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Perinatal Bariatric Considerations

Objectives

- Discuss the prevalence of obesity in the US, affecting our patients, both women and children
- Identify challenges and potential complications obesity in pregnancy presents
- Discuss considerations for the pregnant women post Bariatric surgery

Obesity in the US

| Year | Percentage of Obese People
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>2007</td>
<td>12%</td>
</tr>
<tr>
<td>2010</td>
<td>14%</td>
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</table>
Latest Obesity Prevalence in USA

Prevalence* of Self-Reported Obesity Among U.S. Adults
BRFSS, 2012

*Prevalence reflects WHOD Global Adult Survey 2011, and these estimates should not be compared to those before 2011.

19-25 Healthy
25-30 Overweight
30-40 Obese
> 40 Morbidly Obese

OBESITY: The percentage of the population older than 15 with a body-mass index greater than 30.

BMI Chart

19-25 Healthy
25-30 Overweight
30-40 Obese
> 40 Morbidly Obese

Source: Joseph A. Pianta Jr., MD
Multiple influencing factors
- Balance of calories in vs calories burned
- Genetics
- Physiological
Physiologic Influences: Hormones that Control Appetite (It is not all about will power)

Multiple Influencing Factors Lead to Obesity

Cultural Influences: Food Choices & Portion Distortion
In–activity

Multiple Influencing Factors Lead to Obesity

Psychological Influences Depression
Risk Factors

- Low metabolic rate
- Polycystic Ovarian Disease
- Cushing Syndrome
- Mother smoked during pregnancy
- Lower socioeconomic status
- Low education level
- Overweight parents
- Sedentary Lifestyle
- Pregnancy
- Mother had diabetes during pregnancy
- Born for gestational age
- Breastfed less than 3 months
- Recent marriage
- Smoking cessation
- Overweight during childhood
- Low level of activity
- Menopause

Effects of Adipose Tissue on the Body: Obesity is a Multisystem Disease

Co-Morbidities Related to Obesity
Recognizing Obesity as a Disease Helps Us Overcome Obesity Bias

- Studies show society has low respect for morbidly obese.
- Society is not tolerant of obese people—especially women.
- 80% of obese individuals report being treated disrespectfully by the medical community.

Monitor Your Own Attitude

- References to weight should be informative, not judgmental.
- Be aware of your own feelings when caring for these patients.

Equipment Considerations

- Right size cuff = accurate B/P
- Multiple sizes of adult gowns=
- Chose the one that fits
- Knee-high Compression Devices
- Med-Large-Bariatric=
- Measure calf for accurate size
Bariatric Equipment
Know the weight capacity of the equipment
Know your patient's weight

One Size does NOT fit everyone

Patient Room Chairs

1000 lbs

500 lbs

750 lbs

300 lbs

Weight Capacity
Know your pt's wt before using this equipment

Shower Bench: 300 lbs

Wall Mounted Toilet 300 lbs

Stop stool 300 lbs

Floor Mounted Toilet: Unlimited

Unlimited
Regular Hospital Bed = 500 lbs
Usually not wide enough at 400 lbs

To widen bed
- Turn toggle switch,
- Pull out 4 shelves,
- Buckle and zip the extender mattresses to sides.

Bed needs to be in narrowest position to fit through the doors

Bari Max II
1000 lbs

Weight Capacity of other Equipment:
St. Luke’s commodes 250-700 lb
St. Luke’s Walkers 300 lbs, 650 lbs, 1000 lbs
St. Luke’s Wheelchairs 250 lbs, 500 lbs, 700 lbs

These items should be labeled with weight capacities
**Hover Mats & Lifts Saves Backs Use Lift Teams**

At HoverTech International, we make transferring your Patients a BREEZE.

New team offers nurses a lift in handling hospital patients

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**Inform Other Departments of Special Needs**

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**Recommended Weight Gain**

<table>
<thead>
<tr>
<th>Prepregnancy BMI</th>
<th>BMI gain in kg</th>
<th>Total Weight Gain (kg)</th>
<th>Recommended Weight Gain*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>10.3</td>
<td>18.5-22.5</td>
<td>11-15</td>
</tr>
<tr>
<td>Normal weight</td>
<td>18.5/24.9</td>
<td>18.5-24.9</td>
<td>18.5-24.9</td>
</tr>
<tr>
<td>Overweight</td>
<td>25.0/29.9</td>
<td>25.0-29.9</td>
<td>25.0-29.9</td>
</tr>
<tr>
<td>Others (excluding class)</td>
<td>30.0</td>
<td>30.0-39.9</td>
<td>30.0-39.9</td>
</tr>
</tbody>
</table>

* To calculate BMI go to www.cdc.gov/bmi

** Calculations assume a 15-20 kg (1.1-4.4 lb) weight gain in the first trimester (Based on Wyke & et al., 2006; Winters et al., 2006; Comstock et al., 2009)**

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Risks and Complications

- Infertility is high
- Malformations high: Cardiac, omphalocele
- Most common risk factor for unexplained stillbirth is pre-pregnancy obesity (2-4fold increase risk)
- Women with a BMI of 30 or more are at increased risk for early (less than 12 weeks) and recurrent (3 times or more) spontaneous abortion
- Weight retention postpartum
- Childhood obesity

Maternal Antepartum Risks

- Gestational Diabetes
- Gestational Hypertension
- Preeclampsia
- More UTIs
- Labor dystocia

Prolonged Pregnancy and Longer Labor

- Women who are obese are more likely to go past the normal 40 weeks of gestation
- Once in labor tend to have slower and less productive labor progression
- Women with BMI over 35 should deliver in a hospital with neonatal and anesthesiology services
- In the absence of other complications, obesity is not an indication for induction or c-section
Intrapartum Risks

- More failed inductions
- Operative vaginal delivery
- C-section for Failure to Progress
- VBAC success reduced to 60%
- Higher risk for emergency c-section
- Intraoperative complications
- Educate women with c-sections about the risks of future pregnancies related to VBAC
- Death

Difficult airway – Intubation

- Ramped position may facilitate intubation
- Sellick maneuver – cricoid pressure may facilitate intubation
- Rapid sequence induction, with a rapid-acting muscle relaxant
- Fiber optic laryngoscope may be needed
- Have difficult airway carts available
- LMA or combi tube may be used if unable to intubate in an emergent situation
- Trach sizes

Intrapartum Issues

- External monitoring
- Obstructive sleep apnea
- Nursing acuity
- Moving patient
- Equipment
- Breastfeeding complications
Considerations During Labor

- Anticipate active management of the third stage of labor:
  - Oxytocin administration
  - Controlled cord traction
  - Fundal palpation

Potential Complications

- Women with a BMI of 30 or more are at greater risk (10x more likely) of postpartum infection such as endometritis (3.4% of obese moms)
- Teach your patient to monitor their incision for signs and symptoms of infection or dehiscence
- DVT, PE
- Hemorrhage

Low Pfannenstiel Incision

**PROS**
- Less fat to transect
- Less OR time
- Less wound breakdown
- Less post-op pain
- Less post-op resp issues

**CONS**
- Intertriginous Area (where skin rubs together)
- Less upper abd access
- More difficult delivery
- Pannus retraction
Thromboembolism Risk

- Pregnant women who are obese have a VTE incidence of 2.5% whereas a non-obese pregnant women has an incidence of .6%
- Women who are obese also face an increased risk of recurrent VTE

Obesity: Chronic State of Low-Grade Inflammation → Risk of Blood Clots

- Macrophages infiltrate the adipocyte causes secretion of inflammatory factors
- Tumor Necrosis Factor α (TNFα)
- C-Reactive Protein (CRP)
- Haptoglobin
- Interleukin-6 (IL-6) increases with obesity (predictor of T2DM & MI)
  - Contributes to insulin resistance
  - Activates hypothalamic-pituitary-adrenal axis
  - Increases lypolysis
  - Promotes release of endothelial adhesion molecules
  - Effects fibrinogen and platelet

Obese Patient is at Increased Risk of DVT/ Pulmonary Embolism

- DVT Symptoms:
  - Red, tender calf
  - Edema

- PE Symptoms:
  - Shortness of Breath
  - Chest Pain/ or No Pain
  - ↑ Pulse
  - ↑ Respirations
  - Anxiety
  - ↓ O2 sats

- Prophylaxis:
  - Anticoagulants
  - Ankle Flexions q 2 hr
  - SCDs while in bed
  - Early ambulation
Obesity is linked to birth defects including:
- Spina bifida
- Cardiac malformation
- Diaphragmatic hernia
- Multiple anomalies

Express the importance for women with a BMI of 30 or more to take additional folic acid to prevent neural tube disorders. 400mcg is recommended.

The risk of delivering an infant weighing over 4,000g, or above the 90th percentile (macrosomia) is 1.7–2 times higher for women who are obese or morbidly obese.

More than a third of infants weighing over 4,500g have shoulder dystocia, whereas normal weight pregnant women have a 0.2–3% occurrence of this complication.

Women who are obese have lower prolactin levels making breastfeeding difficult.

Early initiation is important.

Refer to a lactation consultant if needed.
Discuss weight loss strategies
Discuss prevention interventions if planning another baby
The IDEAL time for intervention is preconception

Medications
Lifestyle Changes
Physical Activity
Nutrition
Surgery

People living with the serious disease of obesity may choose to have bariatric surgery to improve their health and quality of life.
Co-morbidity Reduction after Bariatric Surgery

- Depression: 55% resolved
- Obstructive sleep apnea: 74% - 98% resolved
- Asthma: 82% improved or resolved
- Cardiovascular disease: 82% risk reduction
- Hypertension: 52% - 92% resolved
- GERD: 72% - 98% resolved
- Stress urinary incontinence: 44% - 88% resolved
- Degenerative joint disease: 41% - 76% resolved
- Gout: 72% resolved
- Migraines: 57% resolved
- Pseudotumor cerebri: 96% resolved
- Dyslipidemia, hypercholesterolemia: 63% resolved
- Non-alcoholic fatty liver disease: 90% improved steatosis, 37% resolution of inflammation, 20% resolution of fibrosis
- Metabolic syndrome: 80% resolved
- Type II diabetes mellitus: 83% resolved
- Polycystic ovarian syndrome: 79% resolution of hirsutism, 100% resolution of menstrual dysfunction
- Venous stasis disease: 95% resolved

Quality of life improved in 95% of patients
Mortality: 30% - 40% reduction in obesity-related mortality

Co-morbidity Reduction after Bariatric Surgery:

- Reduced Incidence of:
  - Gestational Diabetes
  - Gestational Hypertension
  - Pre-eclampsia
  - Macrosomia

Perinatal Outcomes After Weight Loss Surgery

- Reduced Incidence of:
  - Gestational Diabetes
  - Gestational Hypertension
  - Pre-eclampsia
  - Macrosomia

Bariatric Surgery Criteria

- BMI > 40
- BMI > 35 with one or more co-morbidities
- Attempted & failure of non-surgical weight loss program
- No active addictions
Surgical Treatment of Obesity

Restrictive Procedures
- Adjustable Gastric Band
- Sleeve Gastrectomy

Restrictive Malabsorptive Procedure
- Roux–n–Y Gastric Bypass
- Biliopancreatic Diversion with Duodenal Switch

Potential Nutrient Deficiency

Vitamins
- A, D, E & K
- B12,
- Thiamine
- Folic Acid

Electrolytes
- K+

Protein

Minerals
- Calcium, Iron

Most deficiencies can be avoided with good compliance to:
- Dietary guidelines
- Vitamin and mineral supplements
- Yearly blood levels should be evaluated
- Adjustments to supplements recommended

Recommendations for Pregnancy Post Bariatric Surgery

- Delay pregnancy 12–36 months following bariatric surgery
- Some studies suggest to delay pregnancy based on weight loss instead of a timeframe (i.e. if the patient is able to make it to their goal weight and maintain a stable nutritional balance they may be able to conceive earlier)
Recommendations for Post Bariatric Surgery

- Avoid oral contraception 2 months post surgery due to risk for DVT
- Breastfeeding—infants should be monitored closely due to potential for nutritional deficits in post bariatric patients

Recommendations for Lap Band

- For patients with a lap band, it is suggested they make an appointment early with their surgeon to discuss removing fluid from their band to allow for normal weight gain and favorable maternal outcomes
- Some surgeons do so automatically when a patient is pregnant, others do it based on the need of the patient

Potential Complications Post Bariatric Surgery in Pregnancy

- Evidence does not suggest a strong relationship between c-section rates and a history of bariatric surgery
- If the patient is still obese at the time of delivery, it is the obesity that puts them at risk for a c-section, not the history of bariatric surgery
Potential Complications continued...

- Complications related to bariatric surgery have been reported in subsequent pregnancies.
- Surgical complications should be considered in women presenting with nausea, vomiting, epigastric discomfort, abdominal pain, and uterine cramping.
- Low threshold for surgical intervention if abdominal pain develops in labor.

Post Pregnancy considerations in Post Bariatric Surgery Patients

- Post partum depression is always something to consider.
- Patients post bariatric surgery may experience some mood swings due to the extreme lifestyle changes.
- Always keep post partum depression in mind with this patient population.

Conclusion

- Sensitivity is critically important with obese patients.
- Obesity and pregnancy create various challenges.
- Patient’s history is important in addition to thorough assessment and evaluation.
- If your patient is post bariatric surgery, keep in mind the potential complications and considerations.