WHAT IS THE IMPACT OF OBESITY ON ADOLESCENT PREGNANCY?

TANA HALL, MD
JENNIFER PHIPPS, MD
CHARLES HODSON, PHD

DISCLOSURES

• No financial disclosures

INTRODUCTION
BACKGROUND

• Adolescent pregnancy continues to be a concern in our communities
  • Birth rates declining
  • 273,000 teen births in 2013


BACKGROUND

• Adolescent pregnancy impacts the fetus
  • Prematurity
  • Low birth weight
  • Fetal death
  • Neonatal death


BACKGROUND

• Adolescent pregnancy also impacts the mother
  • Preeclampsia
  • Retained postpartum weight
  • Poor social outcomes

BACKGROUND

- Obesity
  - Adolescent obesity has quadrupled in the past 30 years.²
  - More than one third of adolescents are overweight or obese.¹
  - Obesity in pregnancy impacts both the fetus and the mother.⁴
    - Increased risk of preterm birth, fetal death, and macrosomia with possible birth injury
    - Increased risk of gestational diabetes, preeclampsia, Cesarean delivery, and postpartum weight retention


PURPOSE

- To evaluate the impact of obesity on delivery route and neonatal outcomes in adolescents at a tertiary care facility

METHODS
STUDY DESIGN

- Retrospective cohort study
- Adolescent pregnant patients (ages 13 to 19) who delivered viable, singleton infants
- Vidant Medical Center
- January 1, 2009 – December 31, 2011
- Institutional review board approval was obtained

ANALYSIS

- Patients were divided into three categories based on body mass index (BMI)
  - Normal weight (BMI 18.5-24.9 kg/m²)
  - Overweight (BMI 25-29.9 kg/m²)
  - Obese (BMI ≥30 kg/m²)
- Statistical methods
  - Chi-square analysis
  - One way analysis of variance

RESULTS
DEMOGRAPHICS

<table>
<thead>
<tr>
<th></th>
<th>Normal weight</th>
<th>Overweight</th>
<th>Obese</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>191 (18.4%)</td>
<td>353 (34.0%)</td>
<td>494 (47.6%)</td>
</tr>
<tr>
<td>Mean age*</td>
<td>17.9 ± 1.3</td>
<td>17.9 ± 1.2</td>
<td>18.0 ± 1.1*</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>0 (0%)</td>
<td>2 (0.6%)</td>
<td>3 (0.6%)</td>
</tr>
<tr>
<td>Black</td>
<td>111 (58.1%)</td>
<td>206 (56.7%)</td>
<td>302 (61.1%)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>16 (8.4%)</td>
<td>36 (10.2%)</td>
<td>49 (9.9%)</td>
</tr>
<tr>
<td>White</td>
<td>60 (31.4%)</td>
<td>112 (31.7%)</td>
<td>137 (27.7%)</td>
</tr>
<tr>
<td>Undetermined</td>
<td>4 (2.1%)</td>
<td>3 (0.8%)</td>
<td>3 (0.6%)</td>
</tr>
<tr>
<td>Mean BMI (kg/m²)</td>
<td>22.8 ± 1.5</td>
<td>27.5 ± 5.4</td>
<td>35.9 ± 5.1</td>
</tr>
</tbody>
</table>

*P<0.05

MATERNAL OUTCOMES

Route of Delivery

Vaginal delivery
Operative vaginal delivery
Cesarean delivery

Chi-square: 14.213
Degrees of freedom: 4
Probability level: 0.007

Indication for Cesarean Delivery

Chi-square: 16.773
Degrees of freedom: 8
Probability level: 0.033
### NEONATAL OUTCOMES

<table>
<thead>
<tr>
<th>Normal Weight</th>
<th>Overweight</th>
<th>Obese</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=395 (18.4%)</td>
<td>N=353 (34.0%)</td>
<td>N=494 (47.6%)</td>
</tr>
<tr>
<td>Gestational age (weeks)</td>
<td>36.7 ± 4.0*</td>
<td>37.9 ± 3.0</td>
</tr>
<tr>
<td>Mean 1-minute Apgar score</td>
<td>7.4 ± 2.0</td>
<td>7.7 ± 1.8</td>
</tr>
<tr>
<td>Mean 5-minute Apgar score</td>
<td>8.4 ± 1.4</td>
<td>8.6 ± 1.0</td>
</tr>
</tbody>
</table>

*P < 0.001

### CONCLUSION

Chi-square: 32.793

Degrees of freedom: 4

Probability level: 0.001
CONCLUSION

- Prior studies have shown that adolescent mothers are
- Less likely to require Cesarean section
- More likely to deliver low birth weight infants with lower Apgar scores
- Obese adolescents in our study were
- Less likely to deliver preterm and low birth weight infants
- More likely to deliver a macrosomic infant
- More likely to require a Cesarean delivery

REFERENCES


