

### 172 The impact of epidural timing on mode of delivery in nulliparous women at term

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**OBJECTIVE:** To determine if epidural placement in early labor ( $\leq 3$  cm dilation) compared to late labor ( $> 5$  cm dilation) alters the rates of cesarean or operative vaginal delivery in nulliparous women in spontaneous labor at term.

**STUDY DESIGN:** The Consortium on Safe Labor retrospectively collected electronic medical records from 12 institutions from 2002-2008. Nulliparous women in spontaneous labor at term with a singleton, cephalic fetus who underwent epidural placement in either early or late labor were included. Women were excluded if they underwent elective cesarean, cesarean for maternal medical indication, or had an anomalous fetus. Propensity score analysis using factors that might confound the relationship between epidural timing and mode of delivery was used to stratify subjects within the early and late epidural groups to control for selection bias. Cesarean and operative vaginal delivery rates were compared between subjects with similar propensity scores who underwent early as compared to late epidural.

**RESULTS:** 4,185 subjects met criteria for inclusion in the study: 2,988 underwent early epidural placement and 1,197 underwent late epidural placement. In the overall cohort, women with early epidural placement had higher rates of cesarean delivery (RR=1.78,  $p < .0001$  95% CI (1.48, 2.14)) and operative vaginal delivery (RR= 1.54,  $p < .0001$  95% CI (1.29, 1.85)) compared to women with late epidural placement. However, after controlling for confounding with propensity score analysis, there was no difference in the rate of cesarean delivery (RR=1.17,  $p = .140$  95% CI (0.95, 1.45)) or operative vaginal delivery (RR=1.21,  $p = .054$  95% CI (1.00, 1.47)) for women undergoing early as compared to late epidural placement.

**CONCLUSION:** The intrapartum timing of epidural placement in nulliparous women at term does not impact the rates of cesarean or operative vaginal delivery.

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### 173 The impact of maternal body mass index on obstetrical outcome

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**OBJECTIVE:** To examine the impact of maternal BMI on obstetrical complications in pregnancy, as well as maternal and neonatal outcome.

**STUDY DESIGN:** Data was collected from the Niday database which is an Ontario Provincial Perinatal Database. The population consisted of 3863 women who delivered at the Ottawa Civic Hospital with known pre-pregnancy body mass index. They also delivered a singleton over 21 weeks between December 1st 2007 and March 31st 2009. These cases were analyzed for rates of intra-partum and obstetrical complications, medical issues, labour and neonatal outcomes based on their BMI classification (WHO).

**RESULTS:** Cesarean section rates for each class was: underweight, 27.3%; normal weight, 30.5%; overweight, 35.3%; Class I obese, 44.3%; Class II obese, 46.0%; Class IIIa, 52%; Class IIIb, 47.6%; Class IIIc, 42.9%. There was no trend observed on intrapartum complication, such as meconium, fetal distress and shoulder dystocia, between different BMI classes. An increase in BMI showed an association with maternal health issues such as asthma, chronic hypertension and diabetes. Obstetrical complications such as gestational diabetes, hypertension, preeclampsia were increased in obese patients. Babies had a higher rate of LGA, and lower arterial cord pH with increasing maternal BMI.

**CONCLUSION:** There is a significant increase in caesarean section rate with increasing BMI. Maternal obesity significantly contributes to a poorer prognosis for mother and baby during delivery and in the immediate post-partum period. Obstetrical care providers must counsel their obese patients regarding the risks and complications conferred by obesity and the importance of weight loss.

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### 174 Management of obstetric hemorrhage: using a risk assessment tool to predict hemorrhage

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**OBJECTIVE:** To evaluate the proper use, accuracy, and validity of a risk assessment tool (RAT) for predicting obstetric hemorrhage.

**STUDY DESIGN:** As part of our obstetric hemorrhage protocol (OHP), we developed a RAT as part of the order set used for admitting patients to the labor ward. The RAT divided all patients into high, moderate, or low risk for obstetric hemorrhage and automatically ordered appropriate interventions for those at higher risk. A retrospective review was performed to determine rates of hemorrhage in each of the risk categories. Patients with obstetric hemorrhage were those with blood loss more than five hundred milliliters in vaginal deliveries and more than thousand milliliters in cesarean deliveries, and those requiring additional interventions for clinical hemorrhage. The charts were reviewed for hemorrhage risk score, risk factors, need for transfusions, and other interventions. Statistical Analysis was performed using Excel 2007 and SPSS 16.

**RESULTS:** Of 804 admissions, 59.6% had vaginal deliveries and 32.2% underwent cesarean deliveries at term. The risk assessment form was utilized for 90.8% of admissions. 102 met criteria for obstetric hemorrhage. Percent (N) of low, moderate and high risk scores were 64.30% (517), 24.50% (197) and 1.99% (16) respectively. Low risk score correlated with hemorrhage with an odds ratio of 0.393 (95% CI 0.252 to 0.613,  $p < 0.001$ ), moderate risk with an odds ratio of 2.236 (95% CI 1.424 to 3.510,  $p < 0.009$ ) and high risk with odds ratio of 3.279 (95% CI 1.112 to 9.653,  $P < 0.003$ ). There were 445 patients with no risk factors for hemorrhage as listed on the RAT; only 4 of these patients had hemorrhagic complications (95% CI 0.0041 to 0.0303,  $p < 0.001$ ). Patients with suspected abruption, coagulopathies, and placenta previa or accreta did show significant odds for hemorrhage. Patients with a prior history of obstetric hemorrhage had an OR of 79.4 (95% CI 19.8 to 318) for hemorrhage complications.

**CONCLUSION:** We report approximately 90% compliance with the risk assessment form. Risk scores were highly predictive of outcomes.

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