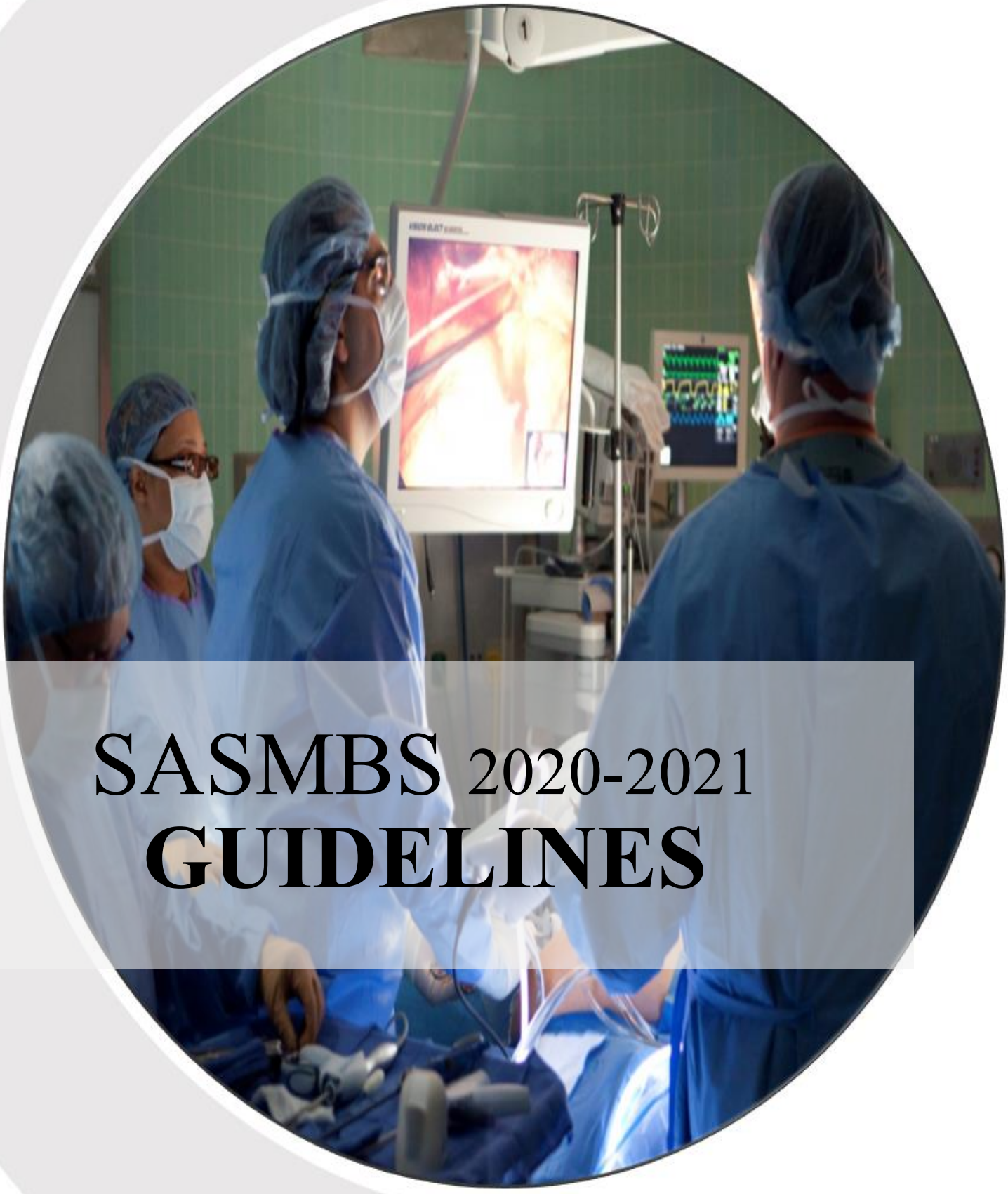
SASMBS
SAUDI ARABIAN SOCIETY FOR METABOLIC AND BARIATRIC SURGERY
الجمعيه السعوديه لطب وجراحه السمنه



SASMBS 2020-2021
GUIDELINES

SASMBS 2020-2021 Guidelines

Message from SASMBS

Patient safety along with achieving the best outcome is the most important goal of medical services. It can be achieved by establishing clinical pathways and guidelines proven in several studies and evidence-based medicine to minimize preventable complications, morbidity and mortality. Does it also improve the outcome?" Bariatric and Metabolic Surgery is one of the surgical subspecialties growing rapidly in the last few years. "As in any surgery, it has its own risks and preventable complications." In Saudi Arabia, both obesity and diabetes are considered epidemics, which resulted in a high demand for such specialty and the need for a well-trained specialized surgeon to practice under high standard protocol and guidelines from bariatric surgery centres and national registry. As part of SASMBS mission, to ensure safe standard patient care in this field, a group of expert physicians and surgeons has been selected to review and update the guidelines to be implemented in all centres. Thanks to all the members of "The Review Committee" for their help, support and efforts.

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Vice President of GOSS

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2021

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Introduction

obesity is an epidemic chronic disease that has significant detrimental impact on health, life expectancy markedly and increased morbidity and mortality. The burden of obesity and its related health co-morbidities pose a tremendous economic burden globally In Kingdome of Saudi Arabia; obesity is an endemic chronic disease and bariatric and metabolic procedures have been steadily increasing in the Kingdom over the past decades as these surgeries have been proven to be effective and safe, with more than 25000 procedures in 2019. These guidelines are intended to unify the care provided for patients suffering from obesity in the Saudi Arabia through safe and standardized evidence based clinical practice. **The guidelines will be updated every two years**

PURPOSE

SASMBS Guidelines are intended to assure provision of the highest levels of safety and quality of bariatric services in licensed health facilities of Saudi Arabia. Thus, they are a cornerstone for establishing Bariatric Surgery Unit policy and procedures. Providing those Bariatric services are authorized by the Ministry of Health (MOH) highest health authorization in KSA.

1. Standardize the approach for patients with obesity who are potential candidates for surgical management of their disease through standardization of the pre-operative, perioperative and post-operative care of those patients to achieve patient's safety.

2. Support and encourage the implementation and utilization of national or international registries for bariatric and metabolic procedures performed in KSA for the following reasons:

2.1. To establish baseline demographic characteristics for patients operated on in KSA that will be an essential benchmark in comparison to international standards.

2.2. To promote transparency of outcome of the bariatric and metabolic procedures in KSA to the public and internationally.

2.3. To observe the long-term outcome of the obesity disease and its treatment.

2.4. To support collaborative scientific research between the countries of the MENAC.

3. Encourage the use of appropriate terminology:

3.1. Replacing "bariatric surgery" to "metabolic surgery" when the goal of the treatment is to render diabetes type II and obesity associated-diseases and or co-morbidities in remission.

3.2. Adopt the use of terminology of obesity/adiposity-based chronic disease (ABCD) to reduce and eliminate stigma of obesity.

4. Discuss areas of gaps or deficiencies and identify the stakeholders to suggest effective strategies to close the gaps, such as implementation of national prevention programs for childhood obesity, inclusion of obesity into medical education and supporting postgraduate training.

5. Reduce the economic burden of obesity and its associated comorbidities on the short and long-term impaction in KSA and therefore globally.

OBJECTIVES

To bring the services of bariatric and metabolic surgeries in KSA to the highest attainable level.

APPLICABILITY

Saudi Arabia licensed healthcare professionals and health facilities providing bariatric services under the jurisdiction of the MOH.

DEFINITIONS

Bariatric surgery is a gastrointestinal surgery performed to help patients with obesity to achieve significant, sustained weight loss.

Metabolic surgery is defined as the use of gastrointestinal operations with the intent to treat T2D and obesity.

BMI classification (kg/m2):

- *Normal range* *18.50– 24.99*
- *Pre-obesity* *25.00– 29.99*
- *Obesity class I* *30.00– 34.99*
- *Obesity class II* *35.00– 39.99*
- *Obesity class III* *≥ 40.00*
- *Severe Obesity* *≥ 50.00*

Comorbid factors

These are defined as medical conditions triggered or generated by excess body weight or morbid obesity.

The most common comorbid factors are as follows:

- Diabetes type 2
- Hypertension
- Sleep apnoea
- Gastrointestinal reflux disease
- Joint degenerative disorders
- Psychosocial disturbances
- Infertility
- Non-alcoholic fatty liver disease (NAFLD)and (NASH)non-Alcoholic steatohepatitis (*NASH)*
- Pick-Wickian syndrome
- Pseudotumor cerebri
- Asthma
- Urinary incontinence.

Chapter 1: HEALTH FACILITY REQUIREMENTS

1. *Metabolic surgery surgeries shall be performed only in general hospital settings or specialized surgical hospitals with a fully equipped intensive care unit (ICU)*

2. *Hospitals shall maintain a minimum of 50 bariatric surgeries per annum, including:*

primary, revision and emergency bariatric surgeries.

3. *Hospitals performing bariatric surgery must present an annual report about the service(registry).*

4. *The health care facility providing bariatric service should have supporting service specifications to provide suitable medical, surgical, instruments.*

5. *The size of instruments selected should meet the type of patients treated, including but not limited to blood pressure cuffs, staplers, retractors, long instruments, sequential compression, and device sleeves. Single-use instruments should not be re-sterilized.*

6. *Bariatric surgeries shall be restricted according to weight limits of the existing equipment.*

7. *Lifting and transfer equipment should be suitable to facilitate and accommodate patients with obesity. Weight capacities of equipment and furniture used shall be documented based on the manufacturer's specifications, and this information shall be readily available to relevant staff.*

8. *Essential equipment and furniture may include but not limited to: Bariatric wheelchairs, Patients' chairs, seats, and beds, Gowns, weighing scales, and stretchers, Floor-mounted or floor-supported toilets and shower rooms.*

9. *Health facilities providing bariatric surgeries for patients with complex obesity must have clear Implemented P&P and Clinical Pathway.*

Chapter 2: HEALTHCARE PROFESSIONAL REQUIREMENTS

Facility providing bariatric surgery services must have at least one full time actively practicing, licensed bariatric and metabolic surgeon:

1. The Institution's credential body is responsible to privilege surgeons to perform bariatric surgeries according to Saudi commission for health specialties accreditation policy.

2. All bariatric services shall be led by a consultant.

3. For each admitted patient, the health facility should designate a Most Responsible Physician (MRP), who should be ultimately responsible for the admission, management, and discharge of bariatric patients.

4. Part time and visiting bariatric surgeons shall not be permitted to perform bariatric surgeries in a health facility without a full-time licensed physician with bariatric privileges.

• Any health facility providing bariatric services should have a dedicated multidisciplinary healthcare professional team with experience in bariatric patient management. The team should consist of licensed anaesthesiologist, nurses, psychologists, gastroenterologist, clinical dieticians, Interventional radiologist, cardiologist, pulmonologist, endocrinologist, obesity medicine physician or internist, physiotherapist and bariatric surgery coordinator.

5. All healthcare professionals shall be trained to use the equipment and be capable of moving patients with obesity safely.

Physicians performing bariatric surgeries shall be responsible for demonstrating defined experience and exposure to the discipline's unique cognitive, technical, and administrative challenges.

Physicians performing bariatric surgeries shall be suitably trained and assessed as competent to perform them and competent to recognize and treat related complications.

Physicians performing bariatric surgeries shall have a clear and documented process to record patient details in their health records as follows:

5.1. Patient selection criteria

5.2. Preoperative assessment and counselling

5.3. Early/acute postoperative care (immediate care at 1–4 days) and upon discharge.

Postoperative management follow-ups are conducted at 3, 6 and 12 months and then as per the patient's condition. This includes, but not limited to:

- *Obtain patient complains and interpret it.*
- *Asses patient's complaint and advice accordingly.*
- *Weight loss assessment*
- *Physical activity advice and support*
- *Management of dietary and nutritional deficiencies*
- *Assessment of lipid and glucose levels and medication review to be considered based on patient needs& type of the procedure*
- *Management of postoperative complications*

Chapter 3: Guidelines

SURGICAL INDICATIONS

The general indications used for laparoscopic bariatric procedures are as follows and should be clearly documented in each patient's chart.

We **recommend that age-based eligibility has no supportive evidence** as current longitudinal studies evaluating efficacy and safety endpoints do not apply specific age limits for the timing of surgery. Clinical judgement is key in patient's selection.

1. Patients must have a BMI of 40 kg/m2 or 35 kg/m2 if one or more comorbid factors are documented.

2. Metabolic Surgery should be considered as an option to treat T2D in patients with class I obesity (BMI 30.0–34.9 kg/m2) and inadequately controlled hyperglycaemia despite optimal medical treatment by either oral or injectable medications (including insulin).

3. Patients should undergo a standard bariatric-social and nutritional detailed history.

4. Patients must have undergone a basic Medical evaluation.

5. Have a long/repeated history of failed nonsurgical weight loss regimens.

6. Understand the risks, benefits, and impact of the procedure and willing to comply with pre- and postoperative instructions

.

Selection Criteria

Surgical candidate:

The trigger point used by most bariatric surgeons is the **BMI value** at which the risks of potential complications from the bariatric procedure itself equal the risks generated by the excess weight. This trigger point is a BMI of 40 kg/m2, but this value is lowered if a comorbid condition is identified.

Consequently, a bariatric surgical procedure is indicated for the following conditions:

- Morbid obesity with BMI ≥35 kg/m2.
- History of repeated conservative treatment failures.
- No history of significant psychiatric disorders.

Exclusion Criteria

1. Active Alcohol or drug abuse.
2. Lack of comprehension to risk, benefits and expected outcomes and lack of Commitment to nutritional supplementation and long-term follow-up Required with surgery.
3. Concurrent Pregnancy, or who expect to be pregnant within 12–18 months
4. Of surgery should be deferred.
5. Medically correctable cause of obesity.
6. Palliative cancer.
7. Contraindications to general anaesthesia
8. Correctable coagulopathy
9. Uncontrolled psychiatric illnesses
10. Lack of comprehensive risk–benefit ratio
11. Severe heart failure or unstable coronary artery disease

12. End-stage lung disease
13. Active cancer diagnosis or treatment?? 14. Cirrhosis with portal hypertension
15. Severely impaired intellectual capacity.
16. Crohn's disease may be a relative contraindication to RYGB and BPD. and SAGBP.

Bariatric Surgeon

A surgeon privileged according to the Saudi commission for health specialties accreditation criteria. Annual submission of bariatric procedures performed by the surgeon to SASMBS registry.

Granting Bariatric Surgery Privileges

The medical director or the chairman of Bariatric surgery Unit of the health facility is responsible for the following:

1. Granting privileges to full-time, part-time, and/or visiting physicians to perform bariatric surgeries in the health facility. The medical director should ensure that the physician has the appropriate certification, training, and experience to perform the bespoke procedures.
2. Ensuring that the healthcare professionals involved in providing bariatric services are adequately qualified and well trained to provide such services.
3. Establishing bariatric surgery unit policy and procedure.
4. This privileging document shall be kept in the physician's personal file and provided for MOH/SASMBS review whenever required.
5. The credentialing and privileging committee or the medical director may suspend/revoke privileges at any time, as per the health facility policy, and the action shall be validated with appropriate documented reasons.

Bariatric Surgery Procedures

The following are endorsed by SASMBS

1. Laparoscopic Adjustable Gastric Banding (LABG)
2. Laparoscopic Sleeve Gastrostomy
3. Roux- En -Y Gastric Bypass
4. Mini Gastric Bypass/One anastomosis Gastric bypass.
5. Biliopancreatic Diversion (BPD) – Duodenal Switch
6. Single anastomosis duedonoileal bypass (SADI)
7. Biliopancreatic Diversion (BPD) Scopinaro

Other Procedures will be subjected to the evaluation and review by SASMBS according to the available data.

Revisional Bariatric Procedures

1. Removal of Gastric Banding
2. Conversion of Gastric Banding to R-Y Gastric Bypass, Sleeve, BPD, BPB-DS
3. Conversion of Vertical Banded Gastroplasty (VBG) to R-Y Bypass/sleeve/MGBP/BPD
4. Revision of gastric bypass or sleeve Gastrectomy to other procedures

Pre-evaluation

First visit in the bariatric clinic

Full detailed informative history and physical examination including special additional attention to:

Weight history including chronology of weight gain, family Hx of obesity, and predisposing factors to obesity.

1. Previous attempts of weight loss and exercise history

2.Type and timing of nutrient intake

3.psychological evaluation of patients with emphasis on eating disorders such as binge eating or night eating and referral to psychiatry when needed

4. History of weight promoting medication and history of weight loss promoting medication

5. Obesity complications, e.g., DM, HTN, sleeps apnoea, joint pains, cardiac disease

6. Testing for secondary causes of obesity when indicated. (please see endocrine section for further details) (1)

7. History of previous surgeries especially abdominal laparoscopies.

Full explanation of the different surgical modalities

1. Special attention to the side effects, expected morbidities, mortality, and benefits of each surgical procedures.

2. Band surgery needs the cooperation of the patients, low sweet intake, and total diet modification.

3. Biliopancreatic diversion surgery patients are more liable to late metabolic syndromes and deficiencies, higher morbidities; therefore, long-term follow-up and replacement are mandatory. .

4. RYGB is the standard bariatric procedure that still has some vitamins and elements deficiency, and some metabolic complications; therefore, commitment to supplement is essential. internal hernia is a concern in RYGB which mandate closing mesenteric and Paterson defects.

5. Sleeve gastrostomy has its own rare complications like other bariatric procedures including leaks, bleeding and thromboembolic events, Weight regain, Reflux are more seen with Sleeve.

6. OAGB, a single anastomosis gastric bypass, a powerful weight loss procedure. a biliary limb length always of important, hypoproteinaemia always a concern in OAGB.

Life Long medical supplements and regular monitoring in all Bariatric Surgeries is the key to success.

Required investigations for all bariatric cases

- Complete Blood Count
- Iron panel
- Sickling test
- Serum electrolytes
- Fasting blood sugar, HbA1c
- Renal function test
- Liver Function Test (LFT)
- Calcium profile
- Vitamin D level, ± (PTH)
- Coagulation Profile
- Serum lipid profile
- TSH
- H. pylori and eradication treatmen
- Abdominal US if symptomatic
- B12
- Folic acid
- Vitamin B1 may be considered ir patient undergoing RYGB , BPD or OAGB (1)

We advised to EGD routinely to all patients.

bariatric surgeons should routinely provide preoperative endoscopy as a standard evaluation tool when indicated.

All patients undergoing revision should have evaluation of the anatomy using EGD and Upper GI Images, or both.

Second preoperative visit in the bariatric clinic:

1. All questions raised by the patient are answered by the professional team

2. All results of investigations are revised, and any hormonal abnormality with expected endocrine disease is referred to family medicine doctor or endocrinologist.

3. Any vitamin deficiencies found should be treated.

4. Patients with anaemia and blood diseases are referred to a haematologist.

5. H. pylori -positive patients receive the triple treatment preoperatively.

6. Appropriate treatment for each case and consultation from other subspecialties if needed are done in preparation for the surgery.

Preoperative Management

1. Endocrine:

1.1. Type 2 Diabetes:

Pre-procedure glycaemic control must be optimized using a diabetes comprehensive care plan, including healthy dietary patterns, medical nutrition therapy, physical activity, and, as needed, pharmacotherapy. (1)

More liberal pre-procedure A1C targets of 7% to 8% (53 to 64 mmol/mol), are recommended in patients with advanced microvascular or macrovascular complications, extensive comorbid conditions, or long-standing diabetes in which the general goal has been difficult to attain despite intensive efforts (1)

Lipid profile TSH.

Treat thyroid dysfunction when found prior to surgery.

1.2. Females should be evaluated for presence of polycystic ovary syndrome (PCOS) prior to surgery. Bariatric surgery can improve both incidence of (PCOS) and associated infertility as well as reduc the risk of endometrial hyperplasia (1)

Females Surgical candidates should minimize the risk of pregnancy for 12-18 months pre and postoperatively.

Women who become pregnant after bariatric procedures should be counselled and monitored for appropriate weight gain, nutritional supplementation, and fatal health (1). Therefore, All women should be counselled on contraceptive Methods.

1.3. Screen for secondary causes of obesity when indicated (Cushing's with 1 mg dexamethasone suppression test, or 24 h urinary cortisol, or 11pm salivary cortisol) (1)

1.4. Intra-/perioperative intravenous (IV) insulin is recommended for glycaemic control in immediate postoperative patients with type 2 diabetes

(T2D) (1)

1.5. The use of all insulin secretagogues (sulfonylureas and meglitinides), sodium-glucose cotransporter-2 inhibitors, and thiazolidinediones should

be discontinued and insulin doses adjusted (due to low calorie intake) to minimize the risk for hypoglycaemia (1)

1.6. Metformin and GLP-1 agonists may be continued in the post-operative period. But we recommend avoiding any drugs that may cause GI upset in the immediate period after surgery and recommend the use of insulin instead.

1.7. All patients on insulin should be co-managed with an endocrinologist to avoid hyper and hypoglycaemia.

1.8. Basal insulin (glargine, degludec, detemir) should be decreased by 30-35% prior to surgery and in the period after surgery due to the low caloric intake in the first few months after surgery. Further adjustments of insulin should be titrated on individual basis with the patient's endocrinologist.

1.9. Patients who require rapid acting insulin (lispro or aspart) after surgery should follow a sliding scale regimen in the immediate period after surgery due to the low caloric intake during this period to avoid hypoglycaemia. Close follow up with an endocrinologist is recommended.

1.10. Patient with T1DM can undergo bariatric surgery safely. We strongly recommend co-management with endocrinology for these patients.

1.11. We recommend that patients with T1DM on an insulin pump, stay on the pump during the perioperative period with decrease of basal rates based o the endocrinologist recommendation.

1.12. Close monitoring of patient's anti diabetic medication is recommended. Decreasing doses and stopping medication to avoid hypoglycaemia is important.

1.13. In patients on thyroid hormone replacement or supplementation, thyroid stimulating hormone (TSH) levels must be monitored after bariatric procedures and medication dosing adjusted, as dose reductions are more likely with weight loss. (1)

1.14. Individuals should be educated to avoid simple sugars after RYGB, BPD, and OAGB to avoid symptoms of dumping after the procedure.

1.15. Documented hypoglycaemia after a bariatric procedure should be evaluated by an endocrinologist.

1.15.1. Cardiology:

•ECG for patients aged above 40 years.

•Cardiology referral depending on patient's clinical assessment.

•All patients with known CVD need a cardiology referral.

1.15.2. Pulmonary:

Tobacco use must be avoided at all times by all patients. In particular, patients who smoke cigarettes should stop as soon as possible, preferably 1 year, but at the very least, 6 weeks before bariatric procedures

• CXR for patient aged above 40 years depending on clinical finding.

1.15.3. Gastroenterology:

• All patients should be evaluated for the presence of gastrointestinal symptoms and treated if present before surgery.

1.16. Patients with de novo gastroesophageal reflux and severe symptoms after sleeve gastrectomy should be treated with proton-pump inhibitor therapy, and those resistant to medical therapy considered for conversion to Rouxen-Y gastric bypass (1)

we recommend Gastroscopy at baseline and at 5 years after surgery or if patient complains of symptoms of GERD.

1.16.1. Psychiatric patients should be referred if:

•With history of psychiatric diseases

•On psychiatric medications

•With recent admission to psychiatric ward

1.16.2. Nutrition:

1.16.3.

•Nutritional education for healthy weight reduction before and after Surgery.

•We advise to Start VLCD (very low-calorie diet) preoperatively.

•Including 5 daily servings of fruits and vegetables

1.17. All nutritional deficiencies should be addressed and treated prior to metabolic surgery.

1.18. weight loss before surgery should not be considered a pre-requisite. Although it can reduce the difficulties of the surgical procedure, advantages for long-term weight loss are not validated. Additionally, the number and duration of dietary attempts before surgery do not significantly affect long-term weight loss outcomes after bariatric surgery. Therefore, the practice of mandating participation in a preoperative weight loss regimen or requiring mandatory weight loss prior to bariatric

surgery is not supported by current literature and may serve as an obstacle to medically necessary and potentially life-saving treatment. (2-6)

1.19. A low-sugar clear liquid meal program can usually be initiated within 24 hours after any of the surgical bariatric procedures, but this diet and meal progression should be discussed with the surgeon and guided by the registered dietician (RD). (1)

1.20. protein intake should be individualized for each patient taking into account age, gender, and weight. With a minimal protein intake of 60 grams/day and up to 1.5g/kg of ideal body weight. A need for higher protein intake up to 2.1g/kg needs to be assessed on individual basis. (1)

2 adult multivitamins plus minerals (each containing iron, folic acid, ng/ml and thiamine)	• Vitamin D (3000 IU) with target 25-OH vitamin D >30 • Iron 18-60 mg daily
Calcium (1200-1500 mg elemental calcium). Calcium carbonate can be given safely for patients undergoing sleeve gastrectomy. For patients undergoing RYGB or OAGB Calcium citrate is recommended) and in women who are in childbearing age	• Vitamin B1 • Folic acid (if not part of the multivitamin preparation) recommended)

1.21. All patients undergoing metabolic surgery have to be on nutritional supplementation after surgery indefinitely. These should be in a chewable form and

should include a minimum of:

1.22. Micronutrient deficiency assessment should be done at 3 months, 6 months 12 months after bariatric procedures and then annually thereafter. Deficiencies should be treated when detected

- Vitamin B12
- Vitamin D
- PTH

- Iron
- Ferritin
- folate
- Calcium

Annual screening for copper, zinc, and vitamin B1 deficiency should be considered in patients undergoing RYGB, BPD, or OAGB. (1)

Surgical and Pre-surgical Care

On Admission

1. Informed consent.

2. NPO after midnight.

3. UFH/Enoxaparin 40 mg OD subcutaneously prior to surgery (12 h before the surgery OR upon induction of anaesthesia on the day of admission) if BMI< 40 kg/m2, the recommended fixed dose of enoxaparin 40mg once daily may be administered.

4. For BMI More than 40 kg/m2, the dose should be increased to 40mg twice daily.

5. Prophylactic antibiotics on induction of anaesthesia.

6. Proton pump inhibitor.

7. Elastic stockings or Pneumatic Decompression Device (full mobilization) 8. Pregnancy test for women in reproductive age.

Postoperative Orders

1. The patient is kept NPO with adequate IVF, usually 150– 200 ml /h.
2. Antibiotics and omeprazole are continued until discharge.
3. UFH 5000 TID/Enoxaparin 40 mg BID after 12 hours of surgery.
4. Prophylaxes against DVT by mechanical devices are continued.

5. On postoperative day 1, the Gastrografin study is advised to perform, and then patients can start oral fluid intake.

Discharge Medication Order

1. One week appointment for stitches removal
2. Fluid diet for 1 month (According to Dietician's advice)
3. VTE Prophylaxis according to patient's BMI:
4. Enoxaparin 40 mg SC OD benefit from an extended treatment of 10 to15 days after discharge.
5. Calcium
6. Vitamin D3
7. Ferrous sulphate daily
8. Multivitamin tab daily
9. PPI for 4-8 weeks
10. Thiamine 100 mg PO daily

All patients undergoing metabolic surgery have to be on nutritional supplementation after surgery indefinitely. These should be in a chewable form and should include a minimum of:

*2 adult multivitamins plus minerals (each containing iron, folic acid, and thiamine) o Calcium (1200-1500 mg elemental calcium). Calcium carbonate can be given safely for patients undergoing sleeve gastrectomy. For patients undergoing RYGB or OAGB

Calcium citrate is recommended) o Vitamin D (3000 IU) with target 25-OH vitamin D >30 ng/ml o Iron 18-60 mg daily o Vitamin B12

*Folic acid (if not part of the multivitamin preparation) and in women who are in childbearing age.

Postoperative visit in OPD

We recommend that patients who underwent surgical treatment for obesity should be followed up for 2 years post-operatively according to the international guidelines and that nutritional evaluation should be adjusted to their clinical condition and the surgical procedure received as per the AACE/TOS/ASMBS Guidelines 2013 guidelines or other international guidelines.

For female patients we advise to delay pregnancy 1 year at least post bariatric surgery due to possible maternal and fetal hazardous complications.

First visit (postoperative days 7–8)

1. full demographic history and physical examination
2. Wound examination
3. DVT and PE are common complications at this time
4. Second Visit (postoperative day 30).
5. Three-month interval visits for the next 2 years: Special attention should be made on expected complications, such as ulcers, bowel obstructions, and Gall bladder stones.
6. Requested the usual follow-up laboratory tests and adjustment of refill medications according to the results.

Repeated every three (3) month visit:

1. CBC
2. Electrolytes
3. Glucose, lipid profile
4. Iron, ferritin
5. Vitamin B12
6. Liver function tests
7. Vitamin D
8. Optional (PTH, thiamine, RBC)

Life-long postoperative management:

1. Monitoring for disease relapse
2. Failure to lose or regain of weight should be promptly evaluated
3. Maladaptive eating habits and nutritional deficiencies.

Non-surgical treatment for obesity:

1. Class I obesity with a BMI of 30–35 kg/m2, safety and efficacy are two important factors when considering a treatment method in clinical practice.

2. Microenvironmental targeted therapy is the cornerstone for treatment of obesity. This includes a focus on the type of food eaten with an emphasis on healthy eating with 5 servings of fruits and vegetables daily and to avoid processed foods. The timing of eating is important and we recommend eating earlier in the day rather than later at night. Physical activity is of paramount importance for health and weight maintenance. Additionally, individuals with obesity should be evaluated for hours of sleep, circadian rhythm disruption and stress reduction.

3. An important but often missed culprit is the evaluation of weight promoting medication that patients are on. We recommend stopping weight promoting medications or substituting them with weight loss promoting medication or weight neutral medication.

4. Pharmacotherapy for obesity is recommended for individuals with BMI ≥ 27 kg/m2 with comorbidities such as HTN T2DM, OSA, etc. . . . Or for individuals with class I obesity and above BMI ≥ 30 kg/m2 with or without comorbidities.

5. The selection of pharmacotherapy for obesity should be individualized and patients should be managed and closely monitored by an obesity medicine physician.

6. Antiobesity pharmacotherapy is not recommended for short term use but rather for chronic use. This should be discussed with patients prior to initiating antiobesity pharmacotherapy.

7. We recommend using pharmacotherapy for treatment of weight regain after metabolic surgery or suboptimal weight loss after metabolic surgery defined as weight loss of < 50% of excess body weight (EBW) if no anatomical causes of failure can be identified. This recommendation is based on several observational studies. (710)

8. Liraglutide (GLP -1) agonist can be used for the management of Class I and Class II obesity and is also effective in downgrading morbidly obese patients preoperatively and weight regain in post-bariatric surgeries.

9. Endoscopic intraluminal procedures include: Intragastric balloon currently three intragastric balloon devices are FDA approved:

Orbera intragastric balloon system, Reshape dual intragastric balloon system and Obalon.

Based on current evidence, balloon therapy is FDA approved as an endoscopic, temporary (maximum 6 months) tool for the management of obesity.

Other Procedures (Endoscopic Gastric Plications) will be subjected to the evaluation and review by SASMBS according to the available data.

We recommend against the use of other commercial remedies for obesity that are not FDA approved such as fat burner supplement, Botox injections, or other commercially available treatments that have not been studied in randomized controlled studies for obesity.

Disclosure Documents

1. Patients planning to undergo a bariatric surgical procedure should be educated about the procedure and its risks and benefits. They should understand that the procedure is non- physiological and demands lifelong behavioural life style modifications.

2. The procedure, as described above, helps to select the right (and motivated) patients to undergo bariatric surgery. It is essential for the surgeon to accurately disclose the surgical risks of the proposed procedure.

3. Patient should understand & accept that the surgical intervention has its own mortality, morbidity rate, etc. as well as the expected long-term side effects, and impact of the postoperative outcomes.

4. A detailed comparison to other available bariatric procedures should also be provided. In turn, the patient should reiterate his or her commitment to a lifelong follow-up and monitoring.

5. Lastly, extensive written documentation or disclosure documents should be given to the patient. All patients should understand and accept lifelong follow-up according to the protocol and strict compliance with dietary supplement and vitamins.

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