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| **PCP’s Summary Guide to Perioperative Care of the Bariatric Surgery Patient** |
| **What’s new since the 2008?** |
| * Sleeve gastrectomy no longer considered experimental. It falls between the band and the gastric bypass in terms of wgt loss, co-morbidity resolution and complications
* Gastric band approved by FDA for pts with BMI 30-35 with T2D or other obesity related comorbidities.
* Obesity is now considered a disease state
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| **Who is a candidate for bariatric surgery?** |
| Patients with clinically severe obesity:* BMI >40
* BMI >35 and 1 or more obesity-related comorbidity (T2D, HTN, HLD, OSA, NASH, GERD, NAFLD, Pseudo tumor cerebri, asthma, venous stasis, OA)
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| **Approved Surgical Procedures** |
| * Laparoscopic Adjustable Gastric Band
* Laparoscopic Roux-en-Y Gastric bypass
* Laproscopic Sleeve Gastrectomy
* Duodenal Switch (exercise caution due to increased nutritional risk)
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| **Pre-operative Care** |
| * Pre-op H & P
* Documentation of diet/weight loss history and continue weight loss efforts
* H. Pylori screen and treatment. Lower rate of marginal ulcers when treated pre-op
* Gallbladder evaluation with abdominal ultrasound, upper endoscopy if indicated
* EKG, CXR, echo if cardiac disease or pulmonary hypertension suspected
* Labs: lipid panel, CBC, chemistry , PT/INR
* Nutrient screening: iron studies, B12, folic acid, Vit D, calcium
* Urine analysis
* Sleep apnea evaluation if suspected (up to 94% of patients have OSA and 38% undiagnosed)
* Clinical nutrition evaluation/education
* Endocrine screen (A1C, TSH)
* Optimize glycemic control: A1C 6.5-7.0% or less, fasting BG <110mg/dL, 2 hr post prandial <140.
* Psychosocial behavior evaluation. Lifetime hx substance abuse higher in bariatric population. Bulimia nervosa is a contraindication to bariatric surgery.
* Smoking cessation
* Pregnancy Counseling and use of non-oral contraceptive therapy is recommended for malabsorptive procedures
* Discontinue OCPs/estrogen therapy 1 month prior to surgery
* Cancer screening risk/age appropriate
* IVC filter may present > risk given filter-related complications
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| **Early Post-operative Care** |
| * Staged meal progression. Start clear liquids in <24 hrs
* DVT prophylaxis
* Monitor blood glucose
* Discourage smoking due to increased risk for poor wound healing, anastomotic ulcer
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| **Early Complications** |
| * Unstable patients should warrant strong suspicion for PE or anastomotic leak
* Anastomotic leak: HR >120, hypoxia, fever, tachypnea
* DVT risk is 0.42%. 73% occurred after d/c and within 30 days
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| **Recommended Supplements** |
| * Multivitamin + minerals BID (should contain iron, folic acid and thiamine, copper)
* Calcium 1200-1500mg/day
* Vit D 3000-6000iu/day (Goal serum Vit D: 30ng/mL)
* B12 as needed for normal range, 1000mcg/day or more, consider intranasally 500mcg/week, then IM/SC 1000mcg-3000mcg/mo
* For Duodenal Switch patients: consider ADEK supplementation, screen for zinc deficiency
* Iron deficiency tmt:150-200mg elemental iron daily. Consider adding vitamin C to increase absorption
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| **Post-operative Recommendations** |
| **Gallstone Prophylaxis -** Ursodio/Actigal BID decreases risk of gallstone formation **Fluids and Nutrition*** Protein intake minimum: 60g/day up to 1.5g/kg ideal body wgt
* Fluids >1.5L per day. Avoid fluids during meals. Wait 30 min after meals.

**Diabetes and Hypoglycemia*** D/c all sulfonylureas
* Continue metformin until normalized glycemic targets
* Postprandial hypoglycemia: consider nutritional manipulation, NIPHS, dumping

**Hyperlipidemia -** Do not stop lipid lowering medications until clearly indicated. Lipid eval Q 6-12 months**Hypertension*** The effect of wgt loss on blood pressure is variable, incomplete, and transient at times
* Evaluate need for medications repeatedly, and stop agents only if clearly indicated.

**Osteoporosis -** Osteoporosis: use IV biphosphenates, Risk of anastomotic ulcer, inadequate absorption with oral**Medication*** Use crushed or liquid rapid release medications. Avoid extended release medication
* Gout prophylaxis (allopurinol) if appropriate.
* Avoid NSAIDS, can increase risk of anastomotic ulcer/perforations.
* Alternative pain medication should be determined before bariatric surgery.
* Evaluate need for support groups

**Labs/Imaging*** Bone Density (DXA) at 2 years
* Labs: SMA, CBC, iron, B12, folic acid, ferritin,25-vitamin D, iPTH (ADEK with DS patients)

**Alcohol after Bariatric Surgery*** High risk GBP pts should avoid alcohol due to impaired alcohol metabolism
* Accelerated alcohol absorption
* Longer time to eliminate

**Hernias -** Repair of asymptomatic abdominal wall hernias can be deferred until weight is stable 12-18 months **Pregnancy** * Pts who become pregnant <18M: nutritional surveillance, labs each trimester: iron, folate, B12, calcium, fat soluble vitamins
* Pregnant gastric band patients should have adjustments to allow for appropriate weight gain

**Kidney Stones -** Management of calcium oxalate stones: avoidance of dehydration, follow low oxalate meal plan**Follow-up Visits -** 1 month, 3 months, 6 months and 12 months, annually**Plastic Surgery -** Body contouring surgery may be considered after wgt has stabilized 12-18 months after surgery |
| **Deficiencies** |
| **Thiamine (B1) Deficiency -** Protracted vomiting/rapid wgt loss, parenteral nutrition, excessive alcohol use, neuropathy, encephalopathy, or heart failure.**Selenium deficiency -** Unexplained anemia/fatigue/persistent diarrhea/cardiomyopathy/metabolic bone disease**Zinc deficiency -** Hair loss, pica, distorted or impaired taste, hypogonadism, erectile dysfunction **Copper deficiency -** Unexplained anemia, neutropenia, myeloneuropathy, impaired wound healing |
| **Weight regain or failure to lose weight**  |
| Consider decreased adherence, medications, maladaptive eating, psych complications. Consider UGI or endoscopy to assess pouch size, anastomotic dilation, formation of g-g fistula in GBP pts, inadequate band restriction |

Mechanick, J. I., Youdim, A., Jones, D. B., Timothy Garvey, W., Hurley, D. L., McMahon, M., & Brethauer, S. (2013). AACE/TOS/ASMBS guidelines: Clinical practice guidelines for the perioperative nutritional, metabolic, and nonsurgical support of the bariatric surgery patient—2013 update: Cosponsored by American Association of Clinical Endocrinologists, The Obesity Society, and American Society for Metabolic & Bariatric Surgery. *Surgery for Obesity and Related Diseases*. 21, S1-S27. DOI: 10.1002/oby.20461