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# MATERNAL WEIGHT;
## IMPACT ON SUCCESS OF VAGINAL BIRTH AFTER CESAREAN SECTION

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**ABSTRACT:** Impact of maternal weight on success of VBAC. **Introduction:** Worldwide Cesarean section is the commonest obstetrical procedure to be performed and same situation is in Pakistan. One strategy is to offer vaginal birth after cesarean section to reduce the alarming cesarean rate. Many factors have been Identified which can affect success of trial of labor. Maternal weight has an important relation with the reproductive health of women, as obesity during pregnancy is associated with increased maternal and fetal risk. Maternal obesity has been shown to be associated with increased rates of primary cesarean delivery and failed trial of vaginal birth after cesarean delivery. **Objectives:** To determine the effect of maternal weight on success of VBAC. **Study Design:** Cross sectional study. **Period:** May 2012 to October 2013. **Setting:** Liaquat university hospital, Hyderabad. **Material and Methods:** a total of 96 women which fulfilled the selection criteria were included in the study. **Results:** The women included in the study had a mean age of SD (range), 29.94+ 4.41 (20-40 years) successful vaginal births was observed in 57(59.4%) women and 39(40.6%) had an emergency repeat cesarean delivery. Body mass index was noted among all the women, 23(24.0%) were obese and 73 (76.0%) were non-obese. Out of 23(24.0), 7(30.4%) had successful VBAC and 16(69.6%) women had successful trial of labor and 23(31.5%) delivered by repeat Caesarean delivery. (P.0.002) P value = 0.001 is statistically significant and calculated by Fisher's exact $X^2$ test. **Conclusions:** Obesity is associated with decreased chances of successful VBAC, making it a risky option for obese women.

**Key words:** VBAC, obesity, caesarean section, maternal weight, BMI, trial of labor

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## INTRODUCTION

Cesarean section is the commonest obstetrical procedure performed worldwide. Rate of caesarean deliveries is on the rise as one third of deliveries in United states occur by caesarean section, the most commonest reason being a prior caesarean section.[1]

Caesarean section increases the risk of maternal morbidity, complications in future pregnancies and is more costly than vaginal deliveries.[2] VBAC is the safe option for women having previous caesarean section and has been advocated as a strategy to decrease the increasing caesarean rate.[3] several factors can affect the success of VBAC, maternal weight has impact on both trail of vaginal birth and primary caesarean section.[4,5]

Obesity is raising global epidemic, the latest report WHO indicate that in2008 approximately 1.4 billion adults were overweight. Of these overweight adults nearly 300 million adults were obese. According to WHO by 2015 more than 700 million adults will be obese.[6] maternal weight has an important relation with the reproductive health of women, as obesity during pregnancy is associated with increased maternal and fetal risk.[7]

## MATERIAL AND METHODS

This cross sectional study was conducted at Obstetrics and Gynecology unit-II, Liaquat university hospital, Hyderabad. From May 2012 to October 2013. A total of 96 women having previous one Caesarean delivery were included in the study having a term singleton pregnancy. Women having more than one prior Caesarean delivery, classical uterine incision, and severe

medical and obstetrical complications (Diabetes, Hypertension, Multiple pregnancy, Intra uterine growth restriction, severe abruption) were excluded from the study. After taking a written informed consent, detailed history was taken, maternal weight, height, BMI was calculated and relevant investigations were performed, patients were closely monitored for progress of labor, maternal and fetal condition and scar integrity, all the relevant information were recorded on a pre-designed proforma. Patient's age, parity, maternal BMI were taken as variables. Mean standard deviation was calculated for variables like age. Frequency and percentages were calculated for variables like maternal body mass index and success or failure of attempted vaginal birth after Caesarean section. Confounding variables were controlled by stratification by age and booking status of the patient.

## RESULTS

Total 96 women were included Out of 96 women, successful vaginal birth after caesarean in this study with mean age + SD (range), 29.94 + 4.41(20 – 40 years). An section was observed in 57(59.4%) women and 39(40.6%) women had an emergency caesarean section. (Figure-1).

Body Mass Index was noted among the all women, 23(24.0%) had obesity and 73(76.0%) were non-obese. (Figure-2). Out of 23(24.0%) women with obesity, 7(30.4%) had successful vaginal birth after caesarean section and 16(69.6%) had Emergency caesarean delivery. Out of 73(76.0%) women who were not obese, there were 50(68.5%) women had successful trial of labor after prior caesarean section and 23(31.5%) women delivered by Emergency caesarean section with significant difference(p 0.002) (Table-I).

Emergency caesarean section was performed in 39(40.6%) women, out of them, 23(24.0) were because of non-progress of labor, 6(15.4%) fetal distress and 10(25.6%) had caesarean section due to scar tenderness (Figure-3)

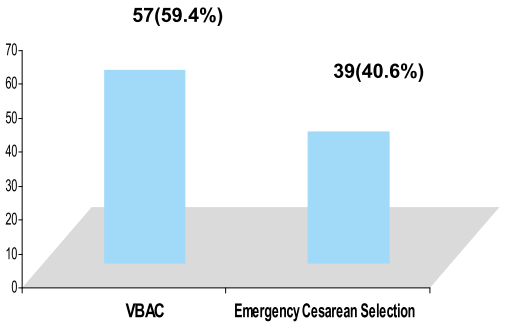


Figure-1. Mode of delivery n = 96

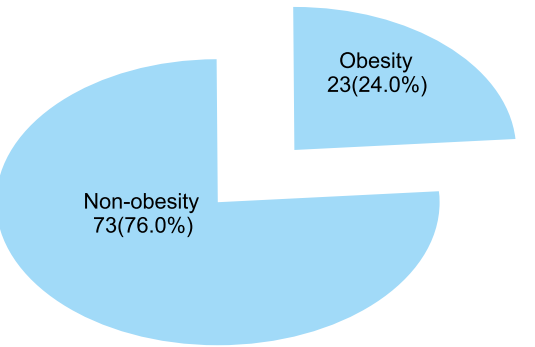


Figure-2. Distribution of body mass index n = 96

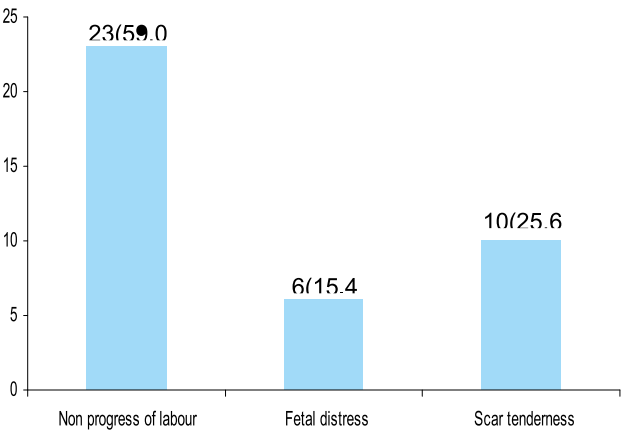


Figure-3. Indication of emergency caesarean section n = 39

## DISCUSSION

In this study of 96 women were given trail of vaginal birth after caesarean with mean age + SD (range), 29.94 + 4.41(20–40 years). Successful trial of vaginal birth was observed in 57(59.4%) women, which was lower than the rates reported

| | Obese n = 23 | Non obese n = 73 | Total |
|---|---|---|---|
| **Mode of delivery:** | | | |
| VBAC | 7(30.4%) | 50(68.5%) | 57(59.4%) |
| Emergency caesarean selection | 16(69.6%) | 23(31.5%) | 39(40.6%) |

**Table-I. Cross tabulation of mode of delivery and body mass index n = 96**
P value = 0.002 is statistically significant and calculated by Fisher's exact $X^2$ test.

from studies conducted in Europe and US[8,9] which were 75% and 61.4% respectively. The reported success rates of a study done in Karachi was 62%[10], however a recent study done in Nawabshah reported a success rate of 41.93% which is much lower than our study.[11] Highly variable success rates of VBAC reported by above mentioned studies show that proper selection of patients is the key to successful trial of labor. Maternal obesity is associated with lower success rates of vaginal birth after caesarean.

Another study done by Crane et al also documented an increased risk of caesarean delivery among obese women.[12] Apart from increased primary caesarean rate obesity is also associated with decreased rate of successful vaginal birth after caesarean section, leading to some controversy in the management of subsequent pregnancy among obese women with prior caesarean delivery.

Chuhan et al found that women weighing more than 300lbs at the first antenatal visit had a vaginal birth after caesarean section success rate of 13% and had a higher infectious morbidity than the elective caesarean section.[13]

In our study 23(24.0%) out of 96 women had obesity and 73 (76.0) were non obese. Rate of successful VBAC in obese women was 30.4% where as successful VBAC in non-obese women was 68.5%. In a similar study Caroll et al documented rates in vaginal birth after prior caesarean section rates of 82% in lean women to 13% in morbid obese women.[14]

## Recommendations

Overweight/obese women should be informed regarding increased chances of failed trial of vaginal delivery necessitating an operative delivery, thus increasing the risks and health care costs.

Departmental policy regarding criteria for selection of women undergoing trial of vaginal birth should be analyzed in depth and reviewed regularly in order to increase the percentage of women that can undergo a vaginal birth.

Regular audit of policy is necessary in order to improve the level of care given to these women and ensure maternal and fetal wellbeing.

## CONCLUSION

Patient selection is the key for successful trial of labor after previous caesarean delivery.
Obesity is becoming a major health concern and obstetricians increasingly come across obese women with previous caesarean section, our study confirmed the negative effect of increased maternal weight on success of vaginal birth in subsequent pregnancy, making trial of labor a risky option for these women.



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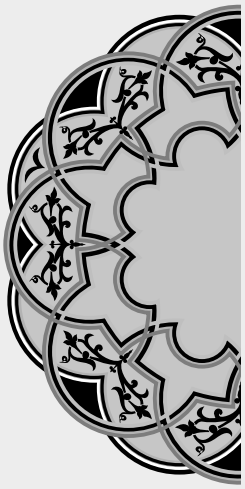

*"Work hard in silence,*
*Let success make the noise."*

**Unknown**

## AUTHORSHIP AND CONTRIBUTION DECLARATION

| Sr. # | Author-s Full Name | Contribution to the paper | Author=s Signature |
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| 1 | Dr. Sana Zahiruddin | Literature search proforma formation, Data collection and Data analysis | |
| 2 | Dr. Pushpa Chetan Malhi | Datacollection, Literature search, Data analysis | |
| 3 | Dr. Nigar Jabeen | Study concept literature search | |
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