Management of Pregnancy Involving Obesity & Bariatric Surgery

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PGY2
Overview

- Obesity Review
- Obesity and Pregnancy
- Treatment of Obesity
- Managing Pregnancy Following Bariatric Surgery
<table>
<thead>
<tr>
<th>BMI Category</th>
<th>BMI (kg/m²)</th>
<th>5’7” Female (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>&lt;18.5</td>
<td>&lt;118</td>
</tr>
<tr>
<td>Normal Weight</td>
<td>18.5-24.9</td>
<td>119-159</td>
</tr>
<tr>
<td>Overweight</td>
<td>25.0-29.9</td>
<td>160-191</td>
</tr>
<tr>
<td>Obese</td>
<td>&gt;30.0</td>
<td>&gt;192</td>
</tr>
<tr>
<td>-Class I Obesity</td>
<td>30-34.9</td>
<td>192-223</td>
</tr>
<tr>
<td>-Class II Obesity</td>
<td>35-39.9</td>
<td>224-255</td>
</tr>
<tr>
<td>-Class III Obesity</td>
<td>&gt;40</td>
<td>&gt;256</td>
</tr>
</tbody>
</table>
>1/3 of adults (35.7%) are obese
  • Non-Hispanic Blacks (49.5%)
  • Mexican Americans (40.4%)
  • All Hispanics (39.1%)
  • Non-Hispanic Whites (34.3%)

In 2008, obese individuals spent $1,429 more per year on health care

NOT an epidemic

Endemic – condition that is habitually present
Comorbidities

- Type II Diabetes
- Hyperlipidemia
- Hypertension
- Obstructive Sleep Apnea
- Heart Disease
- Stroke
- Asthma
- Musculoskeletal Problems
- Cancer
- Depression
- Metabolic Syndrome
- Gallbladder Disease
- Liver Disease
- DVT
Pregnancy Complications: $^{2,4}$

- Gestational DM
- Hypertension
- Preeclampsia
- C/S Delivery
- Postpartum Weight Retention
- Prematurity
- SAB & Stillbirth
- Congenital Anomalies
- Macrosomia with Possible Birth Injury
- Infections (pelvic, urinary, wound)
- Postpartum Depression
- Decreased Breastfeeding
- Childhood Obesity
Managing Obesity

- Weight reduction programs
  - Diet
  - Exercise
  - Behavior Modification
  - Pharmacotherapy

- Referral for bariatric surgery
  - BMI >40
  - BMI >35 with Significant Comorbidities
Preconception Assessment and Counseling
  • Discuss risks
  • Encourage weight reduction

During pregnancy
  • Height, weight, BMI
  • Discuss goal weight gain
  • Offer nutrition counseling
  • Encourage exercise
## Institute of Medicine Recommendations: \(^5\)

<table>
<thead>
<tr>
<th>Prepregnancy BMI</th>
<th>BMI (kg/m(^2))</th>
<th>Total Weight Gain (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>&lt;18.5</td>
<td>28-40</td>
</tr>
<tr>
<td>Normal Weight</td>
<td>18.5-24.9</td>
<td>25-35</td>
</tr>
<tr>
<td>Overweight</td>
<td>25.0-29.9</td>
<td>15-25</td>
</tr>
<tr>
<td>Obese (all classes)</td>
<td>&gt;30</td>
<td>11-20</td>
</tr>
</tbody>
</table>

Additional guidelines for twin pregnancies.
Cesarean Section
  • Additional Resources:
    • Tables, Staff, Blood Products
  • Antibiotics
  • Subcutaneous Closure
  • Thromboprophylaxis
    • SCD
    • Unfractionated or LMW Heparin

Postpartum
  • Weight-Reduction Specialist
Managing Obesity

- Weight Reduction Programs
  - Diet
  - Exercise
  - Behavior Modification
  - Pharmacotherapy

- Referral for Bariatric Surgery
  - BMI >40
  - BMI >35 with Significant Comorbidities
Incidence increased 800% from 1998-2005
Average age 38.97 years
Females 72.6%
50,000 Women Annually from 2003-2005
Mean Excess Weight Loss = 61.2%
Review of Bariatric Surgeries

- **Adjustable Gastric Banding**
  - Restrictive
  - Adjustable band 2 cm Below Gastroesophageal Junction
**Roux-en-Y bypass**

2,8

- Restrictive and Malabsorptive
- 20-30 mL Pouch Formed
- Gastroenterotomy
  - Stomach to Distal Jejunum
- Enteroenterostomy
  - Anastomosis of 2 Parts of Intestine
Obesity Decreases Fertility
• Hyperinsulinemia\(^2\)
• Oligo-ovulation and Anovulation\(^9\)

After Surgery:\(^9\)
• Improves PCOS, Anovulation, and Menses
• May Improve Fertility\(^6\)
• Adolescents: Pregnancy rates after surgery doubles general adolescent population* 
• Consider non-oral modes of birth control*

**Level B**
Non-pregnancy considerations

- Contraception failure
- Nutritional deficiencies
  - Most frequent: iron, Thiamin (Vit B1), folates (Vit B9), Vit D, Calcium, Protein, Vit B12
- Improve or resolve:
  - Diabetes
  - Hyperlipidemia
  - Hypertension
  - OSA
- Wait to conceive: 12-24 months
- Therapeutic medication monitoring
- Up to 80% remain obese
Pregnancy Outcomes

- Decreased rates of: $^6,^9$
  - Hypertension
  - Gestational Diabetes
  - Preeclampsia
  - Maternal Weight Gain
  - Premature Delivery (?)
  - Low Birth Weight (?)

- Increases rate of:
  - Neural Tube Defects (noncompliance)
  - PPROM
Three priorities: preventing iron, folic acid, and vit D/calcium deficiencies

Presenting Labs:
- Protein (prealbumin)
- Iron
- Vit B12
- Folate
- Vit D
- Calcium

Trimester labs
- CBC, iron, ferratin, calcium, Vit D

* Level C
Pregnancy Recommendations

- Prenatal Vitamin
- Additional Multivitamin
  - Vit A < 5,000 IU
- Postpartum surveillance
- Consult nutritionist*
- Consult GI*
  - Band loosening
- Alternative GDM screening*
  - Dumping syndrome
- No NSAIDS postpartum
- Therapeutic Drug levels**

**Level B

*Level C
Pregnancy Recommendations

- Nausea, Vomiting & Abdominal pain… harder to monitor!
  - Band loosening
  - 20 reports:\(^6\)
    - 14 bowel obstructions (internal hernias), 1 ulcer, 3 band events, 1 staple line stricture
    - 13-37wga (average 26 wga)
    - 5 neonates died
    - 3 maternal deaths

- High index for suspicion\(^9\*)

\(*Level\ C\)
Deficiencies
Supplement 1200 mg Ca and 800 IU Vit D
Levels
• >20 ng/mL (vs)
• >32 ng/mL
Intake of 600 IU/day
PNV 400 IU/day
Vit D safe up to 1,000 - 2,000 IU/day
Excess: neonatal tetany, IUGR, IUFD


