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Recommended Citation
Seybolt, Margo, 'Assessing barriers to meeting weight gain goals in obese pregnant women' (2015). Family Medicine Block Clerkship, Student Projects. 95.
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Assessing Barriers to Meeting Weight Gain Goals in Obese Pregnant Women

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EMMC Family Medicine
September, 2015
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Problem Identification

• Over 1/3 of women in the US are obese (BMI > 30)
• Target weight gain during pregnancy is determined by BMI

<table>
<thead>
<tr>
<th>Prepregnancy Weight Category</th>
<th>Body Mass Index*</th>
<th>Recommended Range of Total Weight (lb)</th>
<th>Recommended Rates of Weight Gain† in the Second and Third Trimesters (lb) (Mean Range [lb/wk])</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>Less than 18.5</td>
<td>28-40</td>
<td>1 (1-1.3)</td>
</tr>
<tr>
<td>Normal Weight</td>
<td>18.5-24.9</td>
<td>25-35</td>
<td>1 (0.8-1)</td>
</tr>
<tr>
<td>Overweight</td>
<td>25-29.9</td>
<td>15-25</td>
<td>0.6 (0.5-0.7)</td>
</tr>
<tr>
<td>Obese (includes all classes)</td>
<td>30 and greater</td>
<td>11-20</td>
<td>0.5 (0.4-0.6)</td>
</tr>
</tbody>
</table>

• Maternal obesity and excessive gestational weight gain are associated with increased risks of:
  • Gestational hypertension
  • Preeclampsia
  • Gestational diabetes mellitus
  • Caesarian section delivery
  • Large for gestational age infant
  • Postpartum weight retention
  • Metabolic syndrome
  • Childhood obesity
  • Complications following delivery
Problem Identification (cont.)

• There are currently no evidence-based guidelines related to weight management for obese pregnant women

• In several studies, only ~20% of overweight and obese women who did not receive interventions met their weight gain goals, while ~30-50% in the intervention group met their goals

• Studies found gestational weight gain for control groups was 3-7kg greater than in intervention groups

• Effective Interventions included:
  • Dietary intervention (DASH diet) – food logs, nutrition education and counseling
  • Increased physical activity – encourage 30+ minutes of moderate physical activity per day, pedometer, physical activity logs
  • Group-based interventions – 1-2 individual counseling sessions followed by 60-90 minute group sessions weekly
Community burden and costs

• Maine’s obesity rate is 28.2%, a 10% increase since 2000
• The counties served by EMMC family medicine have some of the highest burden of overweight and obesity
• Cost:
  • One retrospective study found that on average, cost of hospital prenatal care was 5x greater and duration of stay was longer (~4 days) in overweight and obese mothers (BMI >30) compared to healthy weight women (BMI<30)
Community Perspectives

• Name withheld – EMMC faculty
  • Barriers:
    • Cultural normalcy of obesity and poor diet
    • Finding a way to encourage patients to actually attend nutritional counseling and change their diet and exercise habits
  • Possible solutions that may help include revisiting weight gain at every OB check, group visits, better patient education materials

• Name withheld – EMMC faculty
  • Barriers:
    • Limited access to and ability to afford healthy foods
    • Cultural normalcy and using treats as a reward/splurge
    • Education about risks of excess weight gain and myths of ‘eating for two’
  • Solutions that have helped are being specific about dietary needs and food groups
  • Possible solutions for the future include a patient education pamphlet
Intervention and Methodology

• Collected data about gestational weight gain and pregnancy outcomes in 42 Pregnant women with BMI’s >35 who were seen at EMMC family medicine clinic since 2012
  • Measures examined included: weight gain, nutritional counseling, documentation of weight gain goal, gestational diabetes mellitus, pregnancy induced hypertension/pre-eclampsia, gestation duration, delivery type (vaginal vs. caesarean), birth weight, APGARs, and pregnancy/delivery complications

• Performed a literature review of interventions to limit GWG in overweight and obese pregnant women and their effects on maternal and fetal health
Results – EMMC data

• Total term and late term (39-42 weeks gestational age) meeting weight goal (<15 lb gain): 14.3%
• Total referred to nutritional counseling: 55%
  • Only ½ of those patients actually attending counseling and only ¼ of the patients who attended counseling met their weight goal (7% of the total study population)
• Gestational Diabetes Mellitus prevalence: 16.7%
  • Vs ~7% in the general pregnant population
• Prevalence of pregnancy induced hypertension (PIH) and pre-eclampsia: 19%
  • Vs 4-10% in the general US pregnant population
• Delivery:
  • 43% were Induced (vaginal delivery)
  • 32% had Caesarean sections
    • Vs. 20.7% for pregnant women with a BMI <30
  • 24% were spontaneous vaginal deliveries
• Birth outcomes:
  • Prevalence of Large for Gestational age (LGA)/macrosomia: 19%
    • Vs 9% in the general pregnant population
Results – Interventions

• Dietary and group interventions were the most effective and were associated with:
  • Significantly reduced risk of pre-eclampsia, gestational diabetes, shoulder dystocia, and LGA infants
  • Increased percentage of women who returned to their pregravid weights
  • Obese women may be placed on a healthy, well-balanced, monitored nutritional program during pregnancy without adverse perinatal outcomes
• Effectiveness
  • Data about the obese pregnant patient population at EMMC was gathered
  • Possible strategies to improve the rate of patients meeting their weight gain goal, and thus decreasing risk for complications, were identified
  • A patient information pamphlet was created

• Limitations
  • Analysis and data gathering was limited by the electronic medical record system
  • Documentation of counseling and interventions were inconsistent
  • Limited time for data analysis as well as for creating an intervention
Future Project recommendations

• Continue further data analysis of EMMC patients
• Disperse education pamphlet to patients with their prenatal information packet
• Educate physicians as to strategies to help their patients limit weight gain and encourage them to discuss weight gain goals at every OB visit
• Design a pilot program for group-based weight management in obese pregnant women at EMMC
Bibliography

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• Galtier-Dereure, Boegner, and Bringer. Obesity and pregnancy: complications and cost. American Journal of Clinical nutrition; 71(5).