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<b>Abstract</b>	<p><u>Background/ Knowledge Gap</u></p> <p>Obesity is a recognized epidemic in the US population with associated risks of increased instrumentation (mode of delivery) during labor analgesia [1, 2]. Recent studies have shown the use of epidurals for labor analgesia in obese parturients may play a role in these adverse events [1]. The purpose of this retrospective study was to obtain the current incidences of mode of delivery in parturients who undergo epidurals for labor analgesia. Data derived from this study could lead to the development of protocols to minimize or eliminate the effects of epidural analgesia in this patient population.</p> <p><u>Methods/Design</u></p> <p>Following IRB approval, all parturients in active labor aged 18 years and older who requested epidural analgesia were entered into this study. Ordinal multivariable analysis was conducted on the two independent variables on the association for mode of delivery [3, 4]. P values were set for statistical significance at &lt;.005 to minimize the risk of false discovery rates or in declaring associations significant by chance alone [5-7]. Diagnostic accuracy of the model was analyzed with misclassification rates [8, 9]. The statistical program, JMP 13.2 (SAS Institute, Cary, NC), was utilized for this study.</p> <p><u>Results/Findings</u></p> <p>In this study of 1222 parturients median age of 29.6 [26-33] years, BMI 31.3 [26.7-35.3] kg/M<sup>2</sup> undergoing labor analgesia, increasing BMI did not have a statistically significant association with the incidences of Caesarean, forceps or vacuum assisted vaginal delivery when compared to normal spontaneous vaginal delivery (Fig. 1). Although BMI was statistically associated with duration of labor analgesia (Fig. 2), multivariable analysis revealed only duration of labor analgesia was associated with mode of delivery (Table 1). This model had a misclassification rate of 9.2%.</p> <p><u>Conclusions/Implication</u></p> <p>Duration of labor analgesia but not BMI has a statistical association with the incidence of mode of delivery in parturients undergoing labor analgesia for vaginal delivery. In the present study, the positive predictive value of the model ranged from 93.3% to 98.2% which suggests a strong clinical association. These findings suggest that BMI does not play an important clinical role on the incidence of mode of delivery during labor analgesia.</p>
<b>Learning Objectives</b>	Upon completion of this presentation, learners should be able to identify that BMI does not play an important clinical role on the incidence of mode of delivery during labor analgesia.
<b>References and Resources</b>	<p><b>References</b></p> <ol style="list-style-type: none"> <li>1. Vricella, L.K., et al., <i>Impact of morbid obesity on epidural anesthesia complications in labor</i>. Am J Obstet Gynecol, 2011. <b>205</b>(4): p. 370 e1-6.</li> <li>2. Roofthoof, E., <i>Anesthesia for the morbidly obese parturient</i>. Curr Opin Anaesthesiol, 2009. <b>22</b>(3): p. 341-6.</li> <li>3. Hulley, S.B., et al., <i>Designing Clinical Research</i>. Third ed. 2007, Philadelphia, PA: Lippincott Williams &amp; Wilkins.</li> <li>4. Katz, M.H., <i>Multivariable Analysis: A Practical Guide for Clinicians and Public Health Researchers</i>. 3<sup>rd</sup> ed. 2011, New York: Cambridge University Press.</li> <li>5. Colquhoun, D., <i>An investigation of the false discovery rate and the misinterpretation of p-values</i>. R Soc Open Sci, 2014.<b>1</b>(3): p. 140216.</li> <li>6. Glickman, M.E., S.R. Rao, and M.R. Schultz, <i>False discovery rate control is a recommended alternative to Bonferroni-type adjustments in health studies</i>. J Clin Epidemiol, 2014. <b>67</b>(8): p. 850-7.</li> <li>7. Benjamin, D.J., et al., <i>Redefine statistical significance</i>. Nature Human Behaviour, 2018. <b>2</b>(1): p. 6-10.</li> </ol>

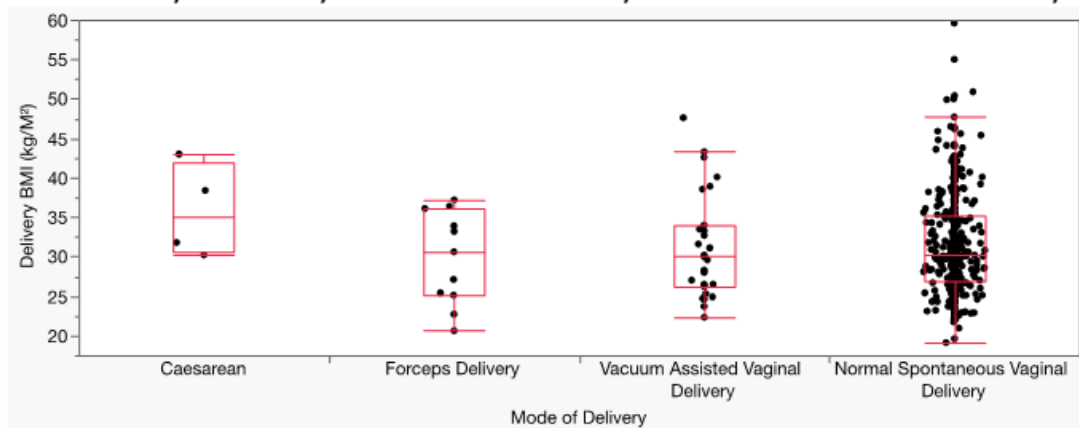
8. Copeland, K.T., et al., *Bias due to misclassification in the estimation of relative risk*. Am J Epidemiol, 1977. **105**(5): p. 488-95.
9. Lyles, R.H., et al., *Validation data-based adjustment for outcome misclassification in logistic regression: An illustration*. Epidemiology, 2011. **22**(4): p. 589-597.

#### Disclosures

All authors and coauthors have no relevant financial relationships to disclose.  
The author does not intend to discuss an off-label/investigative use of a commercial product/device.

Figure 1

## Oneway Analysis of BMI By Mode of Delivery



Level	Minimum	10%	25%	Median	75%	90%	Maximum
Caesarean	30.2	30.2	30.6	35.1	41.9	43.0	43.0
Forceps Delivery	20.6	21.0	25.1	30.6	36.1	37.0	37.2
Vacuum Assisted Vaginal Delivery	22.3	24.4	26.2	30.0	34.0	42.7	47.6
Normal Spontaneous Vaginal Delivery	19.1	25.0	26.9	30.3	35.3	39.8	59.6

n=489, ChiSquare =3.2      DF 3      P=0.3618

Figure 2

## Bivariate Fit of Duration of Labor Analgesia by BMI

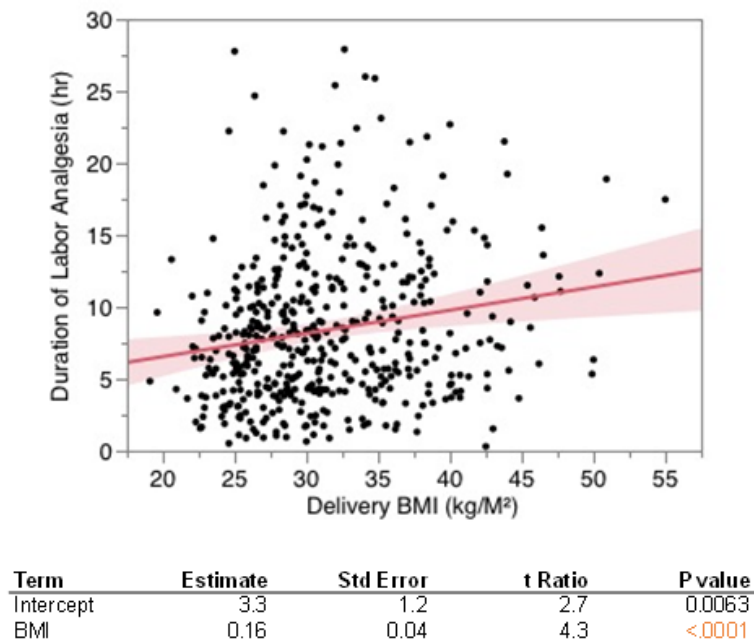


Table 1

## Ordinal Logistic Fit for Mode of Delivery

Term	Estimate	Std Error	ChiSquare	Prob>ChiSq
Intercept[Caesarean]	-4.89	0.99	24.25	<.0001
Intercept[Forceps Delivery]	-3.54	0.89	15.62	<.0001
Intercept[Vacuum Assisted Vaginal Delivery]	-2.41	0.87	7.69	0.0056
Delivery BMI	-0.02	0.03	0.45	0.5034
Duration of Labor Analgesia	0.07	0.02	8.45	0.0036

95% CI: Confidence interval, P values <.005 are statistically significant, n=482. Misclassification rate=8.7%