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Assessing Barriers to Meeting Weight Gain Goals in Obese Pregnant Women

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EMMC Family Medicine

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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

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

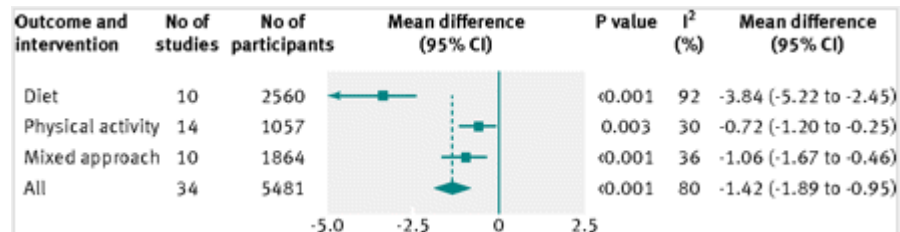
- Maternal obesity and excessive gestational weight gain are associated with increased risks of:
 - Gestational hypertension
 - Preeclampsia
 - Gestational diabetes mellitus
 - Caesarian section delivery
 - Large for gestational age infant
 - Postpartum weight retention
 - Metabolic syndrome
 - Childhood 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

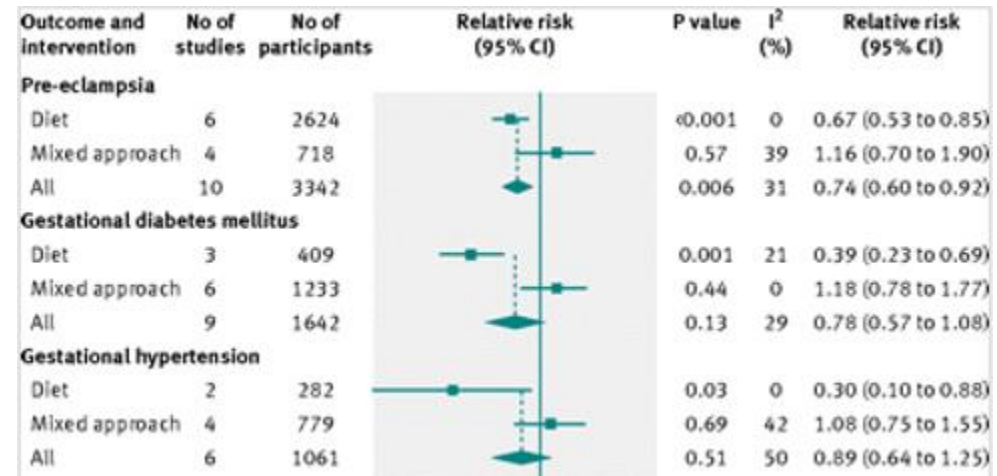
Results – EMMC data

- 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

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