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## The frequency of Vaginal Birth After Cesarean-section in pregnant women at Malalai and Shahr-Araa teaching hospitals

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### ABSTRACT

*Vaginal Birth After Cesarean Section is one of the reasonable and practical methods to control and decrease the rate of unnecessary and elective Cesarean sections in women, which in turn decreases the potential risks resulting from C-section affecting mother and baby. Therefore, it is imperative to have a clear understanding of the context, factors, and goals of such interventions. Goal: The major goal of this research paper is to find the incidence of Vaginal Birth After Cesarean-section (VBAC) in pregnant women at Malalai and Shah-Araa Teaching Hospital. Method: This research uses the Descriptive Cross-Sectional method. The data is taken from patients' documents who were admitted to the Malalai Maternity Hospital and Shahr-Araa Teaching Hospitals for VBAC during April and May of 2018. Results: The current study which took place for two months of April and May of 2018 in Malalai Maternity Hospital and Shah-Araa Teaching Hospital reveals that that 50 out of 120 women who had previous scars of Cesarean section (41.6%) received VBAC, who averagely aged  $28 \pm 6$  ( $\pm SD$ ) years within the age interval of 20-40 years. The median of pregnancy counts was 2 and its range was 1-11, the median of birth spacing was 3 and its range was 1-12 and the median weight of baby was 3 Kilograms and it's range was 1.5-4 Kgs and the average gestational age was  $38 \pm 2$  ( $\pm SD$ ), It is seen with the highest incidence at 20-30 years of age, new-born with 2.5-3.5 kgs., gestational age of 39 weeks or higher, first parity, and a pregnancy gap of 2-4 years. Additionally, 4 of them had experienced premature rupture of the amniotic membrane. Final Result: The current study shows that by carefully selecting individuals, we can decrease unnecessary Cesarean sections through using VBAC, and performing this operation is directly dependent on the decision of obstetrics/gynecology professionals. Keywords: previous scar of Cesarean section, VBAC (Vaginal Birth After C-section), pregnancy.*

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### 1. INTRODUCTION

Vaginal Birth after C-section is considered one of the biggest changes in the obstetrical management in the current century and should be carried out if the circumstances are suitable. (1)

There are many reasons favoring VBAC, including but not limited to overall decrease in length of stay, morbidity and mortality, bleeding during or after birth, needs of blood transfusion, incidence of thromboembolic complications, decrease in injuries to bladder and bowels, all of which in turn lowers the prenatal morbidity and mortality to lesser than 1 percent. (2)

### 2. OBJECTIVE

The major goal of this research is to find the prevalence of VBAC in pregnant women in Malali maternity hospital and Shahr Araa teaching hospital.

### 3. BACKGROUND

Vaginal birth is a spontaneous process which doesn't need interventions and has been occurring naturally for many years, but sometimes it can be complicated and fortunately during the past few decades humans have had access to better scientific and technological advancements that now we can intervene through surgical procedures whenever there is a threat to the life of mother or the fetus. But unfortunately, after some time these surgical procedures became the new routine in various societies and is mainly used as a way to avoid the pain of labor, moreover, these procedures are usually more dangerous than normal vaginal births at various occasions due to many factors such as anesthetic complications, embolism, post-surgical infections, infertility, recurrent abortions, placenta Previa, placenta accrete, placenta percreta, and placenta increta, enter vesical fistulas, bleeding, morbidity and mortality in mothers and newborns, even with such huge complications these surgical procedures have an increasing trend in both developed and developing countries. (3)

According to the World Health Organization (WHO), C-section reaches 15-18%, and repeated C-sections should be lowered. In the last 20 years, the American College of Obstetrics and Gynecology has been trying to propose modalities to decrease C-section to a standard acceptable level, and VBAC was one of their propositions which caused the decreased incidence of C-section and increased VBAC in America. (1)

Clearly vaginal births have more advantages compared to C-section, therefore many women prefer normal vaginal births after undergoing a C-section.

VBAC is usually performed on those women who have a single fetus of 37+ week's gestation with head down the presentation and have a scar of previous C-section, with a success rate of 72-75%. (3)

There have been many studies conducted regarding the success of VBAC with varying results, as 40-80% of women with the previous history of C-section can easily go through vaginal birth. (3)

The prevalence of VBAC varies greatly in different regions of the world. According to HE Knight et al 2013 Royal College of Obstetricians and Gynecologists, London, UK, VBAC is 63.4%. (4) According to Pooja S. Singh et al 2016 Obstetrics and Gynecology department of Ahmedabad Hospital, Gujarat, India the prevalence is 48.8%. (5) George O Ugwu et al 2014 Obstetrics and Gynecology department of the teaching hospital at the University of Nigeria states it 50%. (6)

P. Thilavathi et al 2017 obstetrics and gynecology department at Coimbatore Medical College and Hospital in Tamil Nadu India states it 36%. (7)

According to Mohammad Abou El-Ardat et al 2013, Central Clinic of obstetrics and gynecology at Sarajevo, Bosnia and Herzegovina VBAC is 63.8%. (8)

Uma Pandey et al 2017 department of obstetrics and gynecology at Banarus Hindu University reported it 61.76%. (3)

Tasleem H et al at obstetrics and gynecology department of Islamabad Medical College, Pakistan reports it as 70.7%. (9)

Raffat Bano et al 2015 reported the VBAC to be 63.6% after a study conducted at Agha Khan Hospital, Karachi, Pakistan. (10)

Jawaria Farzand Raja et al 2013 at Medical Sciences Institute of Pakistan states it 67%. (11)

Studies conducted by Masoumeh Mirtemyuri et al 2016 at obstetrics and gynecology department of Medical Sciences University, Mashhad, Iran shows that prevalence of VBAC is 91%. (12)

Hsiu-Ting et al 2017 at obstetrics and gynecology department of Mackay Memorial Talpei Hospital, Taiwan states it to be 84.93%. (13)

Studies performed by Malede Birara et al 2013 at obstetrics and gynecology department of Adis Ababa, Ethiopia shows that prevalence of VBAC is 64.5% and in the tropical regions it reaches 63-75%. (14)

Nilan Chalis Singh et al 2014 studies at Maulana Azad Medical College, New Delhi, India shows the prevalence of VBAC to be 67.6%. (15)

Studies performed by Yvonne W.Cheng et al 2011 at the department of obstetrics and gynecology at the University of California, United States of America shows the prevalence of VBAC to be 74%. (16)

The research conducted by Ashish Panchal et al 2015 in obstetrics and gynecology department of Vadodara, Shree Sayaji General Hospital, India, shows the prevalence of VBAC to be 41.07%. (17)

Urooj Malik et al 2016, at the department of obstetrics and gynecology of Ziauddin Medical University, Karachi, Pakistan states the prevalence of VBAC to be 68.04%. (18)

He L et al 2016 conducted a survey at West China Second Hospital which shows that VBAC is 72.12%. (4)

Mayosaloon Adnan Abdul Razzak et al 2017 conducted research at the department of obstetrics and gynecology of Karbala University, Iraq which shows that VBAC is 73%. (19)

Therefore, it can be posited that the prevalence of VBAC is not the same throughout the world, and it differs in different regions and even different areas of the same country.

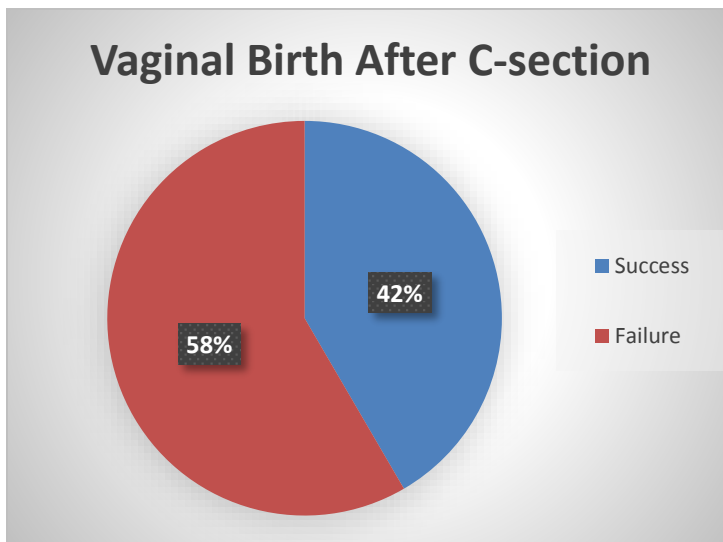
#### **4. PROCEDURE**

This research is conducted through Descriptive Cross-Sectional method during the two months of April and May 2018. The data is extrapolated from patients' documents who have been admitted for VBAC at the Malalai Maternity Hospital and Shahr Araa Teaching Hospital.

As we can see, in this research we excluded any repeated C-section and normal vaginal delivery. And all of the pregnant women with a scar of previous C-section who was admitted during these two months at the aforementioned hospitals have been included in the study. The study is performed on a group with variables (all of the vaginal births after C-section according to age of woman, number of births, gestational age, gap between births, premature rupture of amniotic membrane, and weight of newborn) extrapolated from the patients' documents then analyzed with the help of SPSS software, formed into tabulations and charts, then considerately compared and studied with medical literature.

**5. RESULTS**

In the current study which is performed during the two months of Aqrab and Qaws 1397 Hj at Malalai Maternity Hospital and Shahr Araa Teaching Hospital reveals that from the total of 120 women who had a scar of previous C-section, 50 women (41.6%) were taken for VBAC where the median age is  $28 \pm 6$  ( $\pm$ SD) years and the range is 20-40 years. The median of a number of births is 2, the range is 1-11, median of the gap between births was 3 and the range is 1-12, the median weight for a newborn was 3Kg and the range is 1.5-4 Kg, the median gestational age was  $38 \pm 2$  ( $\pm$ SD). The conclusions of this research are explained using tables and graphs according to the age of the women, a number of births, gestational age (weeks), the gap between births, premature rupture of amniotic membrane, and the weight of the newborn respectively.



**Fig. 1: The percentage of VBAC**

According to the chart above, from the total of 120 individuals (120 cases), 50 cases (41.6%) successfully went through VBAC, while the remaining 70 cases (58.4%) couldn't achieve a successful VBAC and were shifted towards C-section.

**Table 1: The percentage of VBAC cases according to maternal age**

Maternal Age (Years)	Number	Percentage
Lower than 20 years	0	0
20-30 years	37	74
31-40 years	13	26
Over 40 years	0	0
Total	50	100

According to the data above, VBAC is most prevalent in pregnant women of 20-30 years of age (74%).

**Table 2: The number and percentage of VBAC according to the weight of a newborn**

Weight (in Kgs)	Number	Percentage
Lower than 2.5 Kgs	2	4
2.5-3.5 Kgs	43	86
Over 3.5 Kgs	5	10
Total	50	100

The table above shows the incidence of Vaginal Birth After Cesarean (VBAC) according to the weight of newborn, with the highest incidence (86%) among the newborns weighing 2.5-3.5 Kgs.

**Table 3: The incidence of VBAC according to gestational age**

Gestational Age (Weeks)	Number	Percentage
26-30	2	4
31-34	1	2
35-38	15	30
39 and over	32	64
Total	50	100

The table above shows the incidence of VBAC within those pregnant women who were admitted to Malalai Maternity Hospital and Shahr Area Teaching hospital during the research period, which shows that the highest incidence (64%) is seen at 39+ weeks of gestation.

**Table 4: The percentage of VBAC according to the number of births**

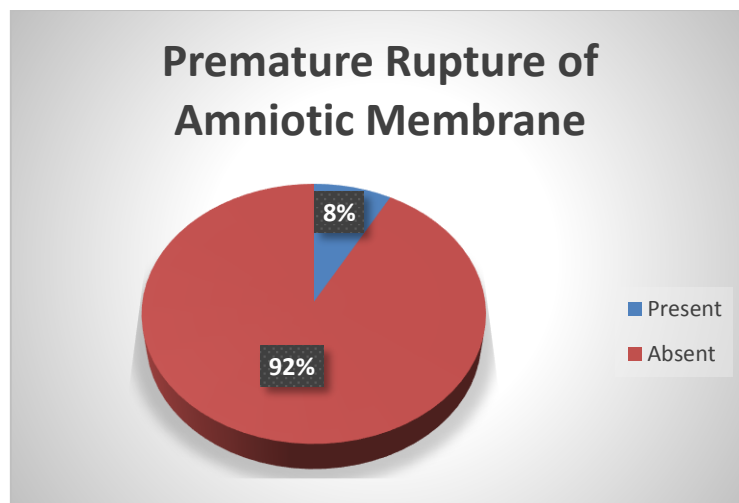
Number of Births	Number	Percentage
1	15	30
2	14	28
3	7	14
4	4	8
5 and above	10	20
Total	50	100

The table above shows VBAC considering the number of births, where the highest incidence (30%) is seen in first parity.

**Table 5: Number and percentage of VBAC according to the gap between births**

Birth Gap (Years)	Number	Percentage
Less than 2 years	9	18
2-4 years	34	68
More than 5 years	7	14
Total	50	100

According to the table above, VBAC cases are most common (68%) in women having a birth gap of 2-4 years.



**Fig. 2: The percentage of VBAC cases according to premature rupture of the amniotic membrane**

Looking at the chart above, from 50 successful VBAC cases, only 4 individuals (8%) experienced premature rupture of the amniotic membrane.

## 6. DISCUSSION

According to the research done at Malalai Maternity Hospital and Shahr Araa Teaching Hospital, 50 (41.6%) out of 120 total number of women with a scar of previous C-section received VBAC, so this study is similar in some areas while different in others when compared to other studies.

As the median age was  $28 \pm 6$  ( $\pm$ SD) years in the current study, and the age range is 20-40 years. The prevalence of Vaginal Births After C-section is widely different in different areas of the world. As we can see that:

- According to HE Knight et al 2013 Royal College of Obstetricians and Gynecologists, London, UK, VBAC is 63.4%. (4)
- According to Pooja S. Singh et al 2016 Obstetrics and Gynecology department of Ahmedabad Hospital, Gujarat, India the prevalence is 48.8%. (5)
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As we can see, the prevalence of menstrual disorders isn't the same worldwide but differs in various regions of the world and it isn't even the same at the different parts of the same country, it's probably caused due to fear of uterine rupture and increased possibility of hysterectomy after uterine rupture which is a life-threatening situation for both the mother and the baby.

This research shows that 74% incidences of VBAC happen between 20 and 30 years of age which is the highest. And in the other literature, such as the study conducted in the obstetrics and gynaecology department of the teaching hospital at Nigeria University shows the highest incidence (50.7%) to be at 31-40 years of age which is different than our findings. One of the reasons may be the low rate of literacy where they either don't precisely know their age or don't want to reveal their actual age. Or maybe because some of the mothers want to increase their number of births, decrease the cost of birth services, and want to return to their daily routine as soon as possible, and therefore don't want recurrent C-sections at this age interval. (6)

According to the weight of the newborn, in our research which includes 50 pregnant women who undergone VBAC. The highest cases coincided with the babies having 2.5-3.5 Kgs of weight. Here it is similar to the study done at the Department of Ob/Gyn at the University of Banaras Hindu, India, where they also report the most cases (76.19%) of VBAC to be in babies having 2.5-3.5 Kgs of weight. (3)

According to the gestational age, our study shows that those pregnant women who went through VBAC, most of them (64%) were in the 39 + week of their pregnancy, where it differs from the study conducted by Mohammad Abou El-Ardat et al at the University of Sarajevo, Bosnia and Herzegovina. Because in this research the highest number of cases (47.92%) is at the 35-38 weeks of gestation, which may be due to imprecise knowledge of LMP (Last Menstrual Period) and waiting until the start of normal uterine contractions, as many pregnant women don't want to stimulate the labour prior to the start of normal uterine contractions. (8)

According to the number of births, our research is similar to this research, as 30% of 50 VBAC cases were in the first parity. However, the study conducted by Elie Nkwabong et al 2016 at Cameroon Hospital, Yaounde, 33.3% of the studied population were in their first parity. (2)



According to the birth gap, our research shows that VBAC is 68% in women whose birth gap is 2-4 years, which is closely resembles the results of the study undertaken by Mohammad Abou El-Ardat et al 2013 at Sarajevo University, Bosnia and Herzegovina, which reports it to be 68.75% for the same birth gap interval. (8)

According to the premature rupture of the amniotic membrane, this research shows that 8% experienced premature rupture of the amniotic membrane, which resembles the results of the study performed by Pooja. S. Singh et al 2016 in Gujarat, India, which reports it to be 9.5%. (5)

## **7. LIMITATIONS**

As this study is conducted during two months only, the sample size is limited and pertains to only two locations. It is possible to have different results from the other hospitals in the country. If we perform the same study at a significant population the results may differ, therefore these results are not applicable to the whole society.

## **8. CONCLUSION**

The results show that if appropriate patients are carefully selected for Vaginal Birth After Cesarean with careful management during the birth process, it won't cause serious complications, therefore we can use it to decrease the number of repeated and unnecessary C-sections, especially in those health centres which lack the important facilities to perform emergency C-section.

## **9. PROPOSITIONS**

- Careful selection of prospective patients for the process among the pregnant women having a scar of previous C-section.
- Raising awareness of pregnant women regarding the benefits and risks of VBAC.
- Improving professional knowledge regarding VBAC.
- Undertaking country-wide studies regarding VBAC. (1)
- Decreasing unnecessary C-sections to the least in the pregnant women who have a scar of previous C-section.

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