The Future of Endobariatrics
Bridging the Gap

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KEYWORDS

• Obesity • Weight loss • Endobariatrics • Endoscopic sleeve gastroplasty
• Intragastric balloons • Endoscopic bariatric therapy

KEY POINTS

- Overview of the most promising future directions in the field of endobariatrics.
- Clinical trials and international results highlighting developing tools and techniques.
- Practical, economic, and clinical considerations for adopting endobariatrics in patient care.

INTRODUCTION

The global obesity epidemic continues to escalate at an alarming rate, posing significant challenges to health care systems and individuals worldwide. In the United States alone, projections indicate that by 2030, nearly half of all adults will have obesity, with almost a quarter struggling with severe obesity.[1] Obesity is a complex, multifactorial chronic disease associated with numerous health risks, including type 2 diabetes, cardiovascular disease, and various metabolic disorders.[2] The economic consequences are staggering, with estimates suggesting annual costs exceeding $260 billion in the United States.[3,4]

Current treatment modalities for obesity, such as lifestyle modifications, pharmacotherapy, and bariatric surgery, have limitations. Lifestyle interventions, including dietary changes and increased physical activity, are the cornerstone of obesity management but often yield modest and temporary benefits.[5] The Look AHEAD trial and the Diabetes Prevention Program, 2 landmark studies, provided evidence supporting the efficacy of intensive lifestyle interventions in promoting weight loss and overall health improvements.[6,7] However, the magnitude and sustainability of weight loss achieved through these interventions remain significantly lower compared with other treatment options.

Pharmacotherapy has emerged as another tool in the fight against obesity, with several US Food and Drug Administration (FDA)-approved medications available. As

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of October 2023, 7 antiobesity medications have been approved by the FDA, with an eighth, Tirzepatide (Mounjaro), currently under expedited review.[8] Although these medications have shown promise in aiding weight loss and improving metabolic parameters, their efficacy varies among individuals, and long-term adherence remains a challenge.[8,9] A detailed analysis of phase 3 and extension trials of these antiobesity agents reveals that, with the exception of Semaglutide (14.8% total body weight loss [TBWL]) and Tirzepatide (15% to 20.9% TBWL), the weight loss efficacy of the medications ranges from 6% to 10% TBWL. Even the most effective pharmacologic agents fall short when compared to the outcomes achieved with endobariatric therapies and surgical interventions.[8] Furthermore, within the subgroup of patients achieving at least 10% TBWL, there is a notable difficulty in maintaining these weight loss milestones long-term, suggesting that although these pharmacologic agents represent progress, there is a clear need for integrated management strategies to enhance and sustain therapeutic outcomes.

Bariatric surgery, including procedures such as Roux-en-Y gastric bypass (RYGB) and sleeve gastrectomy (SG), has demonstrated remarkable success in producing substantial and sustained weight loss and improving metabolic health. A randomized controlled trial examining 5-year postsurgical outcomes found that RYGB and SG yielded TBWL rates of 21.7% and 18.5%, respectively.[10] However, these procedures are not without risks and complications. Postsurgical patients commonly experience nutrient anemia or calcium and vitamin deficiencies, necessitating lifelong supplementation.[11–13] More severe complications can include micro- and macronutrient deficiencies, anastomotic stenosis, ulceration, reflux esophagitis, cholelithiasis, steatohepatitis, and altered pharmacokinetics.[11–13] Furthermore, although many patients perceive bariatric surgery as transformative, leading to weight loss, improved obesity-related health issues, and enhanced quality of life, many express concerns about the associated risks, particularly among racial minority groups.[14]

Despite the potential benefits of bariatric surgery, its utilization remains low. It is estimated that less than 1% of eligible patients opt for bariatric surgery because of concerns related to accessibility, costs, and apprehensions about both actual and perceived health risks associated with the procedure.[15,16] The limited adoption of bariatric surgery highlights the need for alternative treatment options that bridge the gap between lifestyle interventions and surgical procedures. In this context, endobariatric therapies have emerged as a promising solution, offering minimally invasive alternatives that fill the void between the often-ineffective lifestyle modifications and the invasive nature of bariatric surgery.

Looking ahead to the future of endobariatrics, it is essential to learn from the challenges of the past and apply those lessons to pave the way for success. Although previous endobariatric therapies faced obstacles such as limited market adoption, advertising constraints, reimbursement hurdles, and restricted accessibility, the future holds immense potential for therapies that demonstrate effectiveness, safety, minimally invasive approaches, reduced complication rates, shorter recovery periods, and favorable patient feedback.[17] With a clear understanding of past challenges and a commitment to innovation, the endobariatric community can enthusiastically embrace the opportunities that lie ahead.

ENDOBARIATRIC THERAPIES: THE CURRENT LANDSCAPE

Endobariatric therapies have emerged as a compelling alternative to conventional obesity treatments. By leveraging advanced endoscopic techniques and technologies, endobariatric procedures provide safer, more accessible, and less invasive

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options to promote weight loss and enhance metabolic health. FDA-approved therapies encompass restrictive procedures and aspiration therapy.

Restrictive endobariatric procedures aim to reduce gastric capacity and induce early satiety, leading to reduced caloric intake and weight loss. The most widely utilized restrictive procedures include intragastric balloons (IGBs) and endoscopic sleeve gastroplasty (ESG). IGBs are space-occupying devices placed endoscopically into the stomach to induce satiety and restrict food intake. Several IGBs have been approved by the FDA, including single fluid-filled balloons (Orbera and Spatz3), gas-filled balloons (Obalon), and double fluid-filled balloons (ReShape Duo, no longer commercially available).[16] The efficacy of these devices has been demonstrated across multiple studies. A meta-analysis of 5668 patients who underwent IGB placement demonstrated a mean TBWL of 11.1%, a mean excess body weight loss (EBWL) of 31.8%, and improvements in obesity-related comorbidities such as hypertension, dyslipidemia, and type 2 diabetes mellitus.[18] Randomized controlled trials and studies have shown significant weight loss results with the Orbera,[19] ReShape Duo,[20] Obalon,[21] and Spatz3[22] balloons, with each offering unique advantages such as adjustable inflation levels (Spatz3) and swallowable placement (Obalon).[23]

Whereas IGBs temporarily reduce stomach capacity, ESG offers a more durable reduction in gastric volume. ESG utilizes an endoscopic suturing device such as Apollo OverStitch to create a sleeve-like gastric pouch along the lesser curvature of the stomach, reducing its volume and altering gastric emptying. A prospective, multicenter study evaluating the long-term outcomes of ESG found a mean TBWL of 15.1% and a mean EBWL of 57.7% at 6 months, with sustained weight loss at 12 and 18 to 24 months.[24] This weight loss is sustained over a period of 2 to 5 years.[25] ESG has also been associated with improvements in hypertension, type 2 diabetes, and hyperlipidemia.[26]

Aspiration therapy involves the use of a percutaneous gastrostomy tube with an external port that allows for the removal of a portion of the ingested meal from the stomach, reducing caloric absorption. The AspireAssist system (Aspire Bariatrics) was the only FDA-approved aspiration therapy device but is no longer available.[27] In the PATHWAY trial, patients using the AspireAssist system achieved 14.2% TBWL at 1 year, 15.3% at 2 years, 16.6% at 3 years, and 18.7% at 4 years, along with improvements in HbA1c, lipid profiles, and liver enzymes.[27]

The FDA-approved TransPyloric Shuttle (TPS) positions a spherical silicone balloon between the stomach and duodenum, utilizing a ball-valve mechanism to delay gastric emptying. In the ENDO-BESITY II trial (NCT02518685), patients who received TPS achieved 9.5% TBWL at 12 months compared with 2.8% in the sham group.[28] A recent study also showed the potential for sustained weight loss following TPS removal.[29]

ADVANCEMENTS IN ENDOBARIATRIC TECHNIQUES AND DEVICES

The endoscopist's toolkit is constantly expanding as new technologies undergo rigorous testing and come to market. These emerging tools incorporate feedback from previous generations of devices and promise enhancements in safety and efficacy.

Advancements in Endoscopic Suturing and Endoscopic Sleeve Gastroplasty

The techniques and devices used in ESG are continuously advancing, leading to improvements in the outcomes of endoscopic bariatric therapies. For instance, a small single-center study using a new longitudinal compression suturing technique

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demonstrated superior weight loss compared with traditional suturing patterns, although this technique is not yet FDA-approved.[30]

The EndoZip is an automated suturing system designed to simplify ESG and reduce the learning curve. In a first-in-human study with 11 patients, the device achieved a percent TBWL of 16.2 plus or minus 6.0% and a percent EWL of 54.3 plus or minus 28.4%, while preliminary results from a multicenter pilot study involving 45 patients showed a percent TBWL of 13.5%.[31] Although promising, more large-scale studies are needed to demonstrate the efficacy and safety of the procedure.

Differing from ESG in the suture location and technique, the primary obesity surgery endoluminal (POSE) procedure involves the placement of full-thickness sutures in the gastric fundus and distal body, resulting in a functional gastric volume reduction and delayed gastric emptying. A meta-analysis of 613 patients who underwent POSE found a mean EBWL of 48.86% and a mean TBWL of 12.68% at 12 to 15 months, with a pooled adverse event rate of 2.2%.[32] In addition, a distal belt-and-suspenders approach for gastric plication has been proposed.[33]

Endoscopic gastric plication involves creating pleats in the stomach lining without the full-thickness sutures used in POSE. The technique employs the Endomina suturing device, which can be easily assembled with any standard flexible endoscope. Although not currently FDA-approved, initial findings from a multicenter study involving 45 patients demonstrated a 29% EBWL and a 7.4% TBWL at 12 months, with no reports of severe adverse events.[34,35]

Advancements in Intragastric Balloons

The future of IGBs includes smart balloons with adjustable inflation levels and those that do not require endoscopic removal. The Allurion Balloon (Allurion Technologies, Natick, Massachusetts) is a swallowable, self-emptying balloon that does not require endoscopic placement or removal, offering a less invasive option for patients. In a large, multicenter study of 1770 patients, the Allurion Balloon achieved a percent TBWL of 14.4% at 4 months, with a low rate of serious adverse events (0.2%). Moreover, 99.9% of patients successfully swallowed the balloon with or without stylet assistance, bolstering its technical feasibility.[36]

Malabsorptive and Metabolic Therapies: New Directions

Malabsorptive endobariatric procedures aim to reduce nutrient absorption in the small intestine, mimicking the effects of surgical bypass procedures.

One example is duodenal mucosal resurfacing (DMR), which involves the application of thermal energy to the duodenal mucosa using the Revita DMR system (Fractyl Laboratories, Lexington, Massachusetts). This leads to mucosal remodeling and alters enteroendocrine signaling, potentially improving insulin sensitivity and glucose homeostasis. An international pilot study showed that DMR significantly lowered HbA1c and improved hepatic indexes assessing fibrosis.[37] In a small pilot study (n = 16), DMR combined with GLP-1 agonist liraglutide enabled 69% of patients to discontinue insulin and maintain HbA1c levels of no more than 7.5% at 6 months.[38] US clinical trials are currently enrolling to assess the safety and efficacy of DMR (NCT04419779).

Another example is the duodenal-jejunal bypass liner (DJBL), previously known as the EndoBarrier. It is a sleeve extending from the duodenal bulb to the proximal jejunum that blocks nutrient uptake and enzymatic secretion in the duodenum. Prior to removal from the market, studies showed reductions in weight and improvements in metabolic parameters; however, these were overshadowed by the number and severity of adverse events and ultimately did not meet the ASGE/ASMBS thresholds

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for the treatment of obesity.[39,40] Nonetheless, a single-center Chinese study demonstrated notable weight loss and improvements in hepatic steatosis, liver enzymes, insulin resistance, and metabolic parameters in obese patients with metabolic dysfunction-associated steatotic liver disease (MASLD) after a 3-month implantation of the DJBL.[41] The device has undergone modifications, particularly to its anchoring system, resulting in FDA and institutional review board approval for the new STEP-1 pivotal trial (NCT04101669).[41,42]

Partial jejunal diversion (PJD) is an endoscopic technique that induces weight loss by creating an anastomosis between the proximal and distal small bowel using self-assembling magnets (Incisionless Magnetic Anastomosis System). A pilot study involving 10 patients with obesity and type 2 diabetes successfully created anastomosis, resulting in significant weight loss (14.6% TWBL and 40.2% EWL), reduced HbA1c levels, and a 12% reduction in alanine aminotransferase (ALT) levels at 1 year.[43]

Promising research into the hormonal activity of gastric mucosa suggests that gastric mucosal devitalization using argon plasma coagulation (APC) may achieve metabolic benefits comparable to those of bariatric surgery, as demonstrated in ex vivo human and animal studies.[44–46] The technique resulted in weight loss, an improvement in visceral adiposity, and metabolic profile.

The concept of small intestinal modulation remains an active area of research, with novel devices and techniques being developed to optimize outcomes and minimize complications. These malabsorptive endoscopic bariatric therapies enhance weight loss and insulin secretion by limiting nutrient absorption and enhancing peptide secretion from enteroendocrine cells, potentially offering a less invasive alternative to traditional bariatric surgery.

Novel Gastric Motility Interventions

Bariatric endoscopic antral myotomy (BEAM) is a novel procedure that involves the endoscopic dissection of the gastric antrum, aiming to delay gastric emptying and induce weight loss without gastroparesis. The first successful human proof-of-concept study demonstrated the potential to reduce procedure time, enhance reproducibility, minimize perioperative discomfort, and increase long-term effectiveness.[47]

Extraluminal/Pancreatic Endoscopic Metabolic Therapy

Rejuva (Fractyl) is a gene therapy platform utilizing adeno-associated virus technology to stimulate the pancreas to produce therapeutic proteins. A feasibility and safety study in a Yucatan pig model demonstrated the activity of the adeno-associated virus in up to 80% of the targeted cells, with no procedure-related pancreatitis events but some pancreatic inflammation at 3 weeks.[48] Although still in its early stages, extraluminal/pancreatic gene therapy holds promise as a research avenue for the treatment and management of diabetes.

METABOLIC BENEFITS BEYOND WEIGHT LOSS

Endobariatric therapies have demonstrated significant potential in improving metabolic health beyond their effects on weight loss alone. Several studies have shown improvements in obesity-related comorbidities, such as type 2 diabetes, MASLD, and cardiovascular risk factors following endobariatric interventions.

ESG has been associated with significant improvements in hypertension, type 2 diabetes, and hyperlipidemia.[26] In patients with MASLD, ESG has been shown to improve liver function and decrease fibrosis scores.[49] Two randomized controlled trials (RCTs)

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are currently underway to evaluate the effectiveness of ESG in treating nonalcoholic steatohepatitis (NASH) compared with laparoscopic sleeve gastrectomy (TESLA-NASH, NCT04060368) or a placebo procedure (NASH-APOLLO, NCT03426111).[50]

Meanwhile, POSE has been shown to improve glucose metabolism and gut hormone signaling, with a prospective study revealing significant improvements in the glucose/insulin ratio, decreased postprandial ghrelin levels, and an increase in postprandial peptide YY.[51]

In a comprehensive meta-analysis involving 5668 patients, IGBs used for up to 6 months resulted in statistically significant improvements in several metabolic parameters, including fasting blood glucose, systolic blood pressure, HbA1c levels, and transaminases.[18] As newer renditions of IGB gain FDA approval, assessing the metabolic changes accompanying weight loss will be crucial.

As research continues to unravel the complex mechanisms underlying the metabolic effects of endobariatric therapies, the concept of "metabolic endoscopy" is gaining prominence, focusing on the use of endoscopic interventions to target specific metabolic pathways and improve overall health outcomes.

ADJUNCTIVE AND COMBINATION THERAPIES

Endobariatric therapies have shown promising results as standalone treatments for obesity and related comorbidities. However, their efficacy and durability may be further enhanced through combination approaches with pharmacotherapy and bariatric surgery. These adjunctive strategies aim to optimize weight loss outcomes, prevent weight regain, and manage complications associated with obesity and its treatment.

Pharmacotherapy

The use of pharmacotherapy in conjunction with endobariatric therapies has gained attention as a potential means to augment weight loss and maintain long-term results. A recent study demonstrated that the addition of GLP-1 receptor agonists (liraglutide/semaglutide) to ESG resulted in significantly greater weight loss (23.7% TBWL) compared with ESG alone (17.3% TBWL) at 1 year.[52] This finding highlights the potential synergistic effects of combining endoscopic interventions with targeted pharmacologic agents.

In the context of IGBs, a retrospective study found that combining IGBs with currently approved pharmacotherapies did not increase weight loss at 6 months compared with IGBs and lifestyle changes alone. However, the combination approach led to greater weight loss and reduced weight regain after balloon removal at 12 months.[53] This suggests that pharmacotherapy may play a role in sustaining the benefits of endobariatric therapies beyond the initial treatment period.

Pharmacotherapy has also shown promise in managing weight recidivism following endoscopic interventions. In a study evaluating patients undergoing transoral outlet reduction (TORe) for weight regain after Roux-en-Y gastric bypass, the immediate initiation of pharmacotherapy in combination with TORe facilitated greater weight loss compared to TORe alone.[54] This finding underscores the potential of pharmacotherapy to enhance the durability of endobariatric procedures in the setting of weight recidivism.

Bariatric Surgery

The combination of endobariatric therapies with bariatric surgery has been explored to optimize outcomes and manage complications. IGBs have garnered interest as a transitional treatment preceding bariatric surgery. The hypothesis is that IGBs can

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facilitate presurgical weight loss, thereby streamlining surgical procedures and mitigating perioperative complications.[55] A meta-analysis assessing IGBs as bridging therapy before bariatric surgery found them to be effective, with an adequate procedural safety profile.[56] This suggests that IGBs may have a role in preparing patients for bariatric surgery and potentially improving surgical outcomes.

In the setting of failed bariatric surgery, endobariatric therapies have shown promise in addressing weight recidivism. A recent multicenter analysis demonstrated that revisional ESG is a safe and effective approach for managing weight regain in patients with dilated laparoscopic sleeve gastrectomy, leading to sustained weight loss.[57] Similarly, following Roux-en-Y gastric bypass, endoscopic procedures such as transoral outlet reduction (TORe) and argon plasma coagulation have been employed to reduce the gastrojejunal anastomosis. These techniques have been shown to be safe, reproducible, and effective in managing weight recidivism.[58,59]

Combination Therapy: Future Directions

Although the available evidence supports the potential of adjunctive and combination therapies in enhancing the outcomes of endobariatric procedures, further research is needed to establish their long-term efficacy and safety. Robust randomized controlled trials are essential to assess the effectiveness of combining endobariatric therapies with pharmacotherapy and bariatric surgery. These studies will help inform the development of evidence-based guidelines for the optimal utilization of adjunctive strategies in the management of obesity and related comorbidities.

ENDOBARIATRICS IN CLINICAL PRACTICE

Multidisciplinary Care and Patient Support

Adherence to outpatient follow-up has been recognized as the most crucial independent predictor of success, regardless of the specific type of endobariatric treatment. Currently, there is no established gold-standard for psychosocial evaluation and monitoring of patients undergoing endoscopic bariatric therapies (EBTs), potentially because of the lack of insurance coverage. In contrast, patients undergoing metabolic and bariatric surgery (MBS) are required to undergo a presurgical psychosocial evaluation to identify mental health disorders, eating disorders, and substance use problems that could impact their outcomes and to ensure patients fully understand their role in recovery.[60]

Multidisciplinary care models (MDCs) may provide a solution to this urgent problem, fostering coordinated care through integrated consultations within a single clinic space. These models have demonstrated improved clinical outcomes and patient satisfaction in other fields, such as oncology.[61,62] Patients who engage with a multidisciplinary team before and during EBT implementation are likely to benefit the most, as EBTs are often adjunctive to lifestyle changes. Consistent engagement with a support team, including dieticians, exercise specialists, and mental health professionals, can enhance adherence and improve weight loss and overall health outcomes.

Optimal management of patients undergoing endobariatric therapies requires collaboration among endoscopists, bariatric surgeons, nutritionists, psychologists, and other health care professionals. Pre-procedure evaluation should include a thorough assessment of patients' medical, nutritional, and psychological status to identify potential contraindications and optimize treatment outcomes. The POWER (Practice Guide on Obesity and Weight Management, Education and Resources) guidelines provide a framework for a comprehensive, multidisciplinary approach to obesity management.[63] This includes an assessment of obesity-related comorbidities, such as

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type 2 diabetes, hypertension, dyslipidemia, and obstructive sleep apnea, as well as an evaluation of patients' readiness for change and potential barriers to treatment adherence. Post-procedure follow-up is equally crucial for long-term success. Patients should receive ongoing nutritional guidance, behavioral support, and monitoring for weight loss progress and potential complications.

Training and Credentialing

As endobariatrics continues to evolve as a subspecialty, standardized training and credentialing processes will be critical to ensure high-quality care and patient safety. The development of accredited fellowship programs in endobariatrics, either as part of advanced endoscopy training or as standalone programs, will be essential to provide comprehensive education and hands-on experience with various techniques and devices.

Professional societies, including gastroenterology and surgical specialty societies, should establish credentialing guidelines for endobariatric procedures, specifying the quality metrics required to determine competency with these procedures.

The inclusion of endobariatric training in gastroenterology and surgical fellowship programs can help to build a workforce of skilled providers and promote the integration of these therapies into standard obesity management pathways.[64] As demonstrated in the bariatric surgery sphere, interprofessional education and collaboration among different specialties involved in obesity care, such as endocrinology, nutrition, and psychology, can foster a team-based approach to patient management and improve care coordination.[65]

As endobariatric procedures become more widely adopted, it is crucial to ensure that health care providers maintain competency and proficiency in these techniques. The establishment of standardized credentialing and privileging criteria for endobariatric procedures can help to ensure the quality and safety of patient care.[66] Furthermore, ongoing education and training opportunities, such as continuing medical education (CME) courses and peer-to-peer learning, can help providers stay up to date with the latest advances in the field.

Billing and Coding Frameworks

The development of specific billing codes for endobariatric procedures is essential to ensure appropriate reimbursement and facilitate access to these therapies. Currently, the lack of standardized billing codes and limited insurance coverage can create significant barriers for patients and providers.

As more long-term data on the safety, efficacy, and cost-effectiveness of endobariatric therapies become available, collaboration with payers to establish comprehensive coverage policies and reimbursement rates will be crucial in integrating these procedures into the standard of care for obesity management.

Accessibility and Insurance Coverage

Equitable access to endobariatric therapies is a global health care challenge that requires multifaceted approaches, including training health care providers in underserved regions, raising awareness of endobariatric treatments, and facilitating knowledge sharing and expertise dissemination through collaborative initiatives among international organizations, governments, and health care institutions.

Accessibility to these therapies is influenced by factors such as health care infrastructure, regulatory approvals, insurance coverage, cost, awareness, and socioeconomic conditions. Policy changes, expanded insurance coverage, heightened awareness, and ongoing research to enhance affordability and effectiveness are

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necessary to improve access. Continuing education for health care providers is also crucial to keep them updated on emerging technologies, best practices, and research findings, ensuring the delivery of advanced and effective treatments to patients.

Advances in cost-effective technologies and strategies are key to enhancing the affordability of endobariatric therapies, with potential cost reduction achieved through research into more economical materials and procedural techniques. Furthermore, efficient administrative processes and resource optimization can further control expenses, expanding access to these therapies.

Despite the potential benefits of endobariatric therapies, access to these procedures remains limited, largely because of the lack of insurance coverage and reimbursement. In the United States, most endobariatric procedures are not covered by insurance plans, leading to significant out-of-pocket costs for patients.[67] This lack of coverage creates a significant barrier to treatment, particularly for individuals from lower socioeconomic backgrounds who are disproportionately affected by obesity.

Efforts to expand insurance coverage for endobariatric therapies should focus on demonstrating their cost-effectiveness and long-term health benefits compared with conventional treatments. Economic evaluations, such as cost-utility analyses, can provide valuable evidence to support the inclusion of endobariatric therapies in insurance policies and health care systems. A recent cost-effectiveness analysis in the United Kingdom found that ESG was cost-effective compared to lifestyle modification for the treatment of obesity, with an incremental cost-effectiveness ratio (ICER) of £2453 (approximately $3100) per quality-adjusted life year (QALY) gained.[68]

In addition to economic evaluations, the development of standardized guidelines and quality metrics for endobariatric procedures can help to ensure their safety, efficacy, and appropriateness for patient care. The American Society for Gastrointestinal Endoscopy (ASGE) has published a position statement on the role of endoscopy in the bariatric patient, outlining key considerations for patient selection, procedure preparation, and post-procedure management.[66] The establishment of national registries and databases for endobariatric procedures could also provide valuable insights into real-world outcomes and inform clinical decision making.

Ultimately, expanding access to endobariatric therapies will require a coordinated effort among health care providers, policymakers, and patient advocates. Strategies to improve access may include increasing public awareness of endobariatric options, advocating for policy changes to expand insurance coverage, and developing innovative payment models that incentivize the adoption of cost-effective treatments.

SUMMARY

Endobariatric therapies have emerged as a transformative solution in the battle against the global obesity epidemic, bridging the gap between lifestyle interventions and bariatric surgery. These minimally invasive procedures offer a spectrum of options, including restrictive techniques, aspiration therapy, and emerging metabolic interventions, providing safer, more accessible, and less invasive alternatives to conventional treatments. As the field of endobariatrics continues to evolve, advancements in techniques, devices, and combination approaches with pharmacotherapy and bariatric surgery hold immense potential to enhance weight loss outcomes and improve overall metabolic health, offering hope to millions of individuals struggling with obesity and weight-related comorbidities.

The successful integration of endobariatric therapies into clinical practice necessitates a multidisciplinary, patient-centered approach, guided by the principles of ethics,

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inclusivity, and global accessibility. Collaboration among health care professionals, including endoscopists, bariatric surgeons, nutritionists, and psychologists, is crucial to ensure high-quality care and patient safety. Standardized training and credentialing processes, along with the development of specific billing codes and comprehensive insurance coverage policies, will be essential to guarantee equitable access to these innovative treatments. Ongoing research to demonstrate the long-term efficacy, safety, and cost-effectiveness of endobariatric therapies will be vital to support their widespread adoption and inclusion in standard obesity management pathways, ultimately making these life-changing treatments accessible to those who need them most, regardless of geographic or socioeconomic factors.

By embracing the principles of patient-centered care, scientific innovation, ethical responsibility, and global accessibility, and advancing the field through research and collaboration, the treatment of obesity and its related metabolic conditions can be revolutionized. The transformative potential of endobariatric therapies extends beyond individual health outcomes, promising to alleviate the burden on health care systems worldwide and improve the quality of life for countless individuals battling obesity.

CLINICS CARE POINTS

- Endobariatric modalities such as endoscopic sleeve gastroplasty (ESG) and intragastric balloons (IGBs) offer minimally invasive alternatives to traditional bariatric surgery, providing significant weight loss and improvements in metabolic health, including benefits for type 2 diabetes and non-alcoholic fatty liver disease.
- Multidisciplinary care involving endoscopists, nutritionists, and psychologists, along with regular post-procedure follow-up, is crucial for optimal long-term outcomes in endobariatric procedures.
- Clinicians should stay informed about emerging endobariatric techniques and devices through continuing education and standardized training programs.
- Limited insurance coverage remains a significant barrier to accessing endobariatric therapies, highlighting the need for advocacy and robust long-term outcome data.
- Development of specific billing codes and comprehensive coverage policies is essential to facilitate wider adoption of endobariatric procedures in clinical practice.

DISCLOSURES

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