

# VAGINAL BIRTH AFTER CAESAREAN SECTION; TO EVALUATE FACTORS FOR SUCCESSFUL OUT COME

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**ABSTRACT... Introduction:** Vaginal birth after caesarean section is currently the preferred method of delivery for pregnant women who had previous one lower segment caesarean section. This common practice warrants some reconsideration in light of recent clinical data on the risks associated with VBAC. **Objectives:** To evaluate conditions which can achieve successful vaginal birth after one caesarean section. **Study Design:** Cross-sectional analytic study. **Setting:** Department of Obstetrics and Gynaecology, Unit-I, Services Hospital, Lahore. **Duration of Study with Dates:** Study was carried out over a period of six months from 08-06-2006 to 07-12-2006. **Subjects and Methods:** One hundred pregnant women meeting inclusion criteria were included. During trial of labour patients were closely monitored by vital signs, fetal cardiac activity, lower abdominal pain and tenderness, fetal distress, vaginal bleeding and loss of presenting part. **Results:** Mean age of the patients was 34.27 + 6.45. According to distribution of cases by parity, maximum number i.e 64 (64.0%) was P 3-6. 79 patients (79.0%) had prior vaginal delivery. Maximum 41.0% patients were due to fetal distress while in 28% indication for previous caesarean were breech presentation. In 71% patient membranes were intact while 29.0% patients presented with per vaginal leaking. 51.0% had dilatation between 3-4cm. VBAC was more successful in patients 58.0% with favourable Bishop score. **Conclusions:** BMI <20, prior vaginal delivery, non-recurrent indication for previous caesarean, spontaneous onset of labour, cervical dilatation or favourable Bishop score, weight of baby < 3.5kg predict an individual's likelihood of successful VBAC.

**Key words:** Emergency Caesarean Section, Vaginal Birth After Caesarean Section (VBAC), Trial of Labour.

## INTRODUCTION

A dramatic rise in caesarean deliveries have been occurring over the past three decades. The old myth of "once a caesarean always a caesarean" is no longer acceptable. Hence there is a change world over leading to on increased practice of attempting vaginal birth after caesarean delivery as compared to repeat elective caesarean delivery include lower rates of post partum fever, wound infections, maternal discomfort, length of hospital stay, need of blood transfusion and lower rates of hysterectomy<sup>1</sup>.

A successful vaginal birth with previous one caesarean section includes several factors. Out of these, favorable bishop's score, BMI < 20, prior vaginal delivery, wt of baby < 3.5 kg and non-recurrent indication for previous caesarean section are the most common<sup>2</sup>.

Maternal age also plays an important role and age less

than 40 years is considered to be a favourable factor<sup>3</sup>.

However, trial of labour is associated with a greater risk of uterine rupture and hence increased incidence of perinatal death<sup>4</sup>.

In Pakistan, large scale data is lacking on safety and outcome of trial of labour. Two retrospective studies conducted in our country suggest success as high as 70-80% of trial of labour in patients with favourable parameters<sup>5,6</sup>.

Hence this study was conducted in order to be able to predict about the patients who are likely to have successful VBAC and hence reducing fetomaternal mortality. Another benefit of this study was that It will promote vaginal birth in patients with previous caesarean section and hence reducing complications associated with caesarean section.

## MATERNAL AND METHODS

### Setting

Study was carried out in the department of Obstetrics and Gynaecology, Unit-I, Services Hospital, Lahore.

### Study Design

Cross-sectional analytic study.

### Duration of Study

Study was carried out over a period of six months from 08-06-2006 to 07-12-2006.

### Sample Size

One hundred pregnant women meeting inclusion criteria were included.

### Sampling Technique

Purposive non-probability sampling.

## SAMPLE SELECTION

### Inclusion Criteria

1. Pregnant ladies at 37 to 40 weeks of gestation.
2. History of previous one caesarean section due to non recurrent cause.
3. Cephalic presentation.
4. Previous LSCS should have been done by a proper obstetrician (to ensure scar integrity).

### Exclusion Criteria

1. A clinically inadequate or contracted pelvis.
2. History of previous uterine rupture or scar.
3. Non-reactive fetal heart rate pattern.
4. Any medical or obstetrical complication like eclampsia, pre-eclampsia, placenta previa, diabetes mellitus etc.

## DATA COLLECTION

Patients fulfilling the inclusion criteria were included in the study. An informed consent was obtained from all patients. After admission in the labour room complete obstetrical and medical history was taken, followed by detailed physical examination including general physical, abdominal and pelvic examination. All basic laboratory investigations were carried out which include

complete blood counts, blood grouping, blood sugar, and urine complete examination. All patients also had cardiotocogram and ultrasonogram to assess fetal well-being.

Some of the parameters namely patient's age, prior vaginal birth, reason for first caesarean section, admission cervical effacement and admission dilatation were reviewed. After evaluation, patient was counseled regarding potential benefits and harms of undergoing trial of labour.

Intravenous line was maintained and blood grouping and cross-matching was done pre-hand. Patient were allowed to go into spontaneous labour. Patient was closely monitored by a Registrar.

During trial of labour patient was closely monitored by vital signs, fetal cardiac activity, lower abdominal pain tenderness, fetal distress, vaginal bleeding and loss of presenting part. Facilities were made available during whole trial of labour for emergency caesarean section. After delivery patient was kept in labour room for 24 hours and observed for vital signs, uterine activity postpartum haemorrhage and signs of any other complication. If remained stable then she was shifted to postnatal ward. At any stage if the progress of labour endangers life of mothers or child, the delivery was processed through caesarean section. All this information was collected on a proforma attached herewith.

## DATA ANALYSIS

Data was entered and analyzed on SPSS version 12.0. Factors such as patients age, prior vaginal birth, reason for first caesarean section, admit cervical effacement and admit dilatation would be analyzed in view of successful vaginal birth after one caesarean delivery. These were presented as simple descriptive statistics, mentioning means and standard deviation of all the numerical data.

The outcome of routine investigation and progress parameters were presented as frequency distribution tables. The number of case proceeding to normal vaginal delivery and not delivery vaginally were classified.

## RESULTS

Table-I shows distribution of cases according to age. Maximum number of females were in the age group of 20-40 years that is 87 (87.0%). While minimum number that is 13 (13%) were above the age of 40 years with mean age 34.27 + 6.45.

Table-II reveals distribution of cases according to body mass index (BMI). Maximum number of 68 patients (68.0%) had BMI < 20, while 32 patients (32.0%) had BMI > 20.

Distribution of cases by parity shows that maximum number i.e 64 (64.0%) was P 3-6.

Table-III shows distribution of cases according to prior vaginal delivery. 79 patients (79.0%) had prior vaginal delivery, while 21 patients (21.0%) females had no prior vaginal delivery.

Case distribution by place of previous caesarean section shows that majority of the patients were 57 (57%) were done in teaching hospitals, while 12 (12.0%) i.e minimum number had previous caesarean at remote areas.

Case distribution by cervical dilatation on admission of current pregnancy. Shows highest number i.e 51 (51.0%) had dilatation between 3-4cm.

And Bishop score on admission. VBAC was more successful i.e 58 (58.0%) in patients with favourable Bishop score and less successful in patients with poor Bishop score i.e 7 (7%).

**Table-I. Distribution of cases by age ( n=100)**

Age ( year)	Number	%age
20-30	20	20.0
31-40	67	67.0
> 40	13	13.0
Total	100	100.0
Mean $\pm$ SD	34.27 $\pm$ 6.45	

**Table-II. Distribution of cases by body mass index (BMI) (n=100)**

Age ( year)	Number	%age
< 20	68	68.0
20-26	32	32.0
Total	100	100.0

**Table-III. Distribution of cases by prior vaginal delivery (n=100)**

Prior vaginal delivery	Number	%age
Yes	79	79.0
No	21	21.0
Total	100	100.0

**Table-IV. Distribution of cases by labour ( n=100)**

Labour	Number	%age
Spontaneous	92	92.0
Induced	08	08.0
Total	100	100.0

Table-IV demonstrates distribution of cases by labour (spontaneous / induced). Most of the patients 92 (92.0%) had spontaneous on set of labour while in 8 (8.0%) of cases were induced.

Case distribution by use of syntocinon shows that in majority of the patients 86 (86.0%) no augmentation was required while 14 case (14.0%) were augmented with syntocinon.

Table-V gives details of cases by weight of baby. Maximum number i.e 96 (96.0%) weighed < 3.5kg while only 4 (4.0%) weight above 3.5kg.

## DISCUSSION

Current study was conducted during the six months period. Total 100 patients admitted in labour room of Services Hospital, appropriate for a trial of labour were included. It would be beneficial to predict which factors were most likely lead to a successful VBAC. A recently

Table-V. Distribution of cases by weight of baby (n=100)

Birth weight (Kg)	Number	%age
2.5-3	44	44.0
3.1-3.5	52	52.0
3.6-4.0	04	04.0
Total	100	100.0

growing body of literature on VBAC has produced concrete evidence to identify factors influencing success.

In this study most of the VBAC's were carried out before 40 years of age comparable to a study carried out by Flamm and Geiger showing the comparable results<sup>7</sup>.

In the current 2/3rd of patients who had successful vaginal delivery had BMI of < 20. This was also documented by a study in Columbia University, New York which showed maximum success rate of VBAC at BMI of > 19.8<sup>8</sup>. This shows that increasing BMI and excessive weight gain during pregnancy both decrease VBAC success.

In present study, 79 (79.0%) women who had VBAC had history of prior vaginal delivery. Similar results were obtained in a study carried out in Mount Sinai Medical Centre, New York showing 87% success rate in similar group of women<sup>9</sup>.

Non- recurrent indication for previous caesarean section such as breech presentation and fetal distress are associated with higher successful VBAC. This fact is supported by a university of Toronto Canada showing the same results<sup>10</sup>.

In current study it was shown that women presenting with established labour had a greater chance of successful VBAC i.e. 81.0%. My results coincides with a results of a study carried out by Flamm and Geiger which showed 86% success rate at cervical dilatation of > 4 cm<sup>7</sup>.

It was found in my study that spontaneous onset of labour and maintenance of labour were favorable factor for

vaginal delivery. 92% of cases had spontaneous onset of labour and in 86% of cases no oxytocin was used. This has also been supported by ACOG committee opinion in 2006<sup>11</sup>.

Fetal weight is an important factor predicting success of VBAC. In my study 96% of fetal weight was < 3.5 Kg and only 4% cases fetal weight was above 3.6 Kg. These results comparable to a study carried out in West Africa which showed that fetuses weighing > 3.5 Kg are less likely to have a successful vaginal delivery<sup>7</sup>.

The study results are also favoured by another study carried out in Pakistan which shows that favourable bishop's score, spontaneous onset of labour, and fetal weight less than 4kg predicts a successful outcome of trial of labour while poor bishop's score less than 4 and fetal weight more than 4kg predicts unfavourable outcome<sup>12,13</sup>.

## CONCLUSION

It is concluded from the study that BMI < 20, prior vaginal delivery, non-recurrent indication for previous caesarean, spontaneous onset of labour, cervical dilatation or favorable Bishop Score, weight of baby < 3.5 Kg predict an individual's likelihood of successful VBAC.

In this way the growing rate of caesarean was decreased by increasing the number of VBAC's undoubtedly one of the most important issue in modern obstetrics.

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Article received on: 26/03/2010

Accepted for Publication: 06/04/2010

Received after proof reading: 06/11/2010

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**Article Citation:**

Kashif S, Mansoor M, Tariq R, Tahira T. Vaginal birth caesarean section; To evaluate factors for successful outcome. Professional Med J Dec 2010;17(4):665-669.

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