Obesity in Pregnancy

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Outline

- “We have a weight issue”
- What is Obesity in Pregnancy?
- What is the Incidence of obesity in pregnancy?
- What are the Maternal effects of obesity?
  - First, Second, and Third trimesters
  - Labor and Delivery
  - Postpartum
- What are the Fetal effects of obesity?
  - First, Second, and Third trimesters
  - Labor and Delivery
  - Childhood
- Management strategies for obese pregnant patients
- Bottom Line
Mothers may have more than one risk factor.
SIVB2/3

Nulliparous C-section Rate - Obesity

BMI ≥ 30 OR last maternal weight ≥200 lbs

- Lean: 21.5% (N = 5290)
- Obese: 38.5% (N = 854)
- Total: 23.7% (N = 6226)
SIVB2/3

Nulliparous Induction Rate - Obesity

- Lean: 46.7% (N = 5290)
- Obese: 58.8% (N = 854)
- Total: 48.7% (N = 6226)
What is Obesity in Pregnancy?

- “Maternal Obesity” is defined as a pre-gravid Body Mass Index (BMI) of 30 Kg/M² or greater.
  (thus, a woman who is 5’4’’ and 175 lbs is obese)

- **BMI** = weight (Kg)/ height (meters) ^2.

- NIH and WHO definitions
  - Normal weight = 18.5-24.9 BMI
  - Overweight = 25-29.9 BMI
  - Obese (Class 1) = 30-34.9 BMI
  - Obese (Class 2) = 35-39.9 BMI
  - Extremely Obese (Class 3) = > 40 BMI


Incidence of Obesity in Pregnancy

Percent of Obese Reproductive age Women United States

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Women</td>
<td>30%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>31%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>39%</td>
</tr>
<tr>
<td>Black</td>
<td>48%</td>
</tr>
</tbody>
</table>

Center of Disease Control Report. 2008
Incidence of Obesity in Pregnancy

- **Prevalence of Maternal Obesity** ranges from 10%-36% depending on region.

- There has been a **70% increase in Maternal Obesity** from 1994-2003.

- **28% of people in Eastern NC** have a BMI greater than 30.

- **38% of African Americans in Eastern NC** have a BMI greater than 30.


May 2008 Center for Health Services Research and Development
East Carolina University
Disparities in Health Risk Factors and Health Status in Eastern North Carolina: Data from the Behavioral Risk Factor Surveillance Survey.
Maternal Effects of Obesity

First and Second Trimester

- **Obesity is associated with worsening of obstructive airway issues** (sleep apnea)
- **Early onset Gestational Diabetes**
- **Worsening of Musculoskeletal issues** secondary to rapid changes in weight and center of gravity
- **Worsening of subcutaneous, vaginal, and urinary tract infections** form increased secretions.
Maternal Effects of Obesity

Third Trimester

- **Increased risk of Preeclampsia (almost 3 fold higher risk)**

- **Increased risk of Gestational diabetes (4-8x higher risk)**


Maternal Effects of Obesity

Labor and Delivery

- Increased risk of shoulder dystocia.
- Increased risk of cesarean section rate. (2 fold higher)
- Difficulty in estimating fetal size (even with ultrasound)


Maternal Effects of Obesity

Labor and Delivery

- Increased operative complication (Blood loss, operative time, difficulty to execute emergent procedures, alternative surgical approaches)

- Difficulty with regional anesthesia and difficult airway

- Increased infectious morbidity

- Prolong Induction

Maternal Effects of Obesity

Postpartum

- Increased thromboembolic events
- Increased wound separation and infection
- Increased endometritis


Fetal Effects of Obesity

First and Second Trimester

- Obesity is an independent risk factor for spontaneous abortion *(almost 2x greater risk)*

- Obesity increases the risk of several congenital anomalies: neural tube defect, cardiac anomalies, cleft lip and palate, and anal atresia *(almost 2x greater risk)*

- Difficulty in prenatal diagnosis of anomalies secondary to decrease effectiveness of ultrasound

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Metcally M, et al. Does high BMI increase the risk of miscarriage after spontaneous and assisted conception. Fert. Steril. 2008; 90(3) p714

Fetal Effects of Obesity

Third Trimester / Labor and delivery

- Unexplained stillbirth (2 fold higher risk)
- Increased incidence of Preterm birth (usually for maternal or fetal indications – not spontaneous preterm labor)
- Difficulty in performing antenatal surveillance.
- Increased rate of fetal Macrosomia.
- Increased risk of Birth Trauma.

Management Strategies

Labor and Delivery/Post-partum

- Make Delivery as planned event as possible
- Involve Anesthesia early in admission
- Assemble special equipment needed early in admission (lifts, Bari-beds, hover mats, Ect ...)
- Establish regional anesthesia early in labor
- Review risks and limitations to emergent delivery with patient and team.
- Be aware and ready for dystocia
- Make Operating Room Staff aware as early as possible if surgical delivery is needed.
Management Strategies

Labor and Delivery/Post-partum

- Treat the patient with respect!
- After delivery, be keen to her risk of infection (discuss this concern with patient)
- Demonstrate proper wound care for patient
- Underscore the importance of meticulous hygiene and set realistic expectations for patient
- Ambulate!, Ambulate!, Ambulate!
- Early post-partum Appointment
- Make contraceptive plan prior to Discharge
Management Strategies

Labor and Delivery/Post-partum

- Encourage **breast feeding**
- Set-up Post-partum appointment with **Nutrition**
- Set-up appointment with internist for regular screening for DM/HTN AND establish **weight loss plan**.
Bottom Line

- Make Pregnancy as planned as possible

- Assemble and Lead a multidisciplinary team (Aesthesia, Cardiology, Pulmonology, Nursing, OR-team, Nutritionist, Ultrasonographers, ect...)

- Share Your Concerns and Limitations with patient and family.

- Treat the patient with respect.
www.pqcnc.org

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