Effect of Pregnancy-Related Weight Gain on Difficult Neuraxial Anesthesia

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**Background:** The incidence and reasons for failure to achieve adequate neuraxial anesthesia in the obstetric population are not well characterized. (1) While obese parturients may experience higher failure rates, little data predict when a block may be difficult. (2) The Institute of Medicine recommends limiting weight gain during pregnancy to 35 pounds and the last trimester to 1 pound per week, (3) yet to our knowledge the effect of weight gain on block failure has not been explored. We hypothesized that excess weight gain during pregnancy and the last trimester would contribute to difficulties with neuraxial anesthesia at delivery which would be greater in obese patients.

**Methods:** After IRB approval, anesthesia and ACOG records of deliveries for January 2010 were retrospectively reviewed. Minors and patients who delivered preterm were excluded. Weights at baseline, 28 weeks gestation, and delivery, height, gestational age, type of block, and distance to epidural space were recorded. Adverse outcomes including multiple attempts at placement, block abandoned, unsuccessful block, blood return, wet tap, paresthesia, patchy or one-sided block, lack of CSF with CSE, catheter adjusted, and catheter replaced were obtained from our departmental quality assurance database. SPSS v19 was used to evaluate an association between adverse outcomes and weight gain >35 pounds, last trimester weight gain >12 pounds, baseline BMI >35, and distance to the epidural space.

**Results:** Out of 260 regional anesthetics performed for delivery, 216 met inclusion criteria. Since 34 charts were missing key data, 182 were used for analysis. 45 patients (25%) experienced at least one outcome of interest, most commonly multiple attempts (33 patients, 18%). 60 (33%) patients gained >35 pounds during pregnancy and 80 (44%) gained >12 pounds during the last trimester. 25 out of 181 patients (14%) had a baseline BMI >35. In 95 out of 176 patients (54%), the distance to the epidural space was >5.5 cm. No association existed between excess weight gain and outcomes of interest, baseline BMI >35 and outcomes of interest, or excess weight gain and distance to the epidural space. Distance to epidural space >5.5 cm was found to correlate (p <0.05) with the presence of at least one adverse outcome and the outcome multiple attempts. For patients with baseline BMI >35, weight gain >35 pounds correlated with at least one adverse outcome (p <0.05).

**Conclusion:** Excess weight gain during pregnancy and in the last trimester did not correlate with difficult neuraxial anesthesia. While BMI >35 did not correlate with difficulty, the risk of adverse outcomes was higher given a longer distance to the epidural space. For patients with baseline BMI >35 who gained >35 pounds, adverse outcomes were more likely.

**References:**