Quality Improvement Project: Compliance of Antenatal Testing in Patients with Class III Obesity

Isabella Sciacca, MD PGY2

HCA MEDICAL CITY HEALTHCARE
UNT-TCU Graduate Medical Education Program
Department of Obstetrics and Gynecology
Medical City Arlington
Our mission

Above all else, we are committed to the care and improvement of human life.
Introduction
Introduction

- According to the American College of Obstetricians and Gynecologists (ACOG), obesity is the most common medical condition of women of reproductive age\(^1\)
- Obesity is classified into three categories according to body mass index (BMI): obesity class I (30-34.9), obesity class II (35-39.9), and obesity class III (40 and above)\(^1\)
- Pre-pregnancy BMI of 40 or greater has the highest rate of maternal and fetal complications\(^2\)
- ACOG recommends consideration of weekly antenatal fetal surveillance at 34 0/7 weeks of gestation for patients with a pre-pregnancy BMI of 40 or greater\(^1\)
Introduction

• Antenatal surveillance includes both fetal non stress test (NST) and biophysical profile (BPP)
  o NST is a surveillance technique that assesses fetal heart rate reactivity
  o A BPP evaluates fetal wellbeing utilizing a scoring system, with a maximum score of 10. This score consists of the presence of fetal breathing, tone, movement, NST, and adequate amniotic fluid volume³
Introduction

• Peer-reviewed-literature predominantly describes the adverse maternal and fetal outcomes of pregnant patients with class III obesity. These studies often outline fetal surveillance for maternal complications of obesity including preeclampsia and gestational diabetes, but not obesity itself.⁴,⁵
Root Cause Analysis

Barriers to antenatal surveillance in clinic

Person
- Physicians
- Medical Assistants
- Patients

Method
- No standard method of documentation
- Differences in interpretation of results

Machine
- Non standardized EHR method
- Time to perform NST/BPP

Materials
- Ultrasound/NST machine not available

Environment
- Short appointment times
- Busy clinic
Methods

• Plan-Do-Study-Act (PDSA) Framework

• **Objective:** improve the compliance of antenatal testing in pregnant women with class 3 obesity at Medical City Women’s Care between May 2023 - November 2023
Old Process Map

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Plan

• Completed weekly antenatal testing for patients with class 3 obesity between 34-40 weeks' gestation were recorded from March 1, 2023 – April 30, 2023

• 6 total patients met criteria for class 3 obesity (Pre-pregnancy BMI >40)
  o March compliance: 26.68%
  o April compliance: 33.34%
Do

- Resident and attending physician education: 100% of residents attended a presentation during weekly didactics about class III obesity and ACOG guidelines for management during pregnancy.
- Medical assistant training on performing NST: 100% of medical assistants at Medical City Women’s Care attended training on proper set-up and administration of in-office NST.
New Process Map
Study

- Completed weekly antenatal testing for patients with class 3 obesity between 34-40 weeks’ gestation were recorded from May 1, 2023 – November 30, 2023
- 18 total patients met criteria for class 3 obesity (Pre-pregnancy BMI >40)
- Monthly assessment of compliance
- Total compliance of 91.4%

<table>
<thead>
<tr>
<th>Month</th>
<th>Percent compliance (%)</th>
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<tbody>
<tr>
<td>May</td>
<td>60%</td>
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<td>June</td>
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<td>100%</td>
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<td>September</td>
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<tr>
<td>October</td>
<td>80%</td>
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<tr>
<td>November</td>
<td>100%</td>
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Act

- Plan to incorporate class 3 obesity diagnosis into 'problem list' present on each patient chart
  - Reminds physicians to start antenatal testing at 34 weeks' gestation
Limitations

- Patient volume and resources
- This study was limited to Medical City Women’s Care, a single resident obstetrics and gynecology clinic part of the comprehensive Medical City Healthcare system
- The number of study subjects with a diagnosis of class 3 obesity was small compared to other studies of its kind
Future Directions

• Completion of next PDSA cycle
  o Assess long term compliance of antenatal testing and documentation of patients with class 3 obesity
• ACOG has outlined recommendations for antenatal testing for obesity in pregnancy
  o Assess compliance of antenatal testing of patients with class II obesity (BMI 35-40)
• Impact that antenatal testing has on fetal outcomes
  o Prevalence of stillbirth
References


Thank you!

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MCWC Medical Assistants
OB/GYN Residents