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Impact of a Hub-and-spokes Healthcare Model for Obesity Treatment

Improving Patient Care through Affordability in the Veneto Region, Italy

by Mirto Foletto, MD; Luca Busetto, MD; Roberto Vettor, MD; Claudio Pileri, MD; and Domenico Mantoan, MD

The authors discuss Italy's national healthcare model, which is funded by public money within a regional-based framework that was put in place to guarantee the same accessibility, costs, accountability, and quality across the Country. To address these demands, each Italian region has developed individual healthcare plans. The government of the Veneto Region, situated in the northeast, ruled that healthcare provisions be delivered through dedicated networks of care (e.g., Oncology Network, Stroke Network) according to the guidelines reported on the Regional Healthcare Plan (Regional Law No. 19/2016). The authors detail their proposal and implementation of a network for obesity based on a hub-and-spoke model in which the large "hub" center and smaller "spoke" centers use common care pathways to deliver comprehensive care to patients.

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Long QT Syndrome and Risk for Hypoglycemia in a Postbariatric Surgery Patient



by ROSELYN CRISTELLE MATEO, MD, MS

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by MARY ELIZABETH PATTI, MD

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ABSTRACT

The authors report the case of a 41-year-old female patient with a body mass index of 44.4kg/m2 who underwent sleeve gastrectomy with postoperative course complicated by cardiac arrest due to polymorphic ventricular tachycardia and prolonged QT interval (as long as 576msec). The patient subsequently developed hypoglycemia several weeks after surgery, with sensor glucose readings as low as 33mg/dL, largely in the postprandial state. She underwent a diagnostic 72-hour fast with results indicating appropriate suppression of insulin secretion with fasting, consistent with lack of autonomous insulin secretion in the fasting state. Given the coexistence of hypoglycemia and prolonged QT interval, we considered an underlying genetically determined long QT syndrome as a potential contributor to her hypoglycemia. Genetic testing revealed mutation in the KCNQ1 gene, which encodes subunits of the voltage-gated potassium channels (Kv7.1) and (Kv11.1) that are expressed in both cardiomyocytes and pancreatic beta cells. Patients with the KCNQ1 mutation have longer QT and lower serum glucose and potassium levels. Therapeutic goals to reduce the risk of recurrent arrhythmia included avoidance of medications that prolong the QT interval, as well as prevention of both hypokalemia and hypoglycemia. Medical nutrition therapy was aimed at reducing postprandial glycemic spikes, which can stimulate insulin secretion and increase risk for subsequent hypoglycemia after meals.

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News and Notes on the Latest Issue of BT

A message from Dr. John M. Morton



John M. Morton, MD, MPH, FACS, FASMBS, is the Clinical Editor of *Bariatric Times*; Chief of the Section of Bariatric and Minimally Invasive Surgery at Stanford University in Stanford, California; and Past President of the American Society for Metabolic and Bariatric Surgery.

Dear Friends and Readers,

Welcome to another issue of *Bariatric Times*. This month, "Raising the Standard" column editors Gadaleta and Petrick provide and overview of the 35th annual meeting of the American Society for Metabolic and Bariatric Surgery (ASMBS) held at ObesityWeek 2018 in Nashville, Tennessee, this past November. For the first time in the meeting's history, an overall theme was reflected. "Getting to the Heart of the Matter," scientific sessions focused on the effects of obesity on the cardiovascular system. The combined ObesityWeek Keynote Address, "The Intersection Between Obesity and Heart Disease," was given by Dr. Steven Nissen, the Chairman of the Department of Cardiovascular Medicine at the Cleveland Clinic and Professor of Medicine at the Cleveland Clinic Lerner College of Medicine at Case Western Reserve University in Cleveland, Ohio. Planning for ObesityWeek 2019, which will take place November 3–7, 2019, in Las Vegas, Nevada, is underway.

Next, Mateo and Patti present the unique case of a 41-year-old female patient with a body mass index of 44.4kg/m² who underwent sleeve gastrectomy. Her postoperative course was complicated by cardiac arrest due to polymorphic ventricular tachycardia and prolonged QT interval, and subsequent hypoglycemia several weeks after surgery. Based on the presence of hypoglycemia in association with long QT syndrome, the authors

hypothesized that hypoglycemia was related to an underlying genetic mutation in KCNQ1 or KCNH2, and potentially aggravated by increases in incretin and insulin secretion following sleeve gastrectomy. Genetic testing confirmed a mutation in KCNQ1.

Foletto et al from the Veneto Region of Italy describe their country's healthcare model, which is funded by public money within a regional-based framework with dedicated networks of care. The authors detail their proposal and implementation of a network for obesity in the Veneto Region based on a hub-and-spoke model in which the large "hub" center and smaller "spoke" centers use common care pathways to deliver comprehensive care to patients.

Lastly, we present "ASMBS State Chapter Spotlight." This month, authors Dan and Daigle, highlight the Ohio & Kentucky ASMBS State Chapter, reporting recent successes of their newly combined force. They are working toward new initiatives in the areas of patient advocacy, bariatric surgical training, education for integrated health professionals, and research collaboration.

We hope you enjoy this issue.

Sincerely,

John M. Morton, MD, MPH, FACS, FASMBS **BT**

Addressing Burnout during Your Patient's Weight Loss Journey Requires a Passion for Obesity Treatment through Great Losses and Regains

A message from Dr. Christopher D. Still



Christopher D. Still, DO, FACN, FACP, is the Co-Clinical Editor of *Bariatric Times*; Medical Director for the Center for Nutrition and Weight Management, and Director for Geisinger Obesity Research Institute at Geisinger Medical Center in Danville, Pennsylvania.

Dear Friends and Readers,

Lately, we have seen a lot of coverage on burnout syndrome among healthcare professionals and its impact on patient care. Burnout syndrome can be caused by chronic stress in the work environment and results in three distinct symptoms—emotional exhaustion, depersonalization, and reduced professional achievement.¹ It is increasingly recognized among healthcare professionals as a major psychosocial problem that affects people from different disciplines.¹ It is highly prevalent in the healthcare environment due to the demanding schedule of patient care and it's increasing. Recent estimates report that about 10 to 70 percent of nurses and 30 to 50 percent of physicians, nurse practitioners, and physician assistants experience burnout syndrome.²

It's true, caring for patients while also possibly managing a busy practice, meeting other work-related commitments, and making time for yourself and your family can make for a stressful day-to-day schedule. But I think treating patients with obesity make us susceptible to the kind of burnout felt along the weight loss journey. As our patients express frustration on the weight loss roller coaster, celebrating great losses and lamenting over regains, we are riding right along next to them. We strive to support them during every interaction, keeping our eyes on the prize of success, which comes in the form of helping our patients the lose weight needed to improve their health and lifestyle.

I believe that in order to have the stamina required for caring for this patient population, you must first have a true passion for the specialty. When you love what you do, it shows and impacts the provider-patient connection. It also shows when you don't love what you do and translates into an interaction that is dissatisfying for you and your patient. I have seen this happen first-hand when individuals in gastroenterology fellowship programs complete a rotation in obesity treatment. Some fellows discover a love for it and passionately engage with patients while others find it just isn't for them.

The patient experience is really important to care outcomes. In fact, a recent study proves that communication can have a powerful influence on patient health outcomes. Leibowitz et al from Stanford University in Stanford, California, examined the effect of physician assurance on

patients' allergic reaction after a histamine skin prick. They found that when physicians told patients that their symptoms would diminish, participants' ratings of itchiness/irritation were significantly reduced compared to a control group that received no assurance. Importantly, this effect was achieved without offering medication or other treatment.

This study underscores the critical role we play in even routine patient meetings for issues that ultimately do not require medication or treatment. Simply communicating with our patients and conveying empathy, although it may be seen as costly or unnecessary from a health economics perspective as Leibowitz et al point out, makes a difference. This presents a great opportunity for us to practice techniques such as motivational interviewing (MI), a patient-centric style of communication that helps to elicit and motivate change.

Loss of motivation is at the core of any type of burnout syndrome. Weight regain might cause patients to stop adhering to lifestyle changes, which in turn, could potentially affect their caregivers' motivation to continue treatment. It is up to us to prevent this kind of burnout within ourselves and always keep patient experience in mind. While we can't do the work for our patients, we can strive to offer them continuous support, reminding them that with numerous safe, effective treatments for obesity, the prize of a healthier life is well within their reach.

Sincerely,

Christopher D. Still, DO, FACN, FACP

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Bariatric Times welcomes letters for possible publication. Letters should be no more than 500 words and five references. Letters that comment on a *Bariatric Times* article will be considered if they are received within two months of the time the article was published. All letters are reviewed by the editors and are selected based upon interest, timeliness, and pertinence, as determined by the editors.

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A Message from Christopher Still, DO, FACN, FACP

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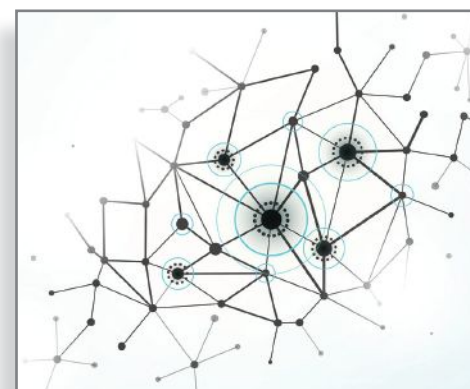
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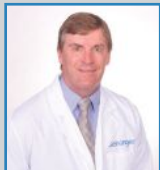


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RAISING the STANDARD

This column is dedicated to highlighting a broad range of quality issues in bariatric surgery.

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ASMBS ANNUAL MEETING AT OBESITYWEEK 2018

Getting to the Heart of the Matter

by Dominick Gadaleta, MD, FACS, FASMBS, and Anthony T. Petrick, MD, FACS, FASMBS

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Bariatric Times. 2019;16(1):8–9.

The 35th annual meeting of the American Society for Metabolic and Bariatric Surgery (ASMBS) was held at ObesityWeek 2018 for the first time in Nashville, Tennessee, this year. This unique, international event focuses on the basic science, clinical application, surgical intervention, and prevention of obesity. The ASMBS and The Obesity Society (TOS) again joined resources and presented an outstanding scientific and educational conference covering cutting-edge basic science, clinical research, and public policy impacting the quality of life for the millions who suffer from obesity.

The combined ObesityWeek Keynote Address was given by Steven Nissen, MD, the Chairman of the Department of Cardiovascular Medicine at the Cleveland Clinic and Professor of Medicine at the Cleveland Clinic Lerner College of Medicine at Case Western Reserve University. His talk, "The Intersection Between Obesity and Heart Disease," connected the a meeting which focused on the theme, "Getting to the Heart of the Matter."

The ASMBS Integrated Health Keynote Address was given by Randy Seeley, PhD, the Henry K. Ransom Endowed Professor of Surgery at the University of Michigan School of Medicine, and the Director of the National Institutes of Health (NIH)-funded Michigan Nutrition Obesity Research Center (MNORC). This address was followed by the ASMBS Integrated Health Presidential Address, which

was provided by Karen Flanders, MSN, APRN, CBN. Both speakers and presentations were well-attended and well-received.

This year's ASMBS Mason Lecture was given by Harvey J. Sugerman, MD, Emeritus Professor of Surgery, Virginia Commonwealth University. Dr. Sugerman described the mental and physical struggles that helped define him as he worked his way through medical school at Thomas Jefferson University, his residency training as a Lieutenant Colonel time in the United States Army, his time as a practitioner in private practice, and ultimately his 28 years at the Medical College of Virginia, which culminated in his becoming the David Hume Professor of Surgery, Chairman of the General and Trauma Surgery Division and Interim Chair of the Department of Surgery. This courageous and heartfelt address will likely have a lasting impact on all who attended.

ASMBS Past President Samer Mattar, MD, FACS, FRCS (Edin.), FASMBS, passed the gavel to Eric DeMaria, MD, FASMBS, who officially took office as current President of the ASMBS. Both addressed the audience, highlighting the past year's accomplishments as well as initiatives for 2019. Next year's ObesityWeek will focus on the obesity-related comorbidity type 2 diabetes mellitus (T2DM), and Dr. DeMaria shared that he is planning for a term that aligns with that theme.

This year, the ASMBS had 18 preconference courses on Sunday and Monday for all attendees, providing sessions for both novice and seasoned members. These full- and half-day courses were designed to improve skills, help begin a new program or take an existing program to the next level. The course on the high-risk patient, directed by Keith Kim, MD,

and Vinni Bajwa, MD, had presentations on the evaluation and safe surgical management of patients with severe and end-stage cardiac, renal, and hepatic disease before and after transplant, as well as patients with severe immune deficiency or hypercoagulable state. The afternoon focused on the surgically complex patient, and presenters provided insight and strategies to manage patients with severe reflux, prior foregut or trauma surgery, and complicated abdominal wall hernias. The enhanced recovery after surgery (ERAS) course, directed by Scott Monte, PharmD, featured presentations by Anthony Petrick, MD; Stacy Brethauer, MD; and Brandon Williams, MD, among others. The half-day course was an excellent review of best practice, and it served as guide to anyone considering incorporating ERAS into their surgical program.

In Top Paper Session I—Heart, moderated by Shanu Kothari, MD; Joel Brockmeyer, MD; Carlos A Schiavon, MD; and more, asked the question: Does the Roux-en-Y gastric bypass (RYGB) common limb length influence hypertension (HTN) remission, weight loss and cardiometabolic parameters? Using data from the Gastric Bypass to Treat Obese Patients with Steady Hypertension (GATEWAY) trial, they analyzed 45 patients who underwent RYGB with 150cm alimentary limb and 100cm biliopancreatic limb. Overall, 51 percent had complete resolution of HTN on no medication; however they found no difference in HTN remission, weight loss, glycemic/A1c, high-density lipoprotein (HDL) cholesterol, low-density lipoprotein (LDL) cholesterol, and triglyceride levels regardless of length of resultant common limb at one

year. During the same session, we also learned that bariatric surgery reduces the incidence of atrial fibrillation¹ and decreases the rate of mortality due to congestive heart failure.²

The Top Paper Session II, moderated by Richard Peterson, MD, featured several interesting presentations. Laurent Biertho, MD, from Quebec, Canada, presented their analysis of nonrevisional RYGB and sleeve gastrectomy (SG) from Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP) 2015 database. Comparing 123,164 patients under age 65 to 7,501 patients 65 years or older, the researchers found that older patients undergoing bariatric surgery are at higher risk for adverse events, including mortality, regardless of procedure. However, the effect of age on leak rate is only seen in RYGB procedures.³ Dr. Brethauer presented six-month data from a study that evaluated the implementation of new enhanced recovery goals for the MBSAQIP national quality improvement project Employing New Enhanced Recovery Goals for Bariatric Surgery (ENERGY). Using data from 36 participating centers, 2016 cases prior to implementation were compared to the first six months of ENERGY. Average length of stay (LOS) decreased from 2.24 to 1.76 days ($p < 0.001$), and LOS longer than four days decreased from 8.2 to 4.4 percent ($p < 0.001$) without increased bleeding, reoperation, or readmission rates. There was a significant association between increased adherence to the protocol and decreased odds of estimated LOS ($p < 0.001$). Additionally, participating centers reported that 27 percent of their patients did not require postoperative

opioids.⁴

This article highlights just a small sample of the outstanding posters, videos, and papers presented at the meeting this year. ObesityWeek also offered numerous social and networking opportunities. Congratulations to the Program Committee for organizing an outstanding event and to the ASMBS Foundation for another successful LEAD Awards ceremony. Planning is underway for next year's annual meeting, which will be held at ObesityWeek 2019 in Las Vegas, Nevada, November 3–7, 2019.

Next month: Decreasing Readmissions through Opportunities Provided (D.R.O.P.), the first national Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP) quality improvement project.

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American Society for Metabolic and Bariatric Surgery (ASMBS) leadership at ObesityWeek 2018. Front row (left to right): Stacy Brethauer, MD (2016–2017 ASMBS President); Karen Schulz, MSN, RN, CBN (2012–2014 ASMBS Integrated Health [IH] President); Bobbie Lou Price, BSN, RN, CBN (2006–2008 ASMBS IH President); Henry Buchwald, MD, PhD (1998–1999 ASMBS President); Karen Flanders, MSN, ARNP, CBN (ASMBS IH President); Lisa West-Smith, PhD, LISW-S (ASMBS IH President-elect). Second row (left to right): Shanu Kothari, MD, FASMBS (ASMBS Secretary/Treasurer); Walter J. Pories, MD (2002–2003 ASMBS President); Samer Mattar, MD (2017–2018 ASMBS President); Robin Blackstone, MD (2011–2012 ASMBS President); Eric DeMaria, MD, FASMBS (ASMBS President); Matthew Hutter, MD, MPH, FASMBS (ASMBS President-elect). Third row (left to right): Jaime Ponce, MD (2012–2013 ASMBS President); William Gourash, MSN, CRNP (2008–2010 ASMBS IH President); Philip Schauer, MD (2006–2007 ASMBS President); Ninh T. Nguyen, MD, FACS, FASMBS (2013–2014 ASMBS President); John M. Morton, MD, MPH, FACS, FASMBS (2014–2015 ASMBS President); Robert E. Brolin (2000–2001 ASMBS President). Back row (left to right): Kenneth G. MacDonald, MD (1996–1997 ASMBS President); Raul J. Rosenthal, MD, FACS, FASMBS (2015–2016 ASMBS President).

Photo courtesy of the American Society for Metabolic and Bariatric Surgery. Copyright 2018.



Left: American Society for Metabolic and Bariatric Surgery (ASMBS) Past President Samer Mattar, MD, FACS, FRCS (Edin.), FASMBS, passed the gavel to Eric DeMaria, MD, FASMBS, who officially took office as current ASMBS President during ObesityWeek 2018. Right: ASMBS Attendees suited up for one of the skills labs held during ObesityWeek 2018.

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Long QT Syndrome and Risk for Hypoglycemia in a Postbariatric Surgery Patient

Bariatric Times. 2019;16(1):10–12.

ABSTRACT

The authors report the case of a 41-year-old female patient with a body mass index of 44.4kg/m² who underwent sleeve gastrectomy with postoperative course complicated by cardiac arrest due to polymorphic ventricular tachycardia and prolonged QT interval (as long as 576msec). The patient subsequently developed hypoglycemia several weeks after surgery, with sensor glucose readings as low as 33mg/dL, largely in the postprandial state. She underwent a diagnostic 72-hour fast with results indicating appropriate suppression of insulin secretion with fasting, consistent with lack of autonomous insulin secretion in the fasting state. Given the coexistence of hypoglycemia and prolonged QT interval, we considered an underlying genetically determined long QT syndrome as a potential contributor to her hypoglycemia. Genetic testing revealed mutation in the KCNQ1 gene, which encodes subunits of the voltage-gated potassium channels (Kv7.1) and (Kv11.1) that are expressed in both cardiomyocytes and pancreatic beta cells. Patients with the KCNQ1 mutation have longer QT and lower serum glucose and potassium levels. Therapeutic goals to reduce the risk of recurrent arrhythmia included avoidance of medications that prolong the QT interval, as well as prevention of both hypokalemia and hypoglycemia. Medical nutrition therapy was aimed at reducing postprandial glycemic spikes, which can stimulate insulin secretion and increase risk for subsequent hypoglycemia after meals.

KEYWORDS: Obesity, bariatric surgery, sleeve gastrectomy, complications, cardiac arrest, long QT syndrome, hypoglycemia



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Endocrinologists are increasingly encountering hypoglycemia in patients after bariatric procedures and other forms of upper gastrointestinal surgery, yet the condition remains poorly recognized by patients and physicians alike. There are differences in the diagnostic criteria, and its true incidence remains uncertain.¹

Postbariatric hypoglycemia (PBH) typically emerges 1 to 3 years postoperatively, but it can be seen as soon as 6 to 12 months after surgery. In this setting, hypoglycemia is most commonly experienced 1 to 3 hours after meals, with no hypoglycemia after a prolonged fast of at least 12 hours. Typical symptoms of hypoglycemia, ranging from mild adrenergic or cholinergic symptoms (e.g., sweating, palpitations, tremors, and agitation, to debilitating neuroglycopenic symptoms (e.g., blurred vision, impairment of speech, memory, altered cognition, and even seizures). Importantly, some of these symptoms are nonspecific, making accurate diagnosis challenging because they might be initially attributed to dumping syndrome, anxiety, or cardiovascular disorders. To define hypoglycemia in this setting, venous blood glucose level at the time of symptoms

should be less than 54mg/dL.¹ Repeated episodes of hypoglycemia can result in blunted hypoglycemia awareness, thus putting the patient at risk for further severe hypoglycemia-related complications. While novel treatment approaches for PBH are being pursued, prevention by identification of patients at high risk for this condition prior to surgery is more desirable.

We present a case in which a female patient experienced cardiac arrest during postoperative care following sleeve gastrectomy.

CASE REPORT

A 41-year-old female patient with a body mass index (BMI) of 44.4kg/m² underwent sleeve gastrectomy. Her postoperative course was complicated by cardiac arrest due to polymorphic ventricular tachycardia (torsades de pointes) with corrected QT interval as long as 576msec. This was initially attributed to postoperative pharmaceutical treatments, including ondansetron (Zofran, GlaxoSmithKline, Research Triangle Park, North Carolina) and metoclopramide (Reglan, ANI Pharmaceuticals, Inc., Baudette, Minnesota).

Prior to surgery, at 20 years of age, symptoms of headache, dizziness, imbalance, sweating, and confusion would occur if the patient fasted for a prolonged period. At age 31, she noted the onset of episodic syncope and near-syncope and adapted the habit of eating frequently, always carrying food to prevent these symptoms. Blood glucose levels would drop as low as 40mg/dL. Her BMI was normal until her 20s, when she slowly started to gain weight. Despite attempts at lifestyle modifications, including low-calorie diet programs, over-the-counter dietary supplements, increased activity, and health lifestyle coaching programs, she was unable to achieve sustained weight loss and ultimately considered bariatric surgery. Given the possibility of hypoglycemia as a contributor to these symptoms, a masked continuous glucose monitoring (CGM) test was performed during the preoperative period; this showed minimum sensor glucose of 50mg/dL, especially between 8 p.m. to 4 a.m., with a concurrent diary indicating nocturnal sweating.

Past medical history included Raynaud's disease without gangrene, reflux esophagitis, hypertension, polycystic ovary syndrome (PCOS) and migraine headaches. The patient's family history was notable among several family members: coronary artery disease, dyslipidemia, diabetes; a brother with history of obesity who underwent uncomplicated sleeve gastrectomy without postoperative hypoglycemia; and a mother with gastric cancer. The mother reported that the patient had hypoglycemia at birth, which was attributed to poor feeding and which resolved once formula feeding started. There was no family history of arrhythmia, pituitary or parathyroid tumors, recurrent kidney stones, or other multiple endocrine neoplasia (MEN) syndrome components. The patient was

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// Bariatric surgery-induced increases in gastric emptying and postprandial insulin secretion likely **further contributed** to KCNQ1-related postprandial **hypoglycemia**. //

employed full-time at time of surgery in a largely sedentary managerial position and lived with her husband and young child. She reported rare alcohol use.

Physical examination on postoperative Day 1 was remarkable for a BMI of 44kg/m², pulse 89, blood pressure (BP) 110/62, normal cardiovascular exam, and intact surgical scar. Laboratory testing revealed mild reductions in potassium, ranging from 3.2 to 4mEq/L, which required supplementation, and plasma glucose levels from 77 to 102mg/dL in the immediate postoperative period.

Several weeks postoperatively, the patient continued to have adrenergic and cholinergic symptoms, including headache, excessive sweating, shakiness, and nightmares, despite following a diet of low-glycemic-index foods. A CGM test showed sensor glucose levels as low as 33mg/dL, with associated adrenergic and cholinergic symptoms. Clinical and laboratory analysis did not suggest noninsulin-mediated causes of hypoglycemia, such as low glycogen stores or impaired gluconeogenesis in association with malnutrition, kidney or liver disease, or sepsis. Thyroid disease and adrenal insufficiency were ruled out on the basis of history and laboratory studies. Due to the severity of recurrent hypoglycemia in the early postoperative state, a pattern highly atypical for post-bariatric hypoglycemia, a diagnostic 72-hour fast to assess insulin secretion and its suppressibility with fasting was performed. Blood glucose values decreased progressively with fasting, with nadir of 59mg/dL at 46 hours of fasting with associated headache, sweating, and shakiness. Concurrent laboratory analysis included insulin level 1.9uIU/mL (2.0–19.6uIU/mL), C-peptide 0.54ng/mL (0.80–3.85ng/mL), proinsulin less than 7.5pmol/L (<18.8pmol/L), beta hydroxybutyrate 2.5mmol/L (<4mmol/L), and glucagon 73pg/mL (8–57pg/mL). Glucose rose minimally to 67mg/dL after administration of 1mg glucagon, consistent with depletion of glycogen stores. Together, these results are consistent with lack of autonomous insulin secretion in the fasting state, confirming the clinical pattern of largely prandial insulin secretion.

Based on the presence of hypoglycemia in association with long QT syndrome, we hypothesized that hypoglycemia was related to an underlying genetic mutation in

KCNQ1 or KCNH2, and potentially aggravated by increases in incretin and insulin secretion following sleeve gastrectomy. Genetic testing confirmed the loss of function mutation in KCNQ1. Therapeutic goals to reduce the risk of recurrent arrhythmia include avoidance of medications which prolong the QT interval, as well as prevention of both hypokalemia and hypoglycemia. Medical nutrition therapy was aimed at reducing postprandial glycemic spikes, which can stimulate insulin secretion and increase risk for subsequent hypoglycemia after meals; this included avoidance of simple carbohydrates, consumption of complex carbohydrates in controlled portions, bedtime cornstarch (a highly complex carbohydrate), and ensured adequate protein and micronutrient intake.⁸ CGM with alarms was used to allow the patient to detect hypoglycemia and treat before it became severe. Diazoxide, a potassium channel activator that reduces insulin secretion, was initiated at 25mg at bedtime. With this multipronged approach to therapy, symptoms improved. While beta blockers are effective in preventing cardiac events in approximately 70 percent of patients with long QT syndrome, providers should also be mindful that these drugs might blunt hypoglycemia awareness as a consequence of antiadrenergic effects. Moreover, beta blockade can suppress glycogenolysis, thus reducing correction of hypoglycemia. Long-term studies, however, have not been performed to date.⁹

DISCUSSION

One clue to the potential cause of hypoglycemia in our patient was the postoperative identification of long QT interval, which, upon further review, was present even in the preoperative period. While long QT syndrome can result from specific medications or metabolic abnormalities, such as hypocalcemia, hypomagnesemia, and hypokalemia, the identification of long QT interval should also prompt consideration of an underlying genetically determined long QT syndrome. Three major long QT syndrome genes (KCNQ1, KCNH2, and SCN5A) have been identified, together accounting for approximately 75 percent of individuals with the disorder.²

Interestingly, long QT syndrome due to mutations in KCNQ1 and KCNH2 genes encoding subunits of the voltage-gated

potassium channels (Kv7.1) and (Kv11.1) has recently been linked to hypoglycemia. KCNQ1 and KCNH2 are expressed in both cardiomyocytes and pancreatic beta cells. In a study by Torekov et al,³ patients with the KCNQ1 mutation who underwent a 75g oral glucose tolerance test after an overnight fast had lower plasma glucose levels three hours after ingestion compared with age-matched controls (4.4±0.3 vs. 5.4±0.5mmol/L, $P=0.03$). Insulin responses during the oral glucose tolerance test were higher than in matched controls (area under the curve [AUC] 45.6±6.3 vs. 26.0±2.8 min*nmol/L, $P<10^{-5}$). Plasma levels of insulin and C-peptide and insulin secretion rate (ISR) were also higher than in controls (≈ 1.9 fold for insulin, 1.2 fold for C-peptide, 1.3 for ISR). Beta-cell sensitivity to glucose, which was evaluated as the slope of the relation between ISR and glucose, was also significantly greater in mutation carriers. Furthermore, continuous glucose measurements for 3 to 7 days demonstrated that patients spent 77±18 minutes per 24 hours with glucose levels less than 3.9 mmol/L, and 36±10 minutes with glucose less than 2.8 mmol/L, compared to zero minutes (<3.9 mmol/L glucose) for the control participants ($P<0.05$). In patients with the mutation, low glucose levels occurred 3 to 5 hours after meals. Both frequency and severity of hypoglycemia, as measured by a standardized hypoglycemia questionnaire, were also higher than control participants. Plasma glucagon levels were not significantly different in patients with the mutation, despite hypoglycemia, perhaps due to impaired counterregulatory response with recurrent hypoglycemia, suppression of glucagon secretion by increased insulin levels, or increases in somatostatin release associated with the KCNQ1 mutation. These responses did not differ in the patients taking beta-blockers. Interestingly, patients with the KCNQ1 mutation also had lower serum potassium levels, likely due to insulin activation of the Na-K ATPase, moving potassium intracellularly.^{3–5} Both hypoglycemia and hypokalemia can further prolong the QT interval, initiating a vicious cycle of risk for arrhythmia and death.

Similarly, loss-of-function mutations in the KCNH2 gene encoding Kv11.1, the alpha subunit of a potassium ion channel, also cause both long QT syndrome and hypoglycemia. Aside from cardiac muscles, these voltage-gated channels are also present in intestinal K and L cells that secrete incretins, such as glucagon-like peptide-1 (GLP1), in response to oral glucose stimulation and pancreatic alpha and beta cells.⁶ Hylten-Cavallius et al⁷ studied individuals with KCNH2 mutations with a prolonged oral glucose tolerance test. Sixty-three percent developed plasma glucose levels less than 70mg/dL and 18 percent had plasma glucose levels less than 50mg/dL. In parallel, there was a 56- to 78-percent increase in insulin, C-peptide, GLP-1, and GIP response.

CONCLUSION

In summary, our patient illustrates a unique presentation of hypoglycemia linked to underlying long QT syndrome due to mutation in KCNQ1. This was not recognized in the preoperative state, but it might have contributed to mild hypoglycemia. Postoperative medications and electrolyte shifts likely resulted in prolongation of the QT interval and cardiac arrest. Bariatric surgery-induced increases in gastric emptying and postprandial insulin secretion likely further contributed to KCNQ1-related postprandial hypoglycemia. A clue to the unique nature of this case is that hypoglycemia occurred rapidly (within weeks) after surgery, compared to the typical presentation of postbariatric hypoglycemia one or more years after surgery. Patients who present with hypoglycemia early after surgery require detailed workup for hypoglycemia.¹ Moreover, we suggest that patients with known risk factors should be screened for long QT interval in the preoperative screening phase, so appropriate pre-, peri- and postoperative planning can be implemented.

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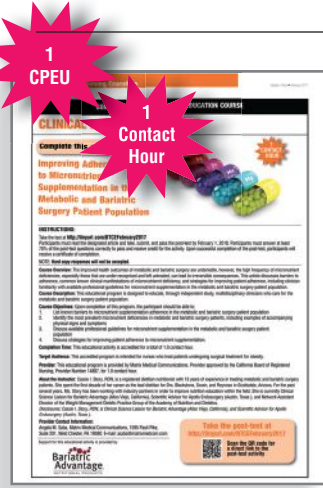
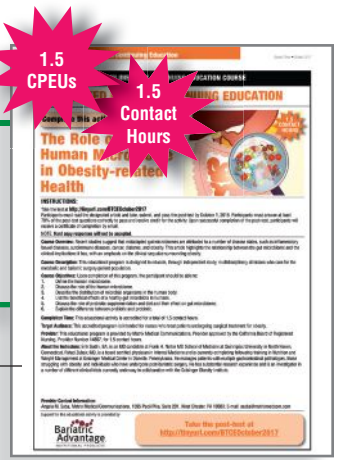
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IMPACT OF A HUB-AND-SPOKES HEALTHCARE MODEL FOR OBESITY TREATMENT

Improving Patient Care through Affordability in the Veneto Region, Italy

ABSTRACT

Background: Obesity is the plague of modern society. The related healthcare costs continually clash with budget constraints, and bariatric practice with its interdisciplinary demands requires dedicated resources and expertise that are mainly institution related. No local health authority has yet implemented a plan to coordinate the bariatric activity within the administered territory. The Veneto Region of Italy has a population of more than 6 million inhabitants and a prevalence of obesity around nine percent. The Regional Administration is the primary healthcare provider and payor. Healthcare at large is delivered through dedicated networks of care. We promoted the constitution of a bariatric network involving all the regional institutions devoted, with the support of Regional Health Authority. **Rationale:** The establishment of a regional bariatric network, called Rete Obesità Veneto, has many advantages in terms of resource allocation, standard healthcare provision, extensive and appropriate coverage for population, risk management, and costs containment. **Method:** The network is based on a hub-and-spokes model, where both hub and spokes centers deliver comprehensive care to patients with obesity. Common pathways of care are shared by the affiliated centers of the network. Inpatient/outpatient activities and outcomes are assessed and recorded according to the Regional Authority requirements and subject to audits. **Results:** The bariatric network was approved at the end of 2016. It network currently encompasses one hub and six spoke centers scattered throughout the Region, with consolidated bariatric practice and facilities. The hub is also the Regional referral and coordination center for obesity. **Conclusions:** The aim of Rete Obesità Veneto is to deliver the best patterns of care for people with obesity, with the goals of improved outcomes, reduced care variability, and reduced costs. Longitudinal assessment will provide new insights on the best practices for this patient population.

KEYWORDS: obesity, bariatric surgery, Veneto, Italy, obesity network, integrated care pathway, hub-and-spokes healthcare model

by Mirto Foletto, MD; Luca Busetto, MD; Roberto Vettor, MD; Claudio Pileri, MD; and Domenico Mantoan, MD

Drs. Foletto, Busetto, and Vettor are from the Department of Medicine, University of Padua, Padua, Italy. Drs. Pileri and Mantoan are from Health and Social Services of the Veneto Region in Venice, Italy.

Bariatric Times. 2018;16(1):14–17:

Obesity is a plague on modern society. In Italy, the mean rates for overweight and obesity are 35.3 and 9.8 percent, respectively.¹ Excess weight is not only one of the top five leading causes of death, it also has relevant impact on public health, both at an individual and population level² with estimated costs per year in Italy alone exceeding 8 billion Euros.³

In Italy, health is a fundamental constitutional right,⁴ and healthcare provision is equally granted to all Italian citizens. Given these premises, national healthcare is funded by public money within a regional-based framework that was put in place to guarantee the same accessibility, costs, accountability, and quality across the Country. To address these demands, each Italian region has developed individual healthcare plans.

The government of the Veneto Region ruled that healthcare provisions are to be delivered through dedicated networks of care (e.g., Oncology Network, Stroke Network) according to the guidelines reported on the Regional Healthcare Plan (Regional Law No. 19/2016). The network for obesity was approved and included in this plan in February 2016.

Moreover, healthcare provision are locally delivered and administered through Local Healthcare Units (LHU), geographically based in seven districts of Veneto (Figure 1). The Veneto Region has a population of 6 million inhabitants. Overweight and obesity rates among adults are 34.5 and 9.6 percent, respectively.¹ This means that at least 1 out of 10 people seeking healthcare has obesity and requires proper resource allocation in terms of facilities, logistics, expertise, provision-related costs (e.g., medications) regardless

of whether bariatric surgery is even considered. The “globesity challenge” spurs overall healthcare-related cost to soar and subsequently clash with budget constraints. These considerations directly involve the Regional Administration, as it is the primary healthcare provider and payor.

Given the clinical complexity behind obesity, the interdisciplinary nature of bariatric practice demands dedicated resources and expertise that are mainly institution-related.

Neither national nor local health authorities have yet implemented a plan to coordinate the bariatric activity within ruled territories. In cooperation with the Regional Health Authority we have promoted the constitution of a Bariatric Network (Rete Obesità Veneto – RObV) in the wake of the Regional Healthcare Plan, involving all the existing Institutions and healthcare providers committed to the treatment of obesity.

RATIONALE

There is a logic in setting up a regional bariatric network in terms of resource allocation, standard healthcare provision,

extensive and appropriate coverage for population, risk management, and costs containment. Moreover, such a network can significantly promote research and partnership.

METHODS

As with other Regional Networks of Care, RObV is based on a hub-and-spoke model.

Continued on page 16

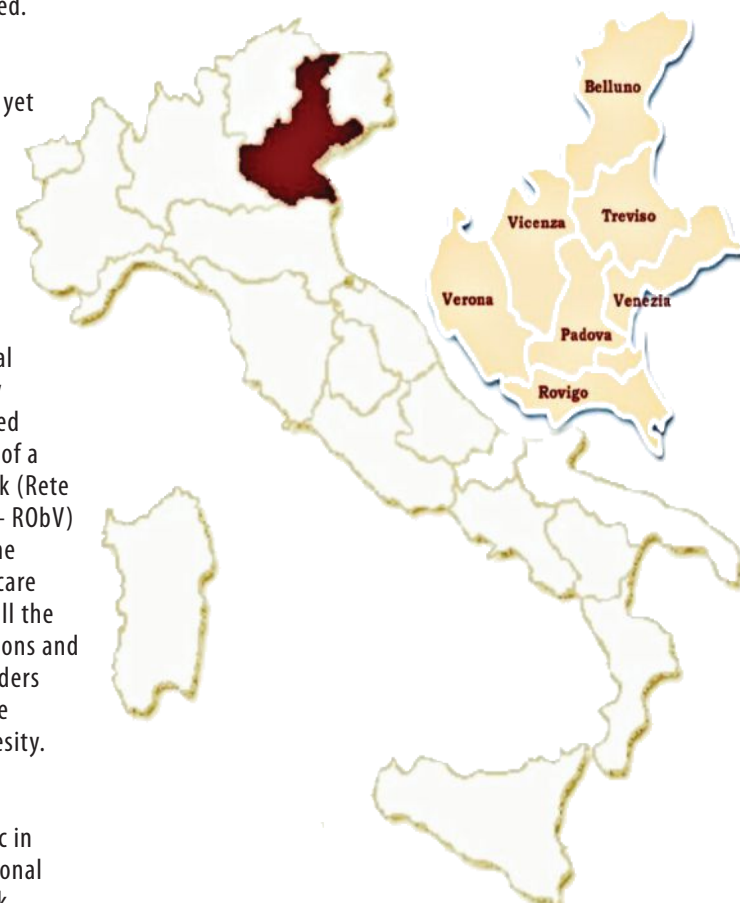


FIGURE 1. Italy and the Veneto Region. The Veneto region, situated in the northeast of Italy, comprises seven district capitals that correspond to Local Health Units of the Obesity Network.

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INTEGRATED PATHWAY OF CARE

VENETO OBESITY NETWORK

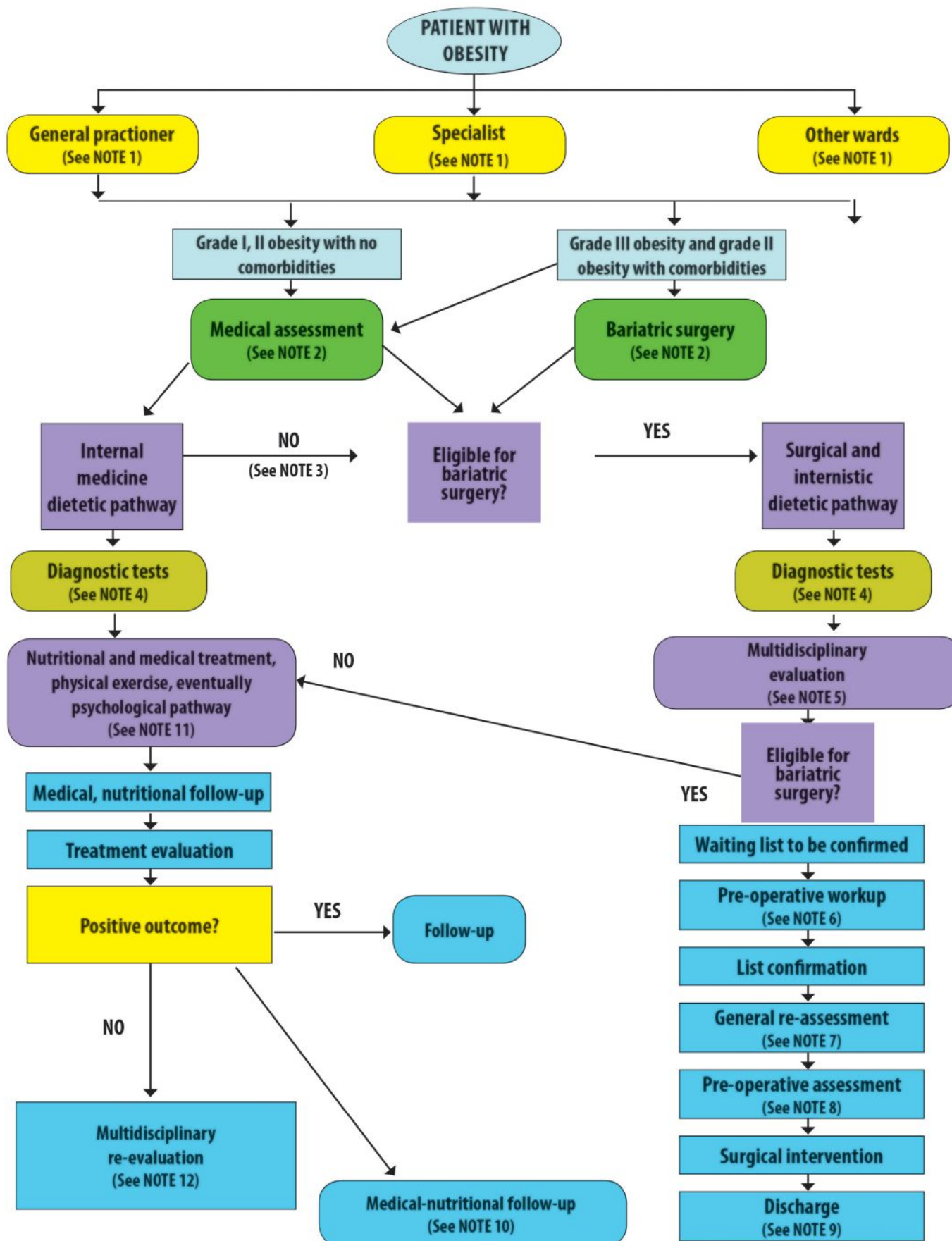


FIGURE 2. Integrated care pathway for adult patients with obesity

NOTE 1: TRIAGE. For general practitioner, specialist, and other wards.

NOTE 2: PATIENT ENGAGEMENT. For surgeon, internist, and/or nutritionist. Complete medical history/physical examination, search of symptoms using obstructive sleep apnea syndrome (OSAS) and Epworth Sleepiness Scale (ESS) questionnaires, take patient's nutritional anamnesis, administer moving questionnaire and psychometric test for psychological assessment.

NOTE 3: EXCLUSION CRITERIA. Age 70 years or older, presenting with a IV on the American Society of Anesthesiologists (ASA) classification of physical health scale (I [patient is a completely healthy fit patient]–V [A moribund patient who is not expected to live 24 hours with or without surgery.]), refuses treatment.

NOTE 4: PHENOTYPING LAB TESTS. Nutritional evaluation with food diary, polysomnography OSAS/ESS psychological assessment when required, sport medicine evaluation.

NOTE 5: OBESITY STADIATION. Classify patient's obesity stage using the Edmonton Obesity Staging System (0 [No apparent risk factors]–4 [severe disabilities from obesity-related chronic diseases]).

NOTE 6: PREOPERATIVE ASSESSMENT. First-level assessment: Upper gastrointestinal (GI) endoscopy with biopsy, upper GI X-ray with contrast, liver ultrasound scan; second-level assessment: pH manometry, magnetic resonance imaging (MRI)/computed tomography (CT) scan.

NOTE 7: GENERAL RE-ASSESSMENT. For surgeon, internist, nutritionist, clinical psychologist, exercise medicine specialist, and nurse. Internal medicine re-assessment, nutritional counseling, nutritional rehabilitation, psychological support, physical training in gym with nursing recall.

NOTE 8: PREOPERATIVE ASSESSMENT. For nutritionist and anesthetist. Anthropometric re-assessment and diet recall, physical rehabilitation.

NOTE 9: DISCHARGE. For surgeon, internist, and nutritionist. Postintervention nutritional advice, evaluation for surgical or nutritional complications.

NOTE 10: FOLLOW-UP. For surgeon, internist, nutritionist, sport medicine specialist, and plastic surgeon. One month postoperative: surgeon and nutritionist evaluation; 3, 6, and 12 months postoperative: internist and nutritionist evaluation, ev. investigations in case of complications, ev. plastic surgery, obesity, and pregnancy; 6 to 12 months postoperative: functional re-evaluation and physical exercise.

NOTE 11: MEDICAL THERAPY. For internist, nutritionist, sport medicine specialist, and clinical psychologist. Internal medicine and nutritionist pathway, physical exercise encouragement, and eventually psychological pathway.

NOTE 12: MULTIDISCIPLINARY RE-EVALUATION. For surgeon, internist, nutritionist, and clinical psychologist. Revision/ conversion surgery, hospitalization for rehabilitative diet.

GUT CHECK: A Reference Guide for Media on Spotting False Weight Loss Claims

To help media outlets spot false weight loss representations—“gut check” claims—the Federal Trade Commission (FTC) has compiled a list of seven advertising claims that are likely to be a tip-off to deception.

The 7 Gut Check Claims

- 1. Causes weight loss of two pounds or more a week for a month or more without dieting or exercise.**
Example: *“Drop four dress sizes in just a month without changing your eating habits or enduring back-breaking trips to the gym.”*
- 2. Causes substantial weight loss no matter what or how much the consumer eats.**
Example: *“This revolutionary product lets you enjoy all your favorites—hamburgers, fries, pasta, sausage, and even gooey desserts—and still lose weight.”*
- 3. Causes permanent weight loss even after the consumer stops using product.**
Example: *“No more yo-yo dieting. Eat more. Weigh less. And finally—yes, finally—stay slim for the rest of your life.”*
- 4. Blocks the absorption of fat or calories to enable consumers to lose substantial weight.**
Example: *“Block fat before your body absorbs it. The pounds and inches will melt away.”*
- 5. Safely enables consumers to lose more than three pounds per week for more than four weeks.**
Example: *“Take off up to 10 pounds a week safely and effectively. Imagine looking into the mirror two months from now and seeing a slim reflection.”*
- 6. Causes substantial weight loss for all users.**
Example: *“Lose 10-15-20 pounds. This product works for everyone, no matter how many times you’ve tried and failed.”*
- 7. Causes substantial weight loss by wearing a product on the body or rubbing it into the skin.**
Example: *“Slink into those skinny jeans in no time. Our patent-pending body wrap will increase the metabolism around your hips to burn fat faster. You’ll lose 2 to 3 pounds per week just by wearing the body wrap while relaxing. Blast off 25 pounds in eight short weeks.”*

✓CHECK YOUR GUT

CAN YOU SPOT FALSE WEIGHT LOSS CLAIMS?

TAKE THE QUIZ!

 <https://www.ftc.gov/tips-advice/business-center/advertising-marketing/gut-check-quiz>

SOURCE: The Federal Trade Commission. Gut Check: A Reference Guide for Media on Spotting False Weight Loss Claims. Jan. 7, 2014. <http://www.business.ftc.gov/documents/0492-gut-check-reference-guide-media-spotting-false-weight-loss-claims>. Accessed May 31, 2018

The large “hub” center and smaller “spoke” centers are set up to deliver comprehensive care to patients with obesity. The hub is responsible for planning and coordination according to Regional Health Authority. The hub also serves as an end-referral tier for spoke centers and headquarters for research and partnerships programs. The development of RObV was designed according to the following milestones:

- 1. State of the art obesity in Veneto.**
A position paper was prepared by the Bariatric Unit of Padova to address the epidemiological relevance and the impact on health care of general population at a regional level. This paper was presented to the Regional Health Authority.
- 2. Constitution of a regional interdisciplinary obesity working group.** The Regional Administration invited all the healthcare professionals involved in obesity treatment to take part in a regional interdisciplinary obesity working group (IOWG). The final aim was to develop and share common clinical pathways and protocols of care on the basis of available published literature and guidelines.
- 3. Draft of the Integrated Care Pathway on Obesity Official Document.** The IOWG was assigned to draft the official Integrated Care Pathway (ICP) for the Veneto Region to be approved and published by the Regional Health Authority in its official bulletin (*Bollettino Ufficiale della Regione del Veneto [BUR]*).
- 4. Establishing interdisciplinary obesity teams at the LHU level (hub and spokes).** Every LHU had to establish an interdisciplinary obesity team (IOT) involving all the healthcare professionals (i.e., physicians, surgeons, integrated health) devoted to comprehensive obesity care and nominate a team leader for Institutional contacts.
- 5. RObV semi-annual meetings.** To align and update the clinical practice and activities of hub and spoke centers, dedicated one-day (maximum 7 hour) semi-annual RObV Meetings (Fall and Spring) were established and directly promoted by the Regional Health Authority, including continuing medical education (CME) credits allowance. The general format was divided into two sessions. The first session covered different topics related to physiology of the obesity disease, with a keynote lecture, presentations by RObV speakers, and a general discussion. The second session provided an RObV update based on results of questionnaires delivered to the participating centers on local achievements and critical issues. A discussion on future perspectives and proposals followed.

- 6. Central Audit (Regional Administration) to assess RObV outcomes.**

RESULTS

The first move of RObV stemmed from the Institutional ICP on Obesity published in 2012 by the Interdisciplinary Obesity Group of Azienda Ospedaliera-Università di Padova. This document aimed to regulate the comprehensive care of obesity within this institution according to up-to-date standards of care.⁵

A position paper was then presented to the Regional Health Authority with data regarding the epidemiology and the state-of-the-art obesity healthcare in the Veneto Region. The paper was based on regional data derived from the reports of two periodic epidemiologic surveys conducted by the Italian National Institute of Health (Istituto Superiore di Sanità) on the adult and pediatric Italian population.^{6,7}

The Regional Administration designated the Padova University Hospital (Azienda Ospedaliera-Università di Padova) as the Hub Center of Comprehensive Obesity Care for the Veneto Region in 2015.⁸ The IOWG was then established to promote the constitution of RObV and draft the Regional ICP on Obesity. In 2016, the Regional Administration ruled to include RObV in the Regional Network of Care system.⁹ Accordingly, the general manager of each LHU had to promptly establish a local IOT to activate RObV at both hub and spokes levels and nominate a team leader. The Official Regional ICP on Obesity was finally approved and published in 2017¹⁰ and represents the clinical referral for bariatric practice in the Veneto Region. The ICP provides clear guidelines for the referral of patients with obesity to medical obesity clinics or to the bariatric units, according to the severity of obesity and its related complications. Moreover, indications and contraindications to bariatric surgery are clearly specified, and the diagnostic minimal multidisciplinary workup for patients assigned to both medical and surgical obesity management is indicated. Finally, the multidisciplinary follow-up and the re-assessment of the clinical outcomes are considered as an integral part of the clinical pathway (Figure 2).

RObV Semiannual Meetings were preceded by two regional events. The first event occurred after the Network approval and aimed to promote and disseminate RObV at the LHU level. The second event was dedicated to presentation of the Regional ICP on Obesity, drafted by the IOWG and approved by the Regional Health Authority, which was to publish in the *BUR*. The Spring 2017 (June) meeting, focused on “Obesity Unit” in terms of clinical daily practice and research opportunities. The Fall 2017 (October) meeting focused on new concepts of obesity, such as basic science, new pharmacological approaches, and advantages and limitations of metabolic surgery. The Spring 2018 (June) meeting

focused on Obesity ICP. Specific areas of concern included Health Technology Assessment (HTA), costs, adequacy and issues, with extra time to address body image, sex, fertility, and pregnancy after bariatric surgery. The Fall 2018 meeting (October) involved regional general practitioners in an effort to consolidate and fulfill the link between hospitals, patients, and family doctors. All the events achieved the financial coverage through ad-hoc partnerships with private investors. At present time, Central Audit is not fully operating.

DISCUSSION

Although the prevalence of severe obesity is significant and well rooted in modern and developed societies, and the impact in terms of comorbidity, disability, and social discomfort are well known, the penetration of comprehensive obesity treatment is not yet satisfactory. Generally, there is little compassion shown to individuals who struggle with food choices and portion control, and thus, stigmatization exists. Obesity is more than just quantity and quality of food,^{11,12} it often involves genetics, environment, and environment-gene interaction. The misalignment between the obesity epidemic with related health costs and the provision of adequate comprehensive obesity management will not be solved without taking into account the two major issues affecting the provision of care in different models—accessibility and allotted resources. In Italy, healthcare provision should be equally granted to all citizens, but this must be done by matching resource allocation with healthcare costs and budget constraints. In this scenario, comprehensive obesity care centers compete for resources with other diseases or healthcare needs, like cancer and transplantation, and this presents a challenge. Increased social awareness, empathy, and compassion surrounding individuals with obesity might result in a more powerful political and financial yield, thus facilitating the allocation of resources for obesity care.

The best way to achieve this goal was to act within the Regional Healthcare Plan, gathering all the involved professional caregivers around the same ICP and within the same network (RObV). Joining forces provided two immediate advantages: equal accessibility for citizens across the regional territory with direct cost containment for the community. The adoption of common validated and shared clinical practices could also improve the quality of care at large, preventing stigmatization while enhancing patients' engagement. Moreover, the creation of a network of clinical units specifically dedicated to obesity management may facilitate the access to this type of care to the patients, also favoring a better penetration of bariatric surgery, which is currently utilized by less than 0.02 percent of the eligible population.

Central Audit will assess whether all these efforts aimed to improve comprehensive obesity care will translate into a reduction of all direct and indirect costs and increase the penetration of bariatric surgery when deemed a necessary treatment option. Until now, different clinical conditions, such as type 2 diabetes mellitus, nonalcoholic fatty liver disease, and joint degradation, were separately budgeted, although directly related to obesity.

CONCLUSION

Presently, our biggest achievement has been heightened obesity awareness among policy makers. Ultimately, with proper recognition of the impact of obesity, resources will be allocated. Although a first step, this was a great professional opportunity for both caregivers and managers.

Professional and institutional networking can be reasonable, advantageous, and also cost effective in different settings of healthcare provision, although it demands a higher vision and greater effort to put together different stakeholders.

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Thermogenic Foods and Obesity

Foods that are classified as thermogenic require more energy and work than typically expended to be digested and absorbed.

This means the body expends more energy digesting the food than the food provides the body as energy, thus burning calories in the process, which is composed of a series of reactions (i.e., ingestion, digestion, and absorption). Compared to regular food digestion, which represents 5 to 10 percent of the total energy expenditure, thermogenic food represents a greater percentage of total energy expenditure.



Green tea. Green tea extract, which contains both caffeine and catechin polyphenols, is considered a thermogenic food. Caffeine is a sympathetic nervous system stimulant known to increase energy expenditure. Green tea in particular has been shown to increase daily energy expenditure by four percent.

Cocoa. Cocoa is rich in flavonoids and is widely used in medical treatment of cardiac diseases and in the prevention of cancer. Furthermore, the use of cocoa reduces the production of inflammatory molecules species reactive to oxygen, reduces the expression of various genes associated with the transport of fatty acids and their synthesis in the liver and mesenteric, and increases expression of genes associated with thermogenesis. Procyanidin, which is present in cocoa, has the ability to modulate TNF- α and this induces NF- κ B, a cytokine transcription factor.

Ginger. Ginger, which is also rich in flavonoids, is proposed to have anti-inflammatory and antihypertensive properties, as well as effects on insulin sensitivity and stimulating peristalsis and the secretion of gastric juice.

Cinnamon. Studies *in vitro* and *in vivo* demonstrate that cinnamon has a sensitizing effect on insulin and may be used to control diseases, such as type 2 diabetes. *Cinnamomum zeylanicum* or ceylon cinnamon, which is considered to be "true" cinnamon, has been found to help in reducing hunger, lowering the atherogenic effects of LDL, and reducing insulin levels, providing homeostasis of glucose. It is important to note that all types of cinnamon contain coumarins, which in high doses have potentially toxic effects on the liver. The coumarin content in Ceylon cinnamon appears to be lower than in other types, such as *Cinnamomum aromaticum* or Chinese Cassia. It is important to recommend the correct form of cinnamon to patients.

SOURCE: Faria SL, Faria OP, Prates F, Berber L. Is there room for functional foods and phyto supplements in the bariatric patient population? *Bariatric Times*. 2015;12(9):13-16. **BT**

ASMBS STATE CHAPTER SPOTLIGHT

This column is dedicated highlights recent activities and initiatives of the American Society for Metabolic and Bariatric Surgery (ASMBS) state chapters.

THE OHIO & KENTUCKY ASMBS STATE CHAPTER: Building on Past History and Recent Success



by Adrian G. Dan, MD, FACS, FASMBS, and Christopher Daigle, MD, FRCS, FACS

Dr. Dan is Director of the Bariatric Care Center at Summa Health in Akron, Ohio, and Associate Professor of Surgery at Northeastern Ohio Medical University (NEOMED) in Rootstown, Ohio. Dr. Daigle is a bariatric surgeon at Akron General Bariatric Center in Akron, Ohio.

Bariatric Times. 2019;16(1):18–19.

The Ohio and Kentucky State Chapter of the American Society for Metabolic and Bariatric Surgery (ASMBS) was first established as the Ohio State Bariatric Society (OSBS) in 2006. The OSBS was established to organize and advocate for the bariatric community on the state and regional levels. The similarities and geographic proximity of Ohio and Kentucky along the Ohio River made collaboration between the two states an obvious arrangement. Starting in 2018, the two states joined forces and formed the Ohio and Kentucky State Chapter of the ASMBS and officially began conducting business under the updated name as reflected in its newly designed logo and website (<https://www.ohkyasmbs.org/>). This has facilitated a synergy of resources that can be applied toward the causes of bariatric caregivers and patients.

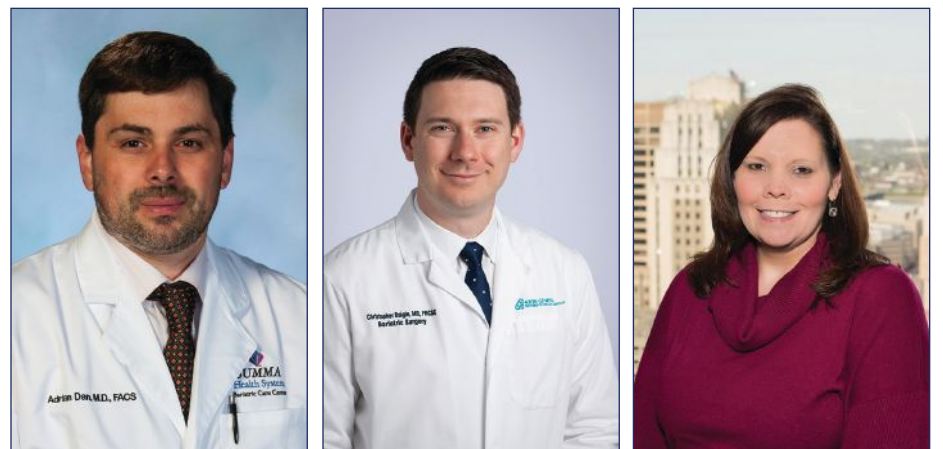
Ohio and Kentucky, situated in the heart of the Midwest, are in the midst of America's obesity epidemic (See Obesity Fact Sheet Infographics on the following page). With a combined population of more than 16 million people and with obesity rates between 30 and 35 percent, researchers estimate that well over 5 million individuals from these states are currently affected by the disease and its associated comorbidities.¹

The region has deep traditions with bariatric surgery, having been home to many of its pioneers during the course of their storied careers. These include Walter Pories, MD, FACS; Donald Hess, MD, FACS; Michel Gagner, MD, FRCS, FACS, FASMBS; and Philip Schauer, MD. Major contributions to our field include the development of the biliopancreatic diversion with duodenal switch (BPD-DS), which was first performed at Wood County Hospital in Ohio in 1988.² Several centers have also produced valuable studies that have added tremendously

to the general knowledge, as well as high-level evidence of the effectiveness of bariatric and metabolic procedures. Numerous institutions throughout the two states have long been venerated for some of the most prestigious surgical residency and fellowship programs in the country. As a result, the demand for bariatric and metabolic surgical procedures has been met with the delivery of high-quality bariatric care for decades at teaching and community hospitals throughout the area. Ohio and Kentucky are home to 40 Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP) centers.^{3,4} Several distinguished members of the chapter have held leadership positions in ASMBS as committee chairs and executive board members. Dr. Schauer, Professor of Surgery at the Cleveland Clinic Lerner College of Medicine and Director of the Cleveland Clinic Bariatric and Metabolic Institute (BMI) at Cleveland Clinic in Cleveland, Ohio, and Stacy Brethauer, MD, FACS, FASMBS, from the Cleveland Clinic BMI Department of Surgery at Cleveland Clinic, both served terms as ASMBS Presidents.

The most notable recent accomplishment of the chapter has been the inclusion of bariatric surgery benefits by several payors that now are in line with the established and widely accepted National Institutes of Health (NIH) criteria. Thousands of patients now have access to bariatric care and can now benefit from surgical therapy. This feat was largely realized through the relentless efforts of Immediate Past Chapter President C. Joseph Northup, MD, FACS, who also serves as the chapter's State Access-to-Care Representative (STAR) and co-chair of the ASMBS Access-to-Care committee.

This year, the chapter revamped its annual meeting to include not only bariatric surgeons and bariatricians, but also to strongly encourage



The Ohio & Kentucky Chapter of the American Society for Metabolic and Bariatric Surgery (ASMBS) current leadership. From left to right: Adrian G. Dan, MD, FACS, FASMBS (president); Christopher Daigle, MD, FRCS (vice president); Anne Kroger, MPAS, PA-C (integrated health representative).



The Ohio & Kentucky Chapter of the American Society for Metabolic and Bariatric Surgery (ASMBS) current and past leadership. Left (From left to right): Christopher Daigle, MD, FRCS (current vice president); Patricia Choban, MD (past president and founder); Adrian G. Dan, MD, FACS, FASMBS (president), Philip Schauer, MD (founder); Bipan Chand, MD, FACS, FASGE, FASMBS (past president), and Joe Northup, MD, FACS (immediate past president). Right: Adrian G. Dan, MD, FACS, FASMBS (president), presenting the "Walter Pories Keynote Address" award to Philip Schauer, MD (founder).

all to join the state chapter in their efforts to promote the benefits of bariatric surgery as well as increase patient access to surgical treatment of obesity. This includes all integrated health professionals, surgical residents, bariatric fellows, and industry partners whose efforts and dedication contribute to the management and success of bariatric patients. This conference, held in Columbus, Ohio, on

September 14 to 15, 2018, revealed the strong interest that all clinicians have in the surgical treatment of obesity as well as unprecedented support from our industry partners. The agenda included lectures delivered by experts with international reputations, including Drs. Leslie Heinberg, PhD; Leena Khaitan, MD, MPH; W. Scott Butsch, MD; Dr. Northup, and Erik Wilson, MD. Newly established traditions included the

OHIO Obesity Fact Sheet

ADULT OBESITY FACTS:

Obesity affects more than **29.8%** of Ohioans.

Ohio is ranked **26/51** in states impacted by obesity.

Ohioans Affected by Obesity by Race:

- Caucasian: 30.5%
- African American: 37.1%
- Hispanic: 26.3%

More than **30.5%** of male Ohioans are affected by obesity.

More than **29.7%** of female Ohioans are affected by obesity.

Ohio ranks **17th** in adults with Type 2 Diabetes (11%).

CHILDHOOD OBESITY FACTS:

Children Affected by Obesity:

- Ages 2-4: 12.4%
- Ages 10-17: 17.4%

Ohio is one of the 19 states that have BMI screening requirements.

NATIONAL COST OF OBESITY

- \$315.8 BILLION**: Estimated cost of annual obesity-related healthcare
- 42%**: How much more healthcare costs for individuals affected by obesity
- \$14.1 BILLION**: The direct costs caused by childhood obesity
- \$4.3 BILLION**: Nationwide annual costs due to obesity-related absenteeism

Obesity is a serious chronic condition that continues to have a growing impact on our society, and carries with it a large number of related conditions such as diabetes, hypertension, heart disease, and more. Action must be taken to address this epidemic at all levels — individual, family, community, government, healthcare and insurance. To learn more about the disease of obesity, treatment options, weight bias, and more, please visit the Obesity Action Coalition (OAC) Web site at www.ObesityAction.org.

References:

- Centers for Disease Control
- Trust for America's Health
- Obesity Action Coalition

OAC
Obesity Action Coalition
www.ObesityAction.org

Questions?
If you have any questions regarding the above information or if you would like to receive free educational materials on obesity, please contact the OAC National Office at (800) 717-3117 or info@obesityaction.org.

KENTUCKY Obesity Fact Sheet

ADULT OBESITY FACTS:

Obesity affects more than **34.3%** of Kentuckians.

Kentucky is ranked **8/51** in states impacted by obesity.

Kentuckians Affected by Obesity by Race:

- Caucasians: 34.4%
- African Americans: 40.2%
- Hispanics: 28.5%

More than **36%** of male Kentuckians are affected by obesity.

More than **32.5%** of female Kentuckians are affected by obesity.

The age group most affected by obesity in Kentucky is **45-64** (38.2%).

Kentucky ranks **7th** in adults with Type 2 Diabetes (12.9%).

CHILDREN AFFECTED BY OBESITY IN KENTUCKY:

Kentucky is one of 15 states that receives CDC grant funds for training to help with obesity prevention in Early Childhood Education settings.

CHILDREN AFFECTED BY OBESITY

- Ages 2-4: 13.3%
- Ages 10-17: 19.6%

COST OF OBESITY IN KENTUCKY:

- The total cost of obesity in Kentucky: **\$36.31 BILLION**
- The cost of obesity for Medicare in Kentucky: **\$4.17 BILLION**
- The cost of employment for the population with obesity is **\$28.69 BILLION** more than the normal weight population.

NATIONAL COST OF OBESITY:

- \$1.72 TRILLION**: The total cost of obesity
- \$1.24 TRILLION**: The total indirect cost of obesity
- \$480 BILLION**: The total direct healthcare cost of obesity
- \$2.9 BILLION**: The direct costs of childhood obesity
- Healthcare costs for individuals affected by obesity is **42% HIGHER**
- For people living with obesity, **28.2%** of their annual healthcare costs are spent treating obesity-related conditions.

About The OAC
The Obesity Action Coalition (OAC) exists to serve the needs of and give a voice to the individuals affected by the disease of obesity while helping them along their journey toward better health through education, advocacy and support.
Please visit www.ObesityAction.org to learn more about the disease of obesity, treatment options, weight bias and much more.

References:

- Centers for Disease Control
- Clinical Chemistry
- Milken Institute
- Obesity Action Coalition
- Trust for America's Health

OAC
Obesity Action Coalition

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inauguration of the "Philip R. Schauer Clinical Lecture," delivered by Past Chapter President Bipan Chand, MD, FACS, FASGE, FASMBS, and the "Walter Pories Keynote Address," delivered by Dr. Schauer.

In the future, we hope to further expand our recent accomplishments in the areas of patient advocacy, bariatric surgical training, education for integrated health professionals, and research collaboration. Significant opportunity exists to facilitate such progress through enhanced local and regional organization. The chapter's current leadership comprises Integrated Health Representative Anne Kroger, PA-C; Vice President Dr. Christopher Daigle; and President Dr. Adrian G. Dan. Chapter events and noteworthy bariatric news can be found on the group's new online home at www.ohkyasmbs.org.

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ADDRESS FOR CORRESPONDENCE:

Adrian G. Dan, MD, FACS, FASMBS; Email: dana@summahealth.org **BT**

Anti-obesity Medications as Adjunct Therapy for Patients with Obesity and Nonalcoholic Fatty Liver Disease in "Treatment Purgatory"

Individuals with obesity, metabolic syndrome, and type 2 diabetes mellitus (T2DM) are at increased risk for developing nonalcoholic fatty liver disease (NAFLD), a condition in which fat builds up in the liver in the absence of significant alcohol use and other known causes of chronic liver diseases. NAFLD can progress to a more severe form called nonalcoholic steatohepatitis (NASH). NASH puts the patient at higher risk of cirrhosis, end-stage liver disease, hepatocellular carcinoma, and death.

Currently, no medications have been approved to treat NAFLD and NASH; however, clinical trials are in progress. The cornerstone of treatment for NAFLD and NASH is weight loss achieved through lifestyle modifications (i.e., diet and physical activity). This leaves a treatment gap for the patient population with obesity and NAFLD that fails to achieve the recommended 5 to 10-percent weight loss.

In a recent article published in *Diseases*, researchers discuss patients stuck in "NAFLD purgatory," unable to achieve sufficient weight loss with lifestyle modification alone and ineligible for bariatric surgery. They propose that healthcare providers consider using anti-obesity medications in combination with diet and exercise as therapy for these patients.

SOURCE: Yoo ER, Sallam S, Perumpail BJ, et al. When to Initiate Weight Loss Medications in the NAFLD Population. *Diseases.* 2018;6(4). pii: E91. doi: 10.3390/diseases6040091. **BT**

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SURGERY FOR OBESITY AND RELATED DISEASES

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February 16–19, 2019
Fort Lauderdale, Florida
<https://ccfcme.org/DDSI-Week>



19TH ANNUAL MINIMALLY INVASIVE SURGERY SYMPOSIUM (MISS)

February 25–29, 2019
Las Vegas, Nevada
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ANNUAL MEETING OF THE SOCIETY OF AMERICAN GASTROINTESTINAL AND ENDOSCOPIC SURGEONS (SAGES 2019)

April 3–6, 2019
Baltimore, Maryland
<https://www.sages2019.org/>



OBESITY MEDICINE ASSOCIATION (OMA) SPRING OBESITY SUMMIT

April 3–7, 2019
Houston, Texas
<https://spring.obesitymedicine.org>



AMERICAN SOCIETY FOR METABOLIC AND BARIATRIC SURGERY (ASMBS) WEEKEND 2019

June 20–22, 2019
Chicago, Illinois
<https://asmbsweekend.com/>



DDSI Week 2019
Digestive Disease & Surgery Institute Week

18th Annual Surgery of the Foregut Symposium
February 16–20, 2019
The Ritz-Carlton Fort Lauderdale, Fort Lauderdale, Florida

6th Annual International Congress for Fluorescence Guided Surgery
February 16, 2019

www.ccfcme.org/DDSI-Week



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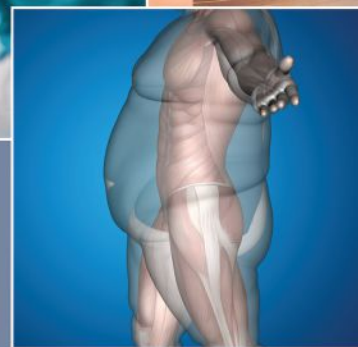
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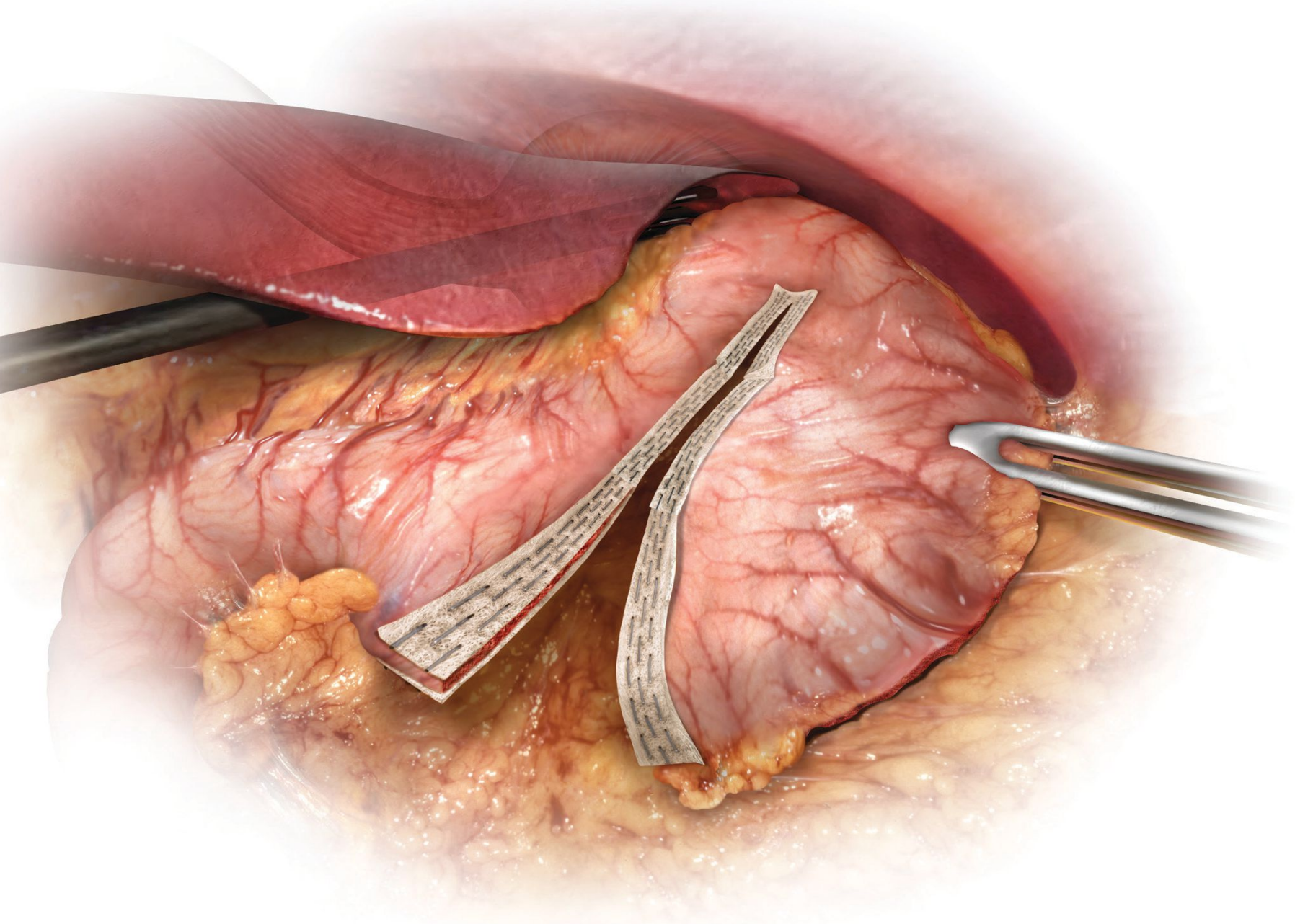
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