COMPARING THE COMORBIDITIES IN SUPER OBESE PARTIURENTS WHO RECEIVED LABOR ANESTHESIA WHO HAD VAGINAL DELIVERIES VS CESAREAN DELIVERIES

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- *Introduction*
  - Among patients with BMI's ≥50, there is an increased incidence of cesarean deliveries despite having an epidural placed with the intent of delivering vaginally (1).
  - Obesity related comorbidities, such as type 2 diabetes and hypertension, increase the risk of adverse obstetric outcomes and difficulties with delivery (2)
  - Our team investigated and compared the comorbidities of super obese patients who received epidurals to see if any factors were more associated with being able to deliver vaginally vs requiring CD.

METHODS AND RESULTS

- *METHODS*
  - RETROSPECTIVE REVIEW OF EMR'S FROM PATIENTS WHO WERE ADMITTED FOR DELIVERY BETWEEN 2015-2021 AND HAD A BMI ≥50. OF 342 PATIENT ENCOUNTERS, 108 RECEIVED EPIDURAL ANALGESIA.
  - DATA COLLECTED INCLUDED THE PATIENT'S DEMOGRAPHIC, ANESTHETIC INFORMATION, AND PREEXISTING COMORBIDITIES LIKE
    - GESTATIONAL HYPERTENSION (GHTN)
    - CHRONIC HYPERTENSION (CHTN)
    - DIABETES,
    - ASTHMA
    - OBSTRUCTIVE SLEEP APNEA (OSA)
    - GASTROESOPHAGEAL REFLUX DISEASE (GERD)
  - A HISTORY OF SUBSTANCE ABUSE WAS DEFINED AS THE PATIENT HAVING DOCUMENTED USE OF ILLEGAL DRUGS OR THE USE OF PRESCRIPTION OR OVER-THE-COUNTER DRUGS OR ALCOHOL FOR PURPOSES OTHER THAN THOSE FOR WHICH THEY ARE MEANT TO BE USED, OR IN EXCESSIVE AMOUNTS.
- *RESULTS*
  - THERE WAS A STATISTICALLY SIGNIFICANT DIFFERENCE FOUND BETWEEN PATIENTS WITH ***CHTN (CHI-SQUARE STATISTIC IS 6.4027, P-VALUE IS .011395)*** AND ***DIABETES (CHI-SQUARE STATISTIC IS 6.0074, P-VALUE IS .014246)***. CONCERNING OBSTETRIC FACTORS, THERE WAS A PROTECTIVE STATISTICALLY SIGNIFICANT DIFFERENCE FOUND WITH INCREASED GRAVIDA ***(T-STATISTIC IS -4.102 P= 0.0001) AND PARA (T-STATISTIC IS -3.731, P=0.0003)***.

Table 1. Comparing Labor Epidurals with Successful SVD vs Requiring CD

		Successful SVD	Required CD
Sample Size		59	49
Maternal BMI (kg/m2)	Mean	54.49	56.65
	Standard Deviation	4.18	7.38
	Minimum	50.1	50.14
	Maximum	71.94	92.23
Maternal Age (years)	Mean	29.08	27.43
	Standard Deviation	6.52	5.15
Obstetric History	Gravida	3.71 (SD 2.56)	2.04 (1.37)
	Para	1.90 (SD 2.13)	0.63 (1.17)
Gestational Age (weeks)	Mean	37.80	37.35
	Standard Deviation	1.65	2.49
Comorbidities (%)	GHTN	57.63% (34)	57.14% (28)
	CHTN	23.73% (14)	46.94% (23)
	Diabetes	10.17% (6)	28.57% (14)
	Asthma	11.86% (7)	22.45% (11)
	OSA	3.39% (2)	4.08% (2)
	GERD	20.34% (12)	18.37% (9)
	Smoking History	32.20% (19)	32.65% (16)
	Substance Abuse History	5.08% (3)	12.24% (6)

DISCUSSION

- As anesthesia providers, understanding the circumstances of each encounter, including obstetric history and maternal comorbidities, can help us plan for the chance of needing CD in specific patients.
- Comparing obstetric history, our data suggests that having a higher gravida and para status in super obese patients is a protective factor for being able to deliver through SVD.
- patients who had chronic hypertension and diabetes were found to have a statistically significant differences with increased CD.
- Further investigations could review if attempted stricter management of comorbidities in super obese patients, like chronic hypertension and diabetes, is more likely to reduce rates of CD in this patient population.





- **References:**

  - Hartge, David et al. "Maternal super-obesity." Archives of gynecology and obstetrics vol. 293,5 (2016): 987-92. doi:10.1007/s00404-015-3921-9
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