the leak if tissue is still in early stages of inflammation are options for early leaks. For chronic leaks, a definitive surgical approach can be Roux en Y fistulo-jejunoanastomosis or even total gastrectomy.*Aim:* To present the surgical technique of laparoscopic Roux en Y eso-gastro-jejunoanastomosis for chronic leaks after LSG.*Method:* Preoperative work-up (EDS, Upper GI fluoroscopy, CT) and assuring a good nutrition status (TPN or NG tubes) are very important for the success of the operation. Also, if possible/necessary all collections need to be drained, either surgical or CT guided, if possible, prior to the operation.*Results:* This video presentation highlights the main steps of the eso-gastro-jejunoanastomosis technique that we have applied for chronic leaks after LSG: access to the abdomen, thorough adhesiolysis, difficult approach to the hiatus, minding the spleen and its vessels, re-establishing the anatomy, identifying the fistula, preparing the jejunum, performing the Roux en Y hand-sew eso-gastro-jejunoanastomosis. No intraoperative or postoperative complications were recorded in our series (5pts). Time of surgery (185 min (155 – 240)). Mean hospital stay 6 days (5-7).*Conclusions:* Leaks most often occur early after surgery and there are various conservative means to treat them, but in case of chronic fistulas a more aggressive approach is needed. In our experience, Roux en Y eso-gastro-jejunoanastomosis successfully resolved all the situations of chronic fistulas after LSG.

POSTER SESSION (P)

P-001

OUR EXPERIENCE IN METABOLIC SURGERY, GASTRIC-SLEEVE GROUP

Daniela Elena Mihăilă, Iulian Slavu, Vlad Braga, Lucian Alecu

Bucharest, Romania

Background: Obesity is a serious health problem with significant social and economic implications, and growing incidence worldwide. Metabolic surgery has become a necessity in improving the health status of patients and increases their quality of life.

Objective: The presentation of experience of the General Surgery Clinic of "Prof. Dr. Agrippa Ionescu" Emergency Hospital in surgeries such as "gastric sleeve", the first step in a study evaluating the effects of intervention on long-term weight loss, diabetes and hypertension.

Material and Methods: We retrospectively analyzed the data of 51 consecutive patients operated in our clinic. Data were collected from the observation sheets.

Results: The group included 51 patients (35 women), with an average BMI of 44.09 kg / m². Average hospital stay was 8.8 days, with an average of 5.8 days of post operatory hospitalization. The main comorbidities were: hypertension (32 patients), diabetes (18 patients). We recorded a laparoscopic follow up intervention for postoperative bleeding from the gastric margin. Other complications: one patient presented with pneumoperitoneum, 4 patients developed wound hematoma that required monitoring and dressing. The mean duration of surgery was 1 hour and 55 minutes, dropping when the team gathered experience.

Conclusions: We believe gastric sleeve to be a safe operation, with good management of the patient after surgery, and few complications. The data are comparable to those of large studies in the literature, the patient being monitored in dynamics by an interdisciplinary team. Patients will be interviewed to assess status at 12/24 months postoperatively.

P-002

LAPAROSCOPIC CONCOMITANT GASTRIC SLEEVE AND REPAIR OF A MORGAGNI LARREY HERNIA - CASE REPORT

Daniela Elena Mihăilă, Iulian Slavu, Vlad Braga, Lucian Alecu

Bucharest, Romania

Background: Anterior diaphragmatic hernias are very rare surgical entities, scarce in symptoms, that occur through the slots of the costal and sternal fascicule of the diaphragm. First described by Giovanni Battista Morgagni in 1769, they are known under many names: hernias Morgagni, Morgagni-Larrey, or located to the left, right or bilateral; or named according to the nomina of the orifice (Morgagni, Marfan, Larrey). The preferred treatment is the laparoscopic cure of the hernia.

Aim: We present the case of a female patient, with obesity (BMI = 44.10 kg/m²), acute cholecystitis and Morgagni hernia. Other associated pathologies: high blood pressure, autoimmune thyroiditis, dyspnoea. *Methods.* The initial diagnosis of diaphragmatic hernia was made a year back by a CT investigation. Laparoscopic cholecystectomy was practiced, longitudinal gastrectomy and the cure of the diaphragmatic hernia by suturing the diaphragmatic margins, along with a drainage tube placed in the remaining cavity of the hernia, with conservation of the hernia sac. *Results.* The patient had a simple post operatory evolution, with no complications. The concurrent cure of the hernia and gastric sleeve did not represent a greater risk for the patient, recovery being rapid. *Conclusion* The peculiarity of the case was represented by the triple surgical pathology and the features of the diaphragmatic hernia (the hernia sac with omentum, in the Morgagni foramen).

P-003**CHALLENGES AND PITFALLS OF LAPAROSCOPIC SLEEVE GASTRECTOMY AND HIATAL HERNIA REPAIR IN SITUS INVERSUS TOTALIS**Maura Priboi, Cătălin Copăescu*Ponderas Hospital – Center of Excellence in Bariatric and Metabolic Surgery – Bucharest, Romania*

Background: Situs inversus totalis is a rare autosomal recessive genetic condition in which all the organs are arranged in a reversal mirroring image of the normal positioning. Due to the contralateral disposition of the viscera, the laparoscopic surgical approach of these patients may be more difficult than that of orthotropic patients. Starting from 1991 when Campos and Sipes described the first case of laparoscopic cholecystectomy in situs inversus, other cases of laparoscopic surgery in patients with this condition have been reported in a small number of cases, less than 100 cases worldwide until nowadays, most often for cholecystectomy and much less in the field of laparoscopic bariatric surgery (gastric banding, gastric bypass or sleeve gastrectomy).

Aim: We present a patient with morbid obesity, hiatal hernia and situs inversus, highlighting the unique anatomy and emphasizing the technical challenges and pitfalls in this case.

Methods: All the investigations performed preoperatively confirmed the reversed positioning of the abdominal organs (upper gastro-intestinal radiological studies, ultrasonography, computed tomography). Technical details of the laparoscopic sleeve gastrectomy and hiatal hernia repair, with situs inversus totalis, are presented.

Results: The entire procedure was performed using the reverse of the normal surgical set-up. Appropriate port insertion and surgeon positioning are essential to tackle this problem. Due to the specificity of this case, the position of the video monitor and of the instruments (energy instruments, graspers, staplers, liver retractor) were used in a reversed manner. The main difficulties were the use of the left hand as the right one and proper understanding of the anatomy at the gastro-esophageal junction. Beside these challenges, we did not experience a longer operative time or more complications associated.

Conclusions: The laparoscopic approach in cases of situs inversus is feasible, although more complex while the mirror image anatomy not only demands greater surgical skill but also requires careful pre-operative planning for setting up the operation theatre, the positioning of the surgical team, the ports and instruments. Certain technical aspects of this type of surgery are challenging and it is recommended that an experienced laparoscopic bariatric surgeon carry out the procedure but similar outcomes are expected.

P-004**EFFECT OF LIFESTYLE CHANGES ON HORMONAL PROFILE IN OBESE, TYPE 2 DIABETES PATIENTS WITH A METABOLIC SURGERY INDICATION**Diana Simona Stefan^{1,2}, Daniela Lixandru², Laura Petcu¹, Ariana Picu¹, Bogdan Smeu³, Cătălin Copăescu³, Constantin Ionescu-Tirgoviste^{1,2}, Cristian Guja^{1,2}¹*National Institute of Diabetes, Nutrition and Metabolic Diseases “Prof. N.C. Paulescu”, Bucharest, Romania*²*University of Medicine and Pharmacy “Carol Davila”, Bucharest, Romania*³*Ponderas Academic Hospital – Center of Excellence in Bariatric and Metabolic Surgery – Bucharest, Romania*

Objectives: The aim of this study was to evaluate hormonal changes in obese, type 2 diabetes mellitus (T2DM) patients with a primary indication of metabolic surgery after 6 months of intensive lifestyle changes.

Material and methods: Twenty one participants, obese males (BMI between 30 and 50 kg/m²), aged between 30 and 65 years, with T2DM duration between 1 and 15 years were included in this study. They represent the control group of the CREDOR (Collaborative Romanian Efforts for Diabetes and Obesity Retrench) project. All patients received lifestyle counseling at baseline (V1). The individualized caloric intake was calculated as follows: [Resting Metabolic Rate (RMR) * 1,3 (they were all sedentary individuals) + (10% * RMR)] - 500 (inducing a daily restriction of 500 kcal). In addition, all subjects received advice concerning the intensification of physical activity (at least 30 minutes, 3-5 times per week); smoking cessation and alcohol intake restriction. The first follow-up visit (V2) took place 6 months after V1. Out of the 21 patients, 17 patients completed their V2 while 4 patients were lost to follow-up. The following hormones were assessed at the baseline and at V2: glucagon-like

protein 1 (GLP-1), insulin, proinsulin, C-peptide, ghrelin, adiponectin and leptin.

Results: The mean BMI improved significantly (from 40.5 kg/m² to 39.1 kg.m², p<0,001), but without clinical relevance. Metabolic control (estimated by HbA1c) however did not improve. The level of insulin decreased non-significantly, from 22.12 to 17.43 uU/ml, (p=0.07) while C-peptide decreased significantly (p<0.05) from 9.82 to 7.66 ng/ml. This led to a marginally decrease of insulin resistance, estimated by HOMA-IR (p = 0.06). GLP1 increased slightly, from 47.13 to 50.54 ng/ml, without statistical significance. Ghrelin showed a significant increase after the 6 months (p < 0.05), from 100 to 136 pg/ml. Finally, we recorded a significant decrease of leptin (p<0.01), from 15.50 to 10.16 ng/ml and non-significant (p<0.06) change of adiponectin level.

Conclusions: We found some interesting hormonal changes following the intensification of lifestyle changes after 6 months of follow-up, indicating that efficacy of lifestyle intervention in ameliorating insulin resistance, despite only minor weight loss and no metabolic improvement.

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P-005

ENDOPLASMIC RETICULUM STRESS AND AUTOPHAGY IN HUMAN B-CELLS EXPOSED TO SERA FROM OBESE TYPE 2 DIABETIC PATIENTS; BENEFICIAL EFFECTS OF IMPROVING GLYCEMIC CONTROL

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Introduction: Obesity-associated metabolic disturbances, such as elevation of fatty acids levels and persistent hyperglycaemia, cause pancreatic B-cell dysfunction. The impaired β -cell function arises mainly from stresses on the endoplasmic reticulum (ER), the organelle where proinsulin synthesis and folding takes place. The autophagy system may control ER stress in β -cells. The aim of this study was to investigate the expression of key proteins involved in ER stress and autophagy in β -cells exposed to sera from obese patients with type 2 diabetes (T2D), before and after they attained weight loss and improved glycemic control.

Material and Methods: The obese T2D patients participants in this study were randomly assigned (1:1) to receive conventional medical therapy for T2D or to undergo laparoscopic sleeve gastrectomy. Serum samples were obtained from obese T2D patients at 0, 6 and 12 months of study, and were stored at -80°C. Confluent insulin-secreting 1.1B4 human β -cells were exposed for 72 h to 10 % sera from obese T2D patients (at 0, 6 and 12 months of study) and the following were investigated: cellular viability and proliferation (by MTT assay), reactive oxidative species (ROS) production (estimated with DCFH-DA), insulin expression (evaluated by immunohistochemistry), and the expression levels of several ER stress sensors and transducers and of proteins important for the autophagic flux (analyzed by Western blot).

Results and Discussions: Human β -cells exposed for 72 h to sera from obese T2D patients who achieved weight loss and improved glycemic control during 6 or 12 months of study showed, as compared to control cells incubated with each corresponding serum sample obtained initially (at 0 month): (i) increased cell proliferation and decreased ROS production; (ii) diminished expression of the ER stress-related proteins PERK, IRE1 α , ATF6, eIF2 α , XBPs and CHOP (iii) enhanced protein expression of p-AMPK, SIRT1, LKB1 and of the autophagy markers LC3II and p62/SQSTM1; (iv) unchanged expression of PTP-1B; and (v) increased immunofluorescent labeling of insulin.

Conclusions: Glucolipotoxic factors in sera from obese T2D patients activate molecular mechanisms that perturb ER homeostasis in human pancreatic β -cells. Pancreatic β -cells exposed to circulating factors from obese type 2 diabetic patients which achieved weight loss and better glycemic control exhibit a diminished ER stress and an enhanced autophagic flux which contributes to improved β -cells function and survival.

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