"PREDICTION OF VAGINAL BIRTH AFTER CAESAREAN SECTION USING SCORING SYSTEM AT THE TIME OF ADMISSION FOR TRIAL OF LABOUR- A ONE YEAR PROSPECTIVE COHORT STUDY"

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This is to certify that the dissertation entitled "**PREDICTION OF VAGINAL BIRTH AFTER CAESAREAN SECTION USING SCORING SYSTEM AT THE TIME OF ADMISSION FOR TRIAL OF LABOUR- A ONE YEAR PROSPECTIVE COHORT STUDY**" is a bonafide research work done by **Reg. no.** BJ0115004,

Dr. M.B Bellad MD, FICOG
Professor & Head
Department of Obstetrics,
And Gynecology
J.N. Medical College
Nehru Nagar,
Belagavi- 590010

Dr. (Mrs.) Niranjana. S. Mahantshetti MD
Principal
J.N. Medical College
Nehru Nagar,
Belagavi- 590010

Date:
Place: Belagavi

Date:
Place: Belagavi

ABSTRACT

Objective

To assess prediction of successful trial of labor after primary caesarean delivery (TOLAC) by using a predictive scoring system at the time of labour.

Methods

A one year prospective cohort study was conducted in a Dr Prabhakar Kore teaching hospital attached to Jawaharlal Nehru Medical College Belagavi during the period of January 2016 to December 2016. Total of 960 women who underwent one primary caesarean section in the past were screened for the study. Among these 413 women were eligible for the study and 194 were willing to participate and recruited for the study and data was obtained by counseling them regarding TOLAC, its risks and benefits by using predictive scoring system at the time admission to labour in each one of them individually. Multivariable, stepwise logistic regression was utilized and analysed. P value < 0.05 was considered statistically significant. IBM SPSS version 22 was used for statistical analysis.

Results

Vaginal delivery attempted by 194 women, the rate of successful VBAC among these women was 43.29%, 56.70% ended in repeat caesarean delivery. A VBAC score was generated based on modified Bishop score (cervical examination) at the time of admission, with points added for previous history of vaginal birth, age younger than <35years, absence of recurrent indication, and pre- pregnancy BMI <30. Women with a VBAC score more than 11 had a TOLAC success rate >60%. Majority

of the women who had a previous breech indicated section underwent success of TOLAC by 67.44%. Symptomatic uterine rupture occurred in 0.1% women who underwent TOLAC. No perinatal morbidity or mortality is seen.

Conclusion

A trial of labour after one prior caesarean delivery should be encouraged in most of the women who are willing to attempt it, provided no obstetric contraindication exists. This study has generated a clinically useful scoring system for prediction of TOLAC success at the time of admission for the pregnancy after a primary cesarean delivery. Scoring system helps in prediction of successful VBAC. This information is relevant for counseling women about their choices after caesarean section.

Keyword: TOLAC, scoring system, prediction, counseling

ABBREVIATIONS

ACOG	-	American College of Obstetricians and Gynaecologists
NIH	-	National Institutes of Health
RCOG	-	Royal college of Obstetricians and Gynaecologists
LSCS	-	Lower segment caesarean section.
VBAC	-	Vaginal birth after caesarean.
TOLAC	-	Trial of labour after caesarean.
ERCS	–	Elective repeat caesarean section
SD	–	Standard deviation.
EFW	-	Expected Fetal Weight
ST	-	Scar Tenderness
CTG	-	Cadiotochography
NPL	-	Non Progress of Labour
CPD	-	Cephalopelvic disproportion
TMSL	-	Thick Meconium Stained Liquor
FT	-	Fetal Tachycardia
FD	-	Fetal distress
SD	-	Scar Dehiscence
CS	-	Cesarean Section
PROM	-	Premature rupture of membrane.

FM	-	Fetal Macrosomia
BMI	-	Body Mass Index
RMT	-	Residual myometrial thickness
AUC	-	Area under the curve
LMP	-	Last menstrual cycle
EDD	-	Expected date of delivery
APH	-	Antepartum haemorrhage
FGR	-	Fetal growth restriction
ROC	-	Receiver Operating Characteristice

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INTRODUCTION

There is an increasing trend of lower segment caesarean section (LSCS), of which repeat elective caesarean delivery is one it's most common indications. While there is increased maternal and perinatal morbidity associated with failure of trial of labour after caesarean delivery (TOLAC), a successful trial of VBAC reduces the risk of complications in future pregnancies associated with a repeat caesarean section. In an attempt to reduce the rate of caesarean delivery, a pregnant woman needs to be counseled regarding the risks and benefits of elective repeat cesarean section (ERCS) and a trial of labor after cesarean section (TOLAC) with the goal of achieving a vaginal birth after caesarean section (VBAC).

The rate of cesarean delivery over 21 years to 2014, the richest quintile–top 20% of the population by income–undergoing caesarean section deliveries in India has gone up from 10% to 30%, raising the country's average caesarean-section rates from 5% to 18% over the same period, according to a recent analysis of national health data. Although the rate of trial of labour has declined dramatically over the past several decades, the vaginal delivery rate after trial of labour has remained constant at approximately 74 percent[7]. Published success rates for risk of repeated caesarean section worldwide vary between 60 to 80 %.[8]

Neither elective repeat caesarean section (ERCS) nor TOLAC are without maternal or neonatal risks. Most maternal morbidity that occurs during TOLAC happens when repeat caesarean delivery becomes necessary. Thus, VBAC is associated with fewer complications, and a failed TOLAC is associated with more

complications, than ERCS. Consequently, risk for maternal morbidity is integrally related to a woman's probability of achieving VBAC[5].

Royal college of obstetricians and Gynecologists recommends that women be informed that, overall, the chances of successful planned VBAC are 72-76% and it also states that the advantage of vaginal birth after caesarean section (VBAC) compared to elective repeat caesarean section (ERSC) is the avoidance of potential future maternal complications of multiple caesarean deliveries. Also attempting vaginal birth after caesarean section reduces the risk of neonatal morbidity (rates are 2-3% with planned VBAC and 3-4% with ERCS). In addition, American college obstetricians and gynecologists states that most published series of women attempting TOLAC have demonstrated a probability of VBAC of 60-80% and it mentions that vaginal birth after caesarean section leads to avoidance of major abdominal surgeries resulting in lower rates of hemorrhage, infection and it also leads to shorter recovery period which is beneficial to the patient.[5]

Assessment of individual risks and assessing the probability of achieving a successful VBAC can make it easier to determine appropriate candidates for TOLAC. Majority of the scoring systems used to determine the same have used variables such as indication of previous caesarean section, Bishops score and history of VBAC in their screening tools. Some have used other factors like maternal age, weight, inter-delivery period, estimated fetal weight and history of term/preterm caesarean section[42]. In four studies, a cross-validation approach was also included[34,42,43,13]. The data in these studies was randomly divided to create a score development group and a validation group.

The decision to undergo TOLAC is an individual one that should be based on careful, thorough counselling of each patient. Maternal characteristics and obstetric history can provide the doctor a rough estimate of a patient's chance of a successful trial TOLAC. This same obstetric history can be used to estimate a patient's risk of uterine rupture[28].

The purpose of a screening tool is to help providers and patients to better identify who will have a VBAC (and who is more likely to have a repeat cesarean delivery [RCD]).

Increasing scores correlates with increasing probability of vaginal birth after caesarean. The admission vaginal birth after caesarean scoring tool may be useful in counseling regarding the option of trial of labour (TOLAC). The information regarding trial of labour could be particularly valuable for the women who opt but has second thoughts about her mode of delivery when labour begins.

American college of obstetrician and gynecologist and national institute of health suggested trial of labour after caesarean delivery (TOLAC) to attempt vaginal birth after caesarean section and recommended that it is an acceptable option for a woman who has undergone one previous caesarean delivery[6,7].

The women with a prior caesarean birth should be counseled in an unbiased manner regarding potential maternal and perinatal risks (most notably uterine rupture), as well as benefits of both TOLAC and ERCS.

Present study is to evaluate the relative strength of different variables which may influence the probability of trial of vaginal labour after single caesarean delivery with the aim of reducing the morbidity and mortality of repeated caesarean deliveries by validating a predictive score of success.

OBJECTIVES

To assess prediction of successful trial of labor after one primary caesarean delivery by using a predictive scoring system at the time of labour.

REVIEW OF LITERATURE

Trial of vaginal birth after caesarean section represents one of the most significant changes now a day. There is an increasing trend of lower segment caesarean section (LSCS), of which repeat elective caesarean delivery is one it's most common indications. While there is increased maternal and perinatal morbidity associated with failure of trial of labour after caesarean delivery (TOLAC), a successful trial of VBAC reduces the risk of complications in future pregnancies associated with a repeat caesarean section.

There are different scoring system has been led down by different researchers taking different parameters but none of these scoring has been accepted universally. Being able to improve the accuracy of predicting a successful VBAC at the time of admission may encourage more women to undergo VBAC thereby preventing the downstream morbidity associated with multiple caesarean deliveries, including increased operative risk and abnormal placentation[1].

The use of such a scoring system may enable the obstetricians and midwives to predict the chances for success in the individual patient and to evaluate the risks and benefits, thus improving outcome in a trial of labour after previous caesarean section.

Various studies have been done to know the success of TOLAC by considering different variables and scoring system.

In one of the four studies, a cross-validation approach was taken.[34,42,43,13] the data in these studies were randomly divided to create a score development group and a validation group. In a multi-centre prospective cohort study by Flamm,[34] 48 percent of women were assigned VBAC estimates either below 60 percent or greater than 80 percent suggesting that almost half of the women gained new information after the

screening. After being screened by the tool that included maternal age, prior vaginal delivery history, prior caesarean delivery indication, cervical effacement and dilation, 18 percent of women in the validation group had a less than 60 percent likelihood of VBAC which might discourage some of these women from attempting a TOL. Thirty percent of the women in the validation group had an estimated 87% likelihood of VBAC, which might prove to encourage more of these women to attempt a TOL.

In a retrospective study designed to predict risk of caesarean delivery for women at 40 to 42 weeks gestational age (GA),[42] 16.5 percent of women were assigned estimates of caesarean greater than 40 percent based on a screening tool that included maternal age, GA, induction method and gender of the infant. In the same study, 36 percent of women were assigned estimates of caesarean less than 20 percent, again suggesting that more than half of women gained knowledge after being screened.

The remaining two cross-validated studies[42,43] evaluated tools based on factors that are known before labor begins in women who delivered at term. In a retrospective study of a state-wide population database, women in this study with any of the following—recurrent cesarean delivery indication, history of a macrosmic infant, or current anemia—had a likelihood of VBAC of less than 55 percent. In the prospective cohort study,[42] women were screened based on maternal age, pre-pregnancy BMI, race, ethnicity, prior vaginal delivery history, and recurring indication for cesarean delivery. These factors were then used to create a graphical nomogram. This nomogram not only provided a point estimate for VBAC but also 95 percent confidence interval around the estimate. The authors present four case studies using the nomogram (two in which the women are assigned estimates in the expected range of 60 to 80 percent; and two in which the estimates are outside the quoted range). In

one case, a 25 year-old African American woman of pre-pregnancy body mass index (BMI) of 25, with a prior vaginal delivery and a prior VBAC, was assigned an estimate of VBAC of 92.4 percent (95% CI: 91.1 to 93.6 percent). In a second case, a 35 year-old white woman with a pre-pregnancy BMI of 30, with no prior vaginal delivery and a recurring cesarean indication received an estimate of 49 percent (95% CI: 46.1 to 51.9 percent).

A meta-analysis Study by ACOG in 2008, on Maternal morbidity following a trial of labor after cesarean section vs. elective repeat cesarean delivery, concluded that TOL has successful rate of 73%, and the incidence of maternal morbidity is similar in women experiencing a TOL and women choosing ERCs. Factors determining successful TOL were history of trial of labour in past, rupture of membrane at the time of admission, cervical dilatation of more than 3cm at the time of admission. Uterine injury occurs in 1.3% and 0.4% of women undergoing TOL and ERCS, respectively, and the risk of uterine lesions is 3-fold greater in patients planning TOL, compared with those undergoing ERCS. Additional interventions, in particular blood transfusion and hysterectomy, are performed with the same frequency in the two groups.[22]

In one of the study trial of labor (TOL) was initiated for 564 women of which 61% were successful while 39% delivered by an emergent cesarean section. In total, 346 women delivered vaginally (37%), 341 women (37%) delivered with an elective cesarean section and 238 (26%) underwent an emergency cesarean section. The VBAC rate increased during the study period, from 35% to 46%. Women who underwent an elective cesarean section due to fetal malpresentation (most often breech) in their first pregnancy were significantly more likely to have a successful VBAC in their second pregnancy (53%) compared with women who had an elective

cesarean section for any other indication (21%) ($p<0.0001$). Uterine rupture occurred in six women (1%) during TOL, five underwent an emergency cesarean section and had healthy infants while there was one intrapartum fetal death. No correlation was found between birth mode and Apgar scores at five minutes. Perinatal mortality rate was 5,4 per thousand. Trial of labor was less likely to succeed if the infant's birth weight was >4000 grams compared with <4000 grams ($p<0.01$)[44].

In this retrospective observational study, 162 women who had undergone successful trial of labour were analyzed to study the factors which contributed to successful trial of labour over a study period of one year. Maternal age, prior antenatal visits, prior obstetric history, neonatal weight and interconceptional period were studied with reference to outcome of VBAC. Success of VBAC when compared with prior indication for CS was studied. The role of instrumental deliveries for VBAC was analyzed. Maternal and perinatal mortality and morbidity were assessed. This study which is conducted in India concluded that VBAC can be successfully tried in all women with prior caesarean section by careful selection and employing simple predictive factors[45].

A Study on Vaginal Birth After Caesarean: New Insights in 2010 by Oregon Health & Science University, Portland, to review the trends and incidence of VBAC, maternal benefits and harms, infant benefits and harms, relevant factors influencing each and the directions for future research, concluded that overall rates of maternal harms were low for both Trail of labour (TOL) and elective repeat caesarean delivery (ERCD). While rare for both TOL and ERCD, maternal mortality was significantly increased for ERCD at 13.4 per 100,000 versus 3.8 per 100,000 for TOL. The rates of maternal hysterectomy, haemorrhage, and transfusions did not differ significantly between TOL and ERCD. The rate of uterine rupture for all women with prior

caesarean is 3 per 1,000 and the risk was significantly increased with TOL (4.7/1,000 versus 0.3/1,000 ERCD). Women with a prior caesarean delivery had a statistically significant increased risk of placenta previa compared with women with no prior caesarean. Perinatal mortality was significantly increased for TOL at 1.3 per 1,000 versus 0.5 per 1,000 for ERCD.[20]

In another study done in 2012, out of 8508 women who had history of one previous caesarean section 3113 underwent trial of labour after caesarean section. The results observed were that maternal neonatal morbidity decreased with increase of VBAC score and women undergoing TOLAC were likely to have more maternal morbidity than elective repeat caesarean section when predicted probability of VBAC < 60 percent. Conversely, maternal morbidity was not different between two groups when predicted probability of VBAC was at least 60%. Neonatal morbidity is similar in both the groups when the probability of VBAC success was 70% or more.[2]

In 2012 a cohort study conducted in Japan, total Seven hundred and twenty-five women who met the inclusion criteria had complete data available, of which 664 (91.6%) had VBAC. The predicted probability of VBAC, as calculated by the regression equation, was significantly higher in those who had a successful trial of labour (median 80.1%, interquartile range 71.5–88.7) than those who did not (median 69.4%, interquartile range 59.9–78.9, P<0.001. The predictive model had AUC of 0.80, which was comparative to the originally described one. When the predicted rates were each deciles of over 70%, the actual success rates were more than 90%[17].

In 2013 out of 5,445 women, 21.5% equating to 1170 underwent trial of labour. Out of these women who underwent trial of labour 80% (938) had successful vaginal birth after caesarean section (VBAC). A VBAC score was generated based on bishop score at the time of admission and certain extra points were added which were

- **History of vaginal birth**
- **Age<35 years**
- **Absence of recurrent indication**
- **BMI< 30**

This study concluded that women with VBAC score of < 10 had a likelihood of TOLAC success < 50 % and on the other hand women with VBAC score of >16 had a TOLAC success rate of > 85 % [1]

A case control study in 2013 on factors associated with success of vaginal birth after caesarean section (VBAC) at three teaching hospitals in Addis Ababa, Ethiopia concluded that factors determining successful TOL were history of trial of labour in past, rupture of membrane at the time of admission, cervical dilatation of more than 3cm at the time of admission. Meconium stained liquor, malposition, history of still birth were associated with failure of trial of labour (F-TOL). Factors like maternal age, past cesarean section, interdelivery interval, birth weight were not significant determinant for TOL.[18.]

In another study which was conducted in 2013, there were 131 women with one previous CS and a visible scar, of whom 10 underwent CS prior to labor and were excluded from analysis. Successful VBAC was achieved in 74/121 (61%) of the remaining cases. The prediction model developed was based on patient age, previous history of VBAC, residual myometrial thickness (RMT) and the change in RMT from the first to the second trimester (RMT). The internally validated area under the receiver–operating characteristics curve was 0.62 when measurements of RMT and RMT were excluded, but 0.94 when scar information was incorporated into the model[24].

A total of 132 patients were studied. Out of these 61 had successful VBAC and 72 went for emergency LSCS. Each patient was scored an admission based on a modified scoring system. The significance of individual parameters used in the scoring system in influencing outcome was analyzed and result that came out was the spontaneous onset of labour, history of previous VBAC, favourable bishops on admission and previous caesarean performed for indications other than dystocia or Cephalo Pelvic Dysfunction(CPD) were significantly associated with a successful VBAC. This study recommended that they have not achieved statistical significance in other studies. All these factors have thus not been collectively included in various screening.[3]

In one of the study, total 727 patients with previous one caesarean section, singleton gestation in vertex presentation and having adequate pelvis underwent trial of labour. Out of those 489 patients i.e. 67.26% delivered vaginally. [Including vacuum assisted delivery in 74 patient's i.e.10.18%] and 238 patients i.e. 32.74% required repeat caesarean section. When compared maternal complications following delivery in successful VBAC and repeat LSCS group, overall rate of need of blood transfusion, wound 57% infection, puerperal pyrexia, atonic PPH, blood loss, respiratory infections, postoperative morbidity and hospital stay was more in repeat caesarean section group.[15]

In a prospective cohort study, a total of 280 subjects with previous one cesarean section were enrolled. One hundred thirty-nine subjects consented for TOLAC, 90 (67%) underwent successful trial of vaginal birth, and 49 (32.8) required cesarean section. Cervical dilatation ($p < 0.0001$) and effacement ($p < 0.0001$), and any prior vaginal delivery ($p < 0.02$) were significantly associated with a successful outcome. At a cutoff score of 5, the sensitivity of the FLAMM score was 72% and

specificity was 76%. For the Grobman calculator, the best sensitivity (69%) and specificity (67%) were seen at a cutoff score of 85%[19].

Careful consideration on an individual basis is required to predict if VBAC will likely be successful. This study will be undertaken to provide a predicting scoring system to assess the likelihood of TOLAC in women with one prior caesarean and also aim in counseling and reducing the incidence rate of repeated caesarean section and its associated maternal and perinatal complications.

Various scoring system for TOLAC:

The TOLAC Risk Score for Successful Vaginal Delivery is a simple scoring system for use at labour admission to predict which patients will have a successful vaginal birth after prior caesarean section (VBAC). It includes different variables which can only be used after admission for labour. Although a TOLAC scoring model can predict the probability of vaginal birth, which is a key concern of women contemplating TOLAC versus ERCD, a variety of other factors also influence a woman's decision regarding route of delivery.

i) FLAMM model:

Maternal age < 40 years	No	0	Yes	+2
Vaginal birth history	Vaginal birth before and after first caesarean delivery	+4		
	Vaginal birth after first caesarean delivery	+2		
	Vaginal birth before caesarean delivery	+1		
	No previous vaginal birth	0		

Reason other than failure to progress for first caesarean delivery	No	0	Yes	+1

Cervical effacement at admission	> 75%	+2
	25-75%	+1
	< 25%	0

Cervical dilation ≥ 4 cm at admission	No	0	Yes	+1

- This model includes cervical assessment which can only be used after admission for labour.
- A high VBAC Risk Score predicts success, but a low score does not necessarily predict failure; clinical judgment should be always considered.
- At a cutoff score of 5, the sensitivity of the FLAMM score was 72% and specificity was 76%.
- Determining which labouring patients are likely to have successful or unsuccessful vaginal delivery would be helpful for labour planning and shared decision making.
- FLAMM concluded that increasing scores correlate with increasing probability of vaginal birth after caesarean. The admission vaginal birth after caesarean scoring system may be useful in counselling patients regarding the option of vaginal birth or repeat caesarean delivery. This information could be particularly valuable for the patient who opts for trial of labour but has second thoughts about her mode of birth when labour begins.

II) SCORING SYSTEM OF FLAMM AND GEIGER

Flamm and Geiger developed a scoring system which can be used to predict the chances of vaginal delivery following a caesarean section in a pregnant woman admitted in labour. This can help identify patients who may be candidates for a trial of labour. The authors are from the Kaiser Permanente Medical Centre in Riverside, California[34].

Parameter	Finding	Points
woman's age	< 40 years of age	2
	>= 40 years of age	0
vaginal birth history	before and after first cesarean section	4
	after first cesarean section	2
	before first cesarean section	1
	None	0
reason for first cesarean section	failure to progress	0
	other reason	1
cervical effacement on admission	> 75%	2
	25 - 75%	1
	< 25%	0
cervical dilation on admission	< 4 cm	0
	>= 4 cm	1

Total Score = SUM (points for all 5 parameters)

Interpretation:

• minimum score: 0

• maximum score: 10

• The higher the score the more likely the woman can be delivered vaginally.

Total Score	Probability VBAC
<= 2	49%
3	60%
4	67%
5	77%
6	87%
7	93%
>= 8	95%

3) WEINSTEIN SCORE:

FACTORS	NO	YES
Bishop score (>4)	0	4
Vaginal delivery before CS	0	2
Grade A: Malpresentation, pre-eclampsia,twins	0	6
Grade B: APH, prematurity, PROM	0	6
Grade C: Fetal distress, CPD, failure to progress, cord accident	0	5
Grade D: Macrosomia, FGR	0	3

.Using such score will enable to anticipate and predict the success chances for the individual mother, to evaluate risk and benefits of VBAC and to increase the possibility of better outcome in trial of labour to mother and child[46].

INTERPRETATION:

SCORE	Chances of VBAC in percentage
>4	58
>6	67
>8	78
>10	85
>12	88

Weinstein concluded that trial of labour after one caesarean section should be encouraged in most women who are willing to attempt it, provided no obstetric contraindication exists. A scoring system that may help to identify women with a greater chance for vaginal delivery is proposed.

METHODOLOGY

The present study was conducted in the Department of Obstetrics and Gynecology, Dr Prabhakar Kore teaching hospital attached to Jawaharlal Nehru Medical College, Belagavi.

Study design

The study design was a prospective cohort study

Study period

The study was conducted during the period from 1st January 2016 to 31st December 2016

Source of data

Women with one previous LSCS in labour admitted to labour room, who meet with inclusion criteria and willing to participate were enrolled in the study. Women were counseled about the option of TOLAC with the predictive score and its success.

Sample size- A total of 194 pregnant women were included in the study.

SELECTION CRITERIA

Inclusion criteria–

- One previous lower segment caesarean section with or without previous history of vaginal delivery.
- Single viable fetus.
- Vertex presentation.
- Gestational age >/= 37 weeks.

- Present with spontaneous onset of labour.

Exclusion criteria –

- Not willing to participate.
- Not willing for VBAC
- Not a candidate for VBAC.
- Any indication for elective caesarean section in the current pregnancy related to fetal mal-presentation, placenta previa or any other maternal complications such as pre-eclampsia, diabetic mellitus.

Ethical clearance

Prior to the commencement, the study was approved by the Ethical and Research Committee, Jawaharlal Nehru Medical College, Belgaum

(Annexure 3 -Letter number MDC/DOME/393 dated 19/11/2015)

Informed consent

All the participants fulfilling the selection criteria were explained about the purpose of the study and a written informed consent in their own vernacular language was obtained from all the participants before enrolment

Method of collection of data

Women who fulfilled the criteria were counselled regarding their options for delivery after one primary caesarean section. To describe the care of patients for whom TOLAC is determined to be an appropriate option.

When patients who have had a previous caesarean section present to labour room with true labour pains, they are counselled regarding appropriate options for delivery. Gravidity, parity, abortion and preterm labour also history the previous caesarean as; spacing between previous CS and current pregnancy, indication of previous CS, Intra-partum or postpartum complications, and wound healing. Present

obstetric history such as; last menstrual period, and gestational age were taken. Discussion begins at the time of admission and should be completed by 37 weeks gestation, when possible. Women with one previous LSCS admitted to labour room, who meet with inclusion criteria and willing to participate will be enrolled in the study.

Integer scoring was applied on women who gave consent for TOLAC. Labour was monitored by partogram. Fetal condition was assessed using the Cardio-Toco Graphy. Fetal and maternal condition during the first stage of labour was assessed every 30 minutes. Uterine contractions “intensity, duration, and frequency” were assessed every 30 minutes. The modified bishop score was calculated using the first digital cervical examination at the time of admission by a resident (second-year or third-year resident in a university-based program), attending physician.

Fetal monitoring by CTG was done for each studied women throughout labour, under the supervision of the on duty obstetrician. Termination of vaginal birth trial done if fetal distress, non progress of labour, fetal tachycardia or scar dehiscence were suspected. In active stage of labour oxytocin was used. In second stage of labour, prophylactic vacuum was applied to cut short the second stage of labour. Active management of third stage of labour as per WHO guidelines was done to each patient. Any postpartum complications were recorded.

Women were explained about the option of TOLAC with the predictive score (integer score) and its success.

The variables included in our own original model are;

VARIABLES	POINTS
❖ Bishop score at admission	0-13
❖ BMI at the admission < 30	4
❖ Not a recurrent Indication of primary caesarean delivery	3
❖ Age <35yrs	2
❖ Uterine contraction.	YES/NO
Sum total score:	

The variables included in the model were selected based on predictors of successful VBAC previously reported in the literature.

Maternal and neonatal assessment was done after labour and signs denoting complications were reported and recorded.

Points were assigned to these characteristics, with weighting based on the coefficients in the regression model to calculate an integer VBAC score. The VBAC score was correlated with TOLAC success rate and was externally validated in an independent cohort using a logistic regression model.

STATISTICAL ANALYSIS

The data obtained was coded and entered into Microsoft Excel Worksheet. The data was analysed using chi-square test and with Yates's correction. The categorical data was expressed in terms of percentage and continuous data was expressed as mean ± standard deviation (SD). P value equals to or less than 0.005 were considered to be significant. A logistic regression model of the probability of VBAC success was estimated with calculated VBAC score as the only predictor.

Descriptive analysis: Descriptive analysis was carried out by mean and standard deviation for quantitative variables, frequency and proportion for categorical variables. Data was also represented using appropriate diagrams like bar diagram, pie diagram and box plots.

Inferential statistics:

Quantitative outcome;

The association between categorical explanatory variables and quantitative outcome was assessed by comparing the mean values. The mean differences along with their 95% CI were presented. Independent sample t-test/ ANOVA/Paired t- test was used to assess statistical significance. Association between quantitative explanatory and outcome variables was assessed by calculating person correlation coefficient and the data was represented in a scatter diagram.

Categorical outcome:

The association between explanatory variables and categorical outcomes was assessed by cross tabulation and comparison of percentages. Odds ratio along with 95% CI is presented. Chi square test was used to test statistical significance.

P value < 0.05 was considered statistically significant. IBM SPSS version 22 was used for statistical analysis.(1)

RESULTS

The present one year prospective cohort study was conducted in the labour room of KLE'S Dr. Prabhakar Kore Hospital and Medical Research Centre, Belgaum during the period of January 2016 to December 2016.

Of 413 women studied, 194 attempted TOLAC and 84 (43.29%) had a successful VBAC.

The ability of VBAC score in predicting successful VBAC was assessed by Receiver Operating Curve (ROC) analysis. To assess the relative strength of association of individual components of VBAC score with successful VBAC, multivariate Binary logistic regression was performed. The adjusted odds ratio of each component with its 95% CI and P- value was presented.

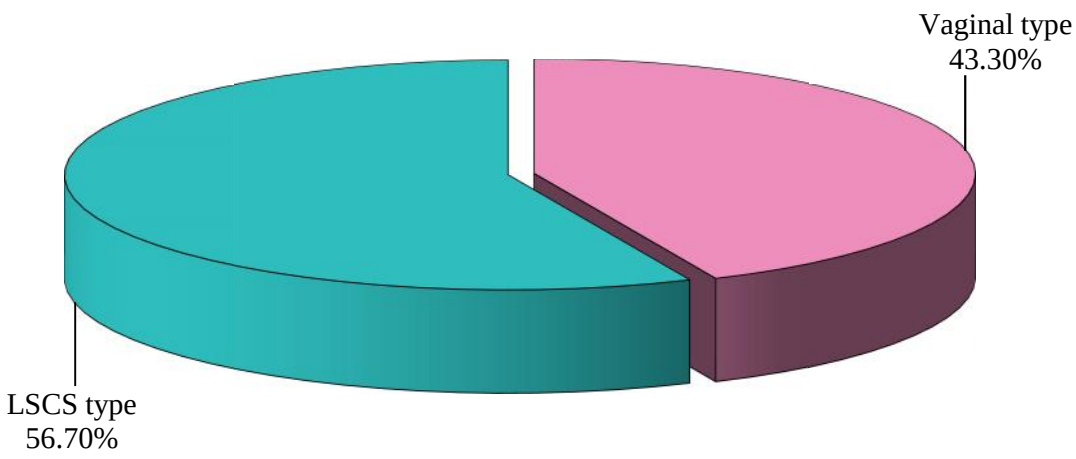
The data obtained was coded and entered into Microsoft Excel spreadsheet. P value < 0.05 was considered statistically significant. IBM SPSS version 22 was used for statistical analysis.(1)

1 Machines IB. IBM SPSS Statistics for Windows, Version 22.0. IBM Corp Armonk, NY; 2013.

Table: 1 Types of delivery (Vaginal and LSCS) wise distribution

Types of delivery	No of cases	% of cases
Vaginal type	84	43.30
LSCS type	110	56.70
Total	194	100.00

Figure: 1 Types of delivery (Vaginal and LSCS) wise distribution

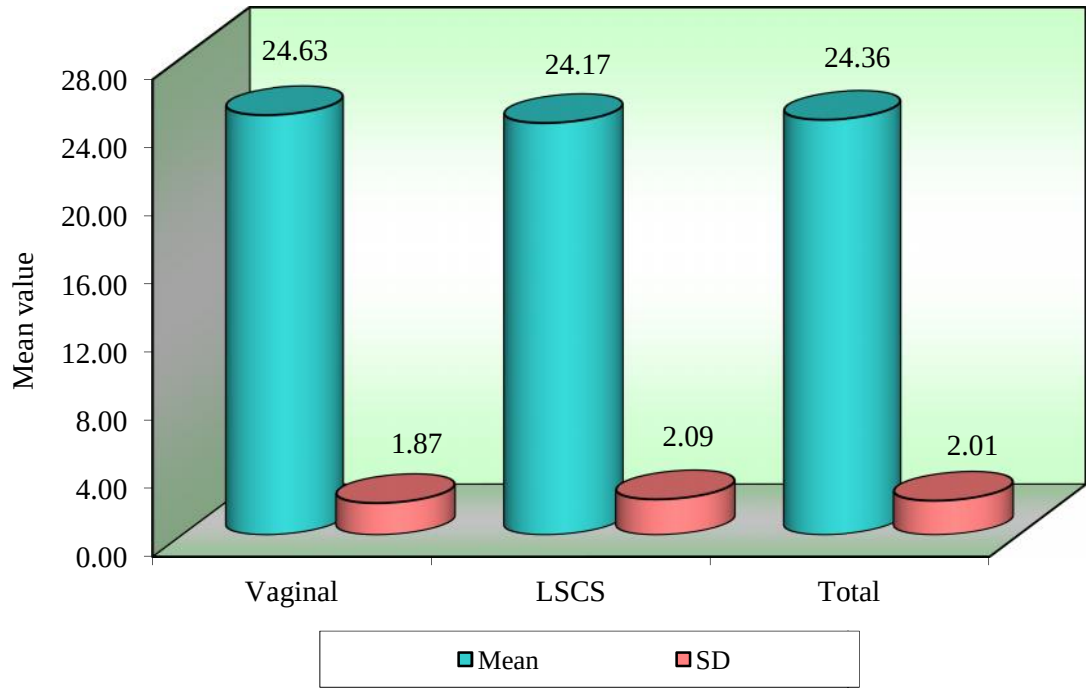


In the present study, women who attempted for vaginal delivery were 194, among them successful TOLAC i.e VBAC were 43.30% and repeat LSCS were 56.70%.

Table: 2 Comparison of types of delivery (Vaginal and LSCS) with mean maternal age by t test

Types of delivery	Mean	SD	SE	CV
Vaginal	24.63	1.87	0.21	7.60
LSCS	24.17	2.09	0.20	8.64
Total	24.36	2.01	0.14	8.23
t-value	1.5851			
P-value	0.1146			

Figure: 2 Comparison of types of delivery (Vaginal and LSCS) with mean maternal age

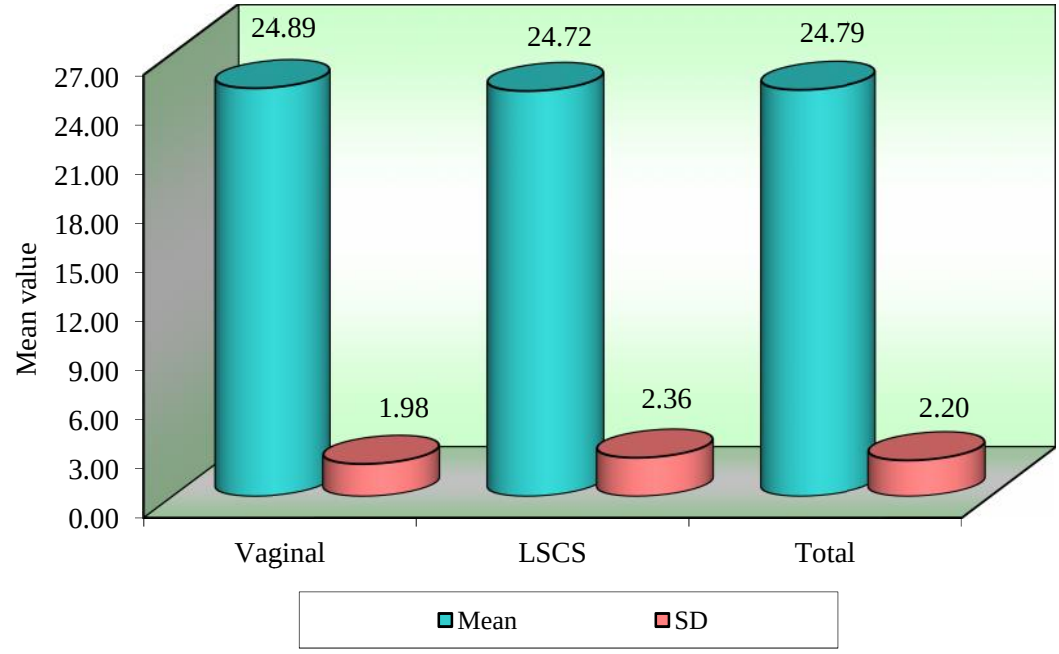


Mean age of the patients who had a VBAC was 24.63 ± 1.87 and women who had a repeat C section were 24.17 ± 2.09. There was no correlation of successful VBAC with maternal age (p=0.1146)

Table: 3 Comparison of types of delivery (Vaginal and LSCS) with mean BMI by t test

Types of delivery	Mean	SD	SE	CV
Vaginal	24.89	1.98	0.22	7.94
LSCS	24.72	2.36	0.23	9.56
Total	24.79	2.20	0.16	8.87
t-value	0.5471			
P-value	0.5850			

Figure: 3 Comparison of types of delivery (Vaginal and LSCS) with mean BMI



The mean BMI of women who had a successful VBAC was 24.89 ± 1.98 and those who underwent repeat cesarean section was 24.72 ± 2.36. The effect of BMI in predicting a successful TOLAC was not statistically significant (p=0.5850).

Table: 4 Comparison of types of delivery with gestational age

Gestational age	VBAC	%	Repeat C section	%	Total	%
37^0-37^6	14	16.67	13	11.81	27	13.92
38^0-38^6	22	26.19	33	30.00	55	28.35
39^0-39^6	32	38.09	33	30.00	65	33.51
40^0-40^6	12	14.28	25	22.73	37	19.07
41^0-41^6	4	4.76	6	5.45	10	5.15
Total	84		110			100.00
Chi-square =3.8034 P = 0.4331						

80.95% of women with VBAC had a gestational age <40 weeks as compared to 71.8 % of women with repeat C section.

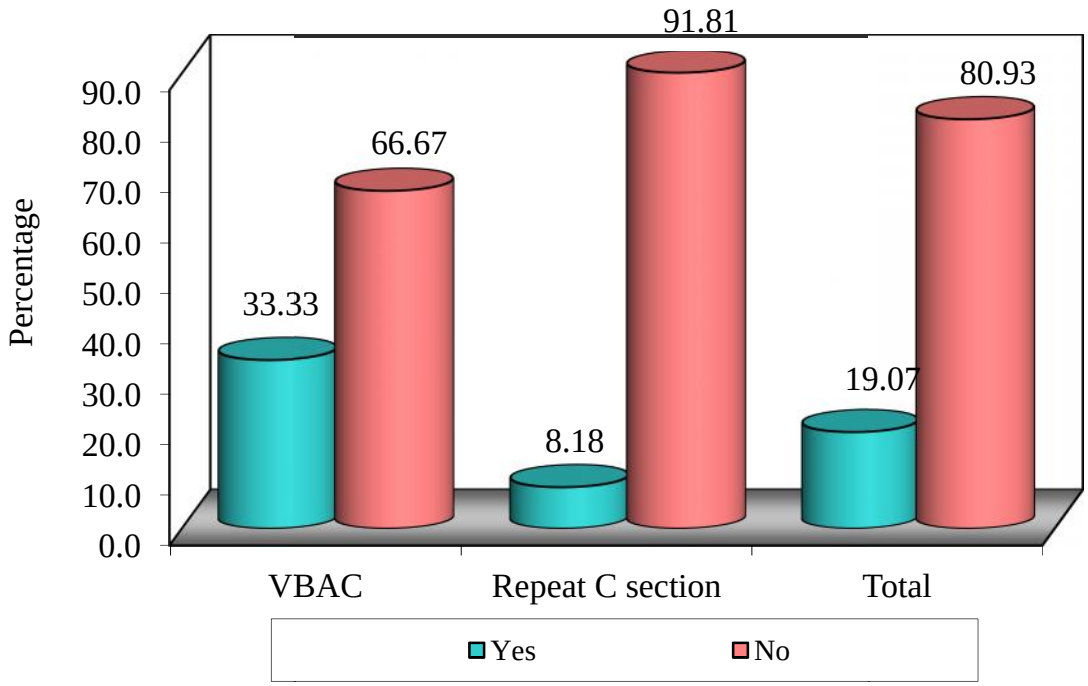
Gestational age as a variable in the predictive scoring system was not statistically significant in predicting the success of TOLAC. (p=0.4331)

Table: 5 Comparison of types of delivery (Vaginal and LSCS) with previous history of vaginal birth

History of vaginal birth	Vaginal	%	LSCS	%	Total	%
Yes	28	33.33	9	8.18	37	19.07
No	56	66.67	101	91.81	157	80.93
Total	84		110		194	100.00
Chi-square= 19.5212 P = 0.0001*						

*p<0.05

Figure: 4 Comparison of types of delivery with previous history of vaginal birth



Out of the 84 women who underwent VBAC previous history of vaginal birth was present in 28(33.33%) women and it was only present in 9(8%) women who underwent repeat C section.

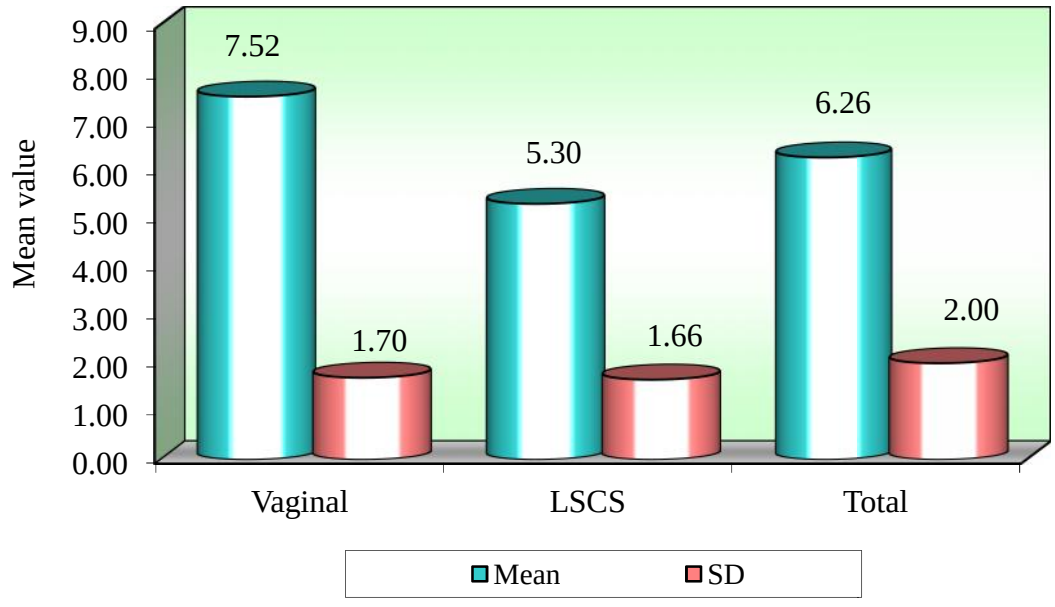
In this study previous history of vaginal birth has a significant correlation in predicting the success of TOLAC. (p=0.0001)

Table: 6 Comparison of types of delivery (Vaginal and LSCS) with mean BISHOP scores by t test

Types of delivery	Mean	SD	SE	CV
Vaginal	7.52	1.70	0.19	22.55
LSCS	5.30	1.66	0.16	31.36
Total	6.26	2.00	0.14	32.01
t-value	9.1509			
P-value	0.0001*			

*p<0.05

Figure: 5 Comparison of types of delivery (Vaginal and LSCS) with mean BISHOP scores



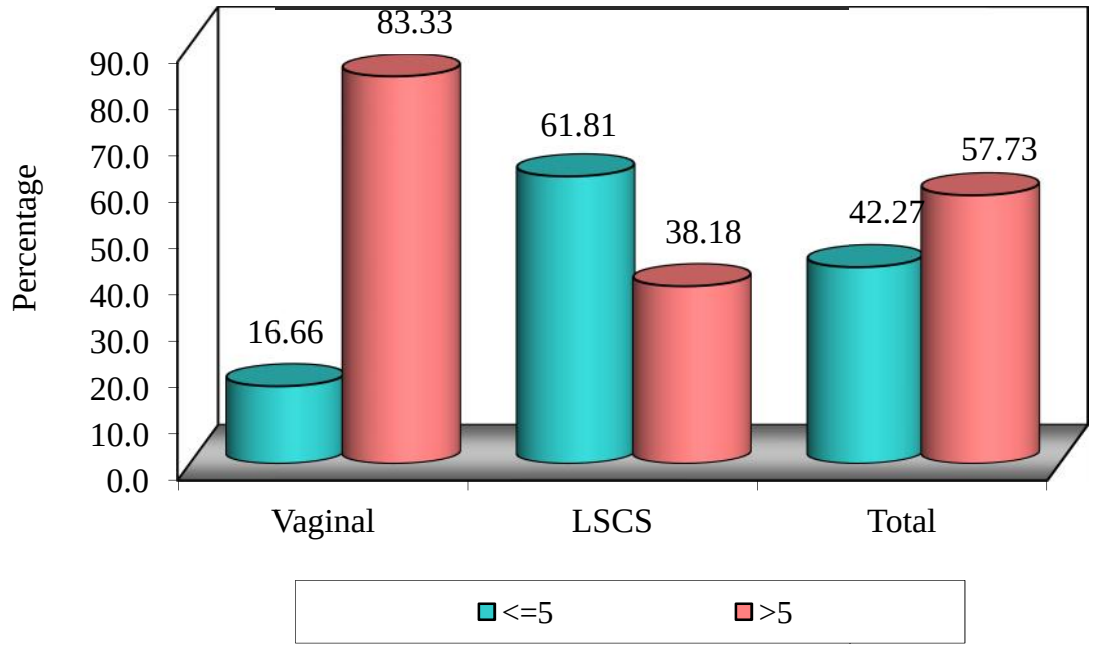
The mean BISHOP score in the VBAC group was 7.52±1.70 and in the women with repeat LSCS it was 5.30± 1.66.

Table: 7 Comparison of types of delivery (Vaginal and LSCS) with BISHOP score levels

BISHOPE score levels	Vaginal	%	LSCS	%	Total	%
<=5	14	16.66	68	61.81	82	42.27
>5	70	83.33	42	38.18	112	57.73
Total	84		110		194	
Chi-square= 39.7914 P = 0.0001*						

*p<0.05

Figure: 6 Comparison of types of delivery (Vaginal and LSCS) with BISHOP score levels



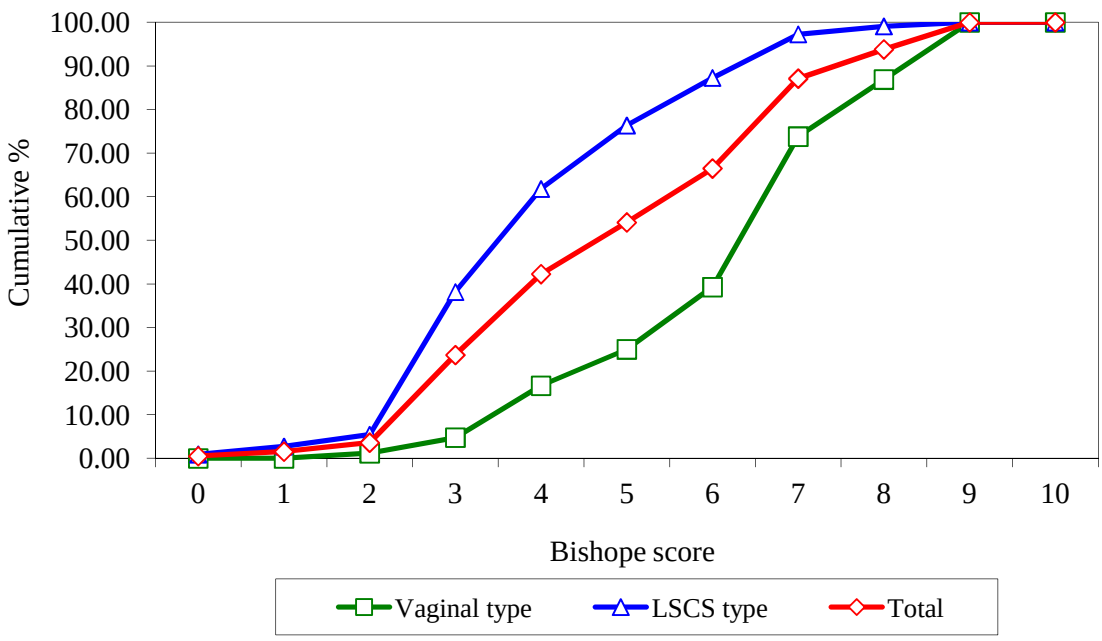
Out of the total 194 women in the study, 42.27 % had a bishop score of <5 and 57.73% had a bishop score of >5.

84 women who had a VBAC, 70(83.33%) had a BISHOP score of >5. In contrast out of 110 women who underwent a repeat cesarean section only 42(38.18 %) had a BISHOP score of >5 whereas 82 (61.81%) had bishop score of <5. BISHOP score was a significant variable in predicting the success of TOLAC. (p=0.0001).

Table: 8 Comparison of types of delivery (Vaginal and LSCS) with BISHOP score levels

BISHOP score	Vaginal	%	LSCS	%	Total	%
0	0	0.00	1	100.00	1	0.52
2	0	0.00	2	100.00	2	1.03
3	1	25.00	3	75.00	4	2.06
4	3	7.69	36	92.31	39	20.10
5	10	27.78	26	72.22	36	18.56
6	7	30.43	16	69.57	23	11.86
7	12	50.00	12	50.00	24	12.37
8	29	72.50	11	27.50	40	20.62
9	11	84.62	2	15.38	13	6.70
10	11	91.67	1	8.33	12	6.19
Total	86	39.27	133	60.73	219	100.00

Figure: 7 Comparison of types of delivery (Vaginal and LSCS) with Cumulative % BISHOP score in the study



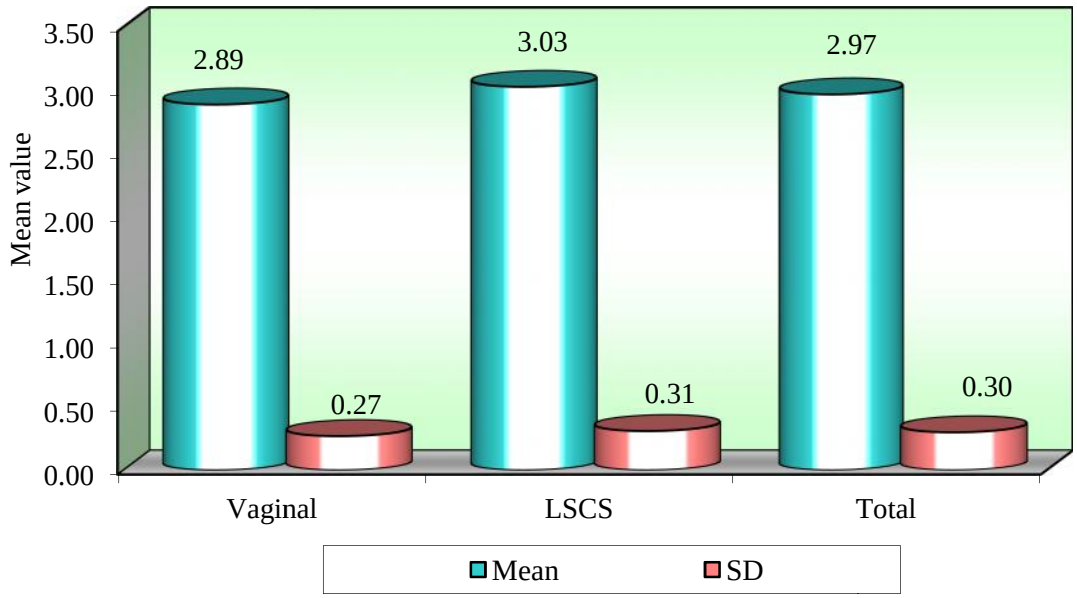
Comparison of observed predicted vaginal birth (VBAC) rates in an independent cohort study. For each decile of predicted probability, the red line indicates total number of women who were included in the study, the green line shows vaginal type of delivery with bishop score levels and the blue line shows the LSCS type by cumulative percentage curve. Women having Bishop score of 0-3 had 13 times less chance of VBAC compared with Bishop score 0f 6-10.

Table: 9 Comparison of types of delivery (Vaginal and LSCS) with mean EFW scores by t test

Types of delivery	Mean	SD	SE	CV
Vaginal	2.89	0.27	0.03	9.42
LSCS	3.03	0.31	0.03	10.08
Total	2.97	0.30	0.02	10.07
t-value	-3.3024			
P-value	0.0011*			

*p<0.05

Figure: 8 Comparison of types of delivery (Vaginal and LSCS) with mean EFW scores

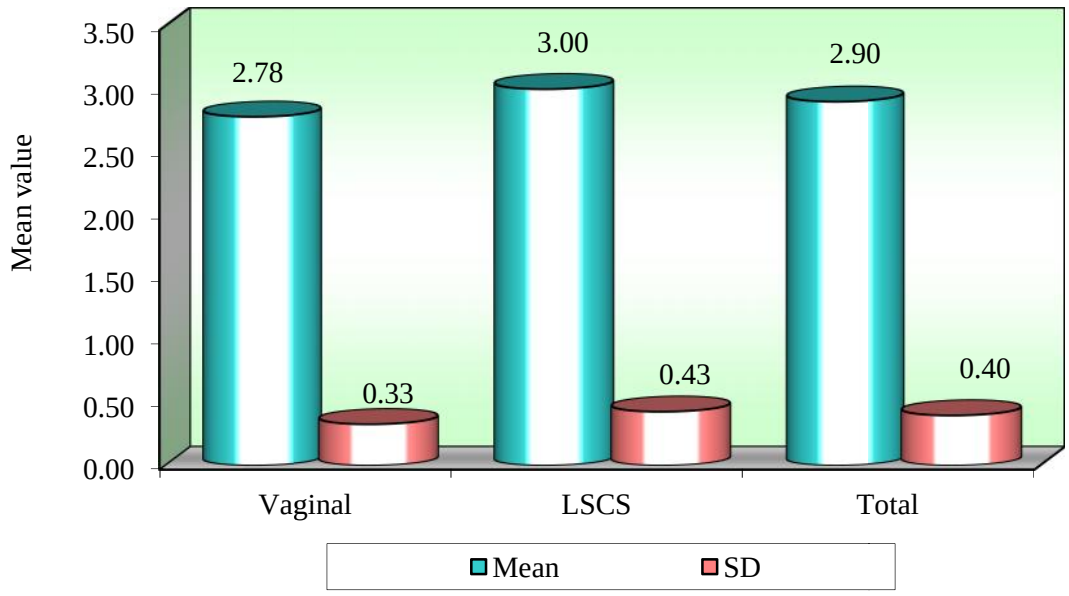


The Expected Fetal Weight (EFW) in the VBAC pregnancies was 2.89 ± 0.27 whereas in the repeat Cesarean section women it was 3.03 ± 0.31. The association of EFW with the mode of delivery was statistically significant.(P<0.0011)

Table: 10 Comparison of types of delivery (Vaginal and LSCS) with mean birth weight by t test

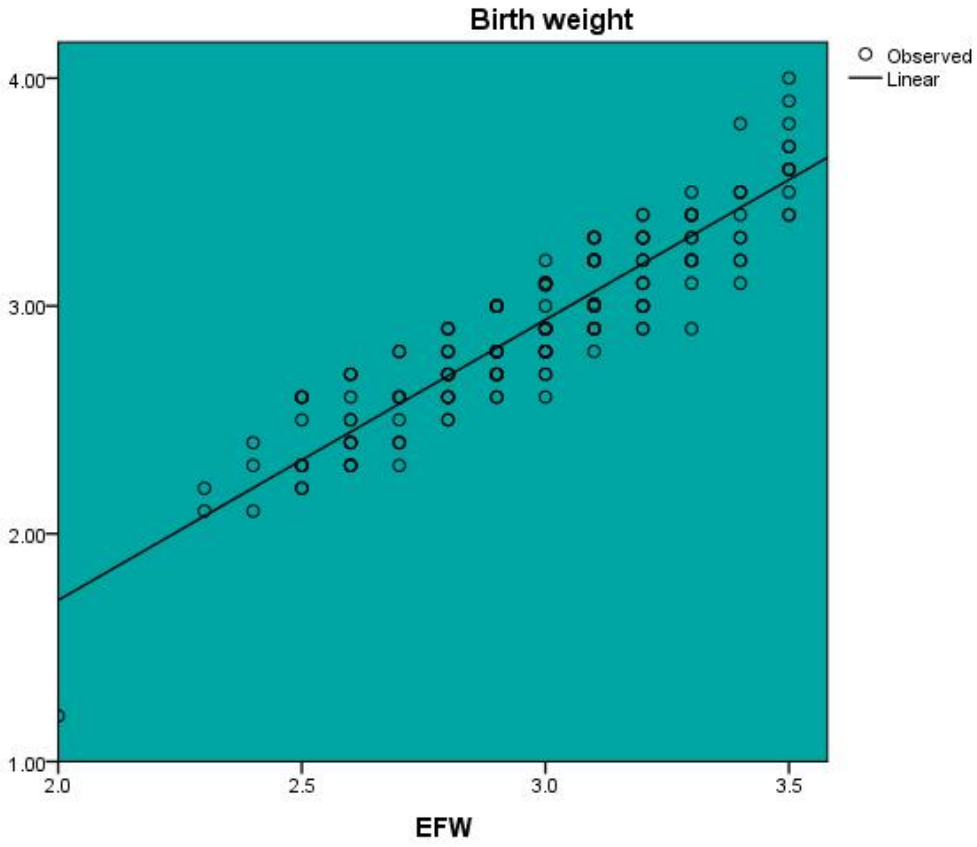
Types of delivery	Mean	SD	SE	CV
Vaginal	2.78	0.33	0.04	11.83
LSCS	3.00	0.43	0.04	14.24
Total	2.90	0.40	0.03	13.84
t-value	-3.9355			
P-value	0.0001*			

Figure: 9 Comparison of types of delivery (Vaginal and LSCS) with mean birth weight



The mean birth weight in VBAC was 2.78 ± 0.33 and in the repeat C section pregnancies it was 3.00 ± 0.43. The difference between the two groups was statistically significant in predicting the success of TOLAC with a lower mean birth weight associated with higher success of TOLAC. (p=0.0001)

Figure: 10. Correlation between EFW and Birth weight (N=194)



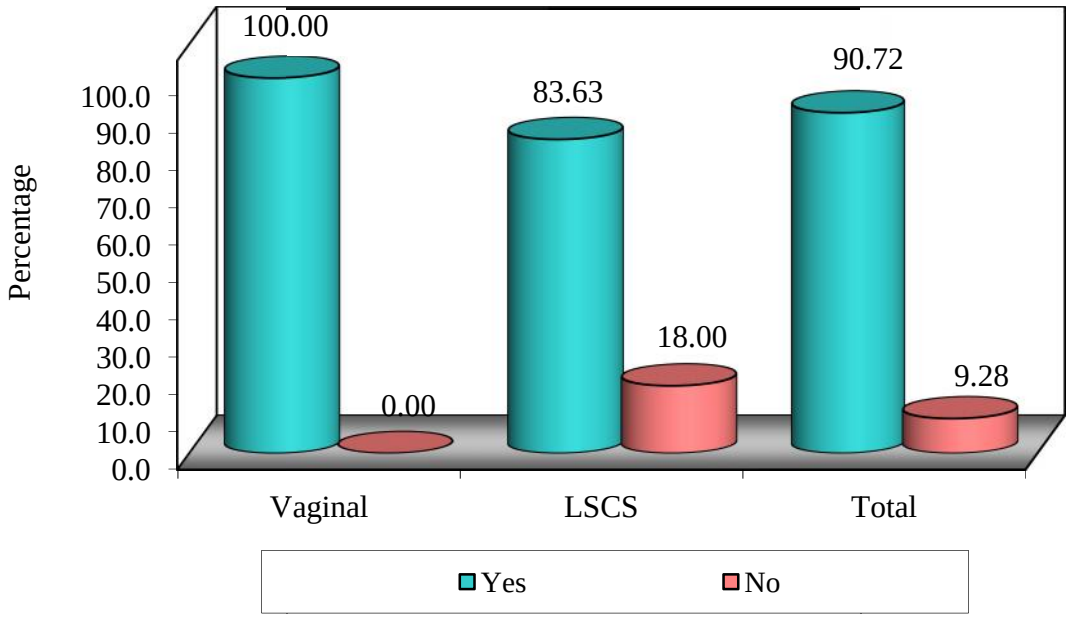
There is strong positive correlation between EFW and Birth weight which was statically significant (r-value 0.916, p-value <0.001)

Table: 11 Comparison of types of delivery (Vaginal and LSCS) with uterine contraction

Uterine contraction	Vaginal	%	LSCS	%	Total	%
Yes	84	100	92	83.63	176	90.72
No	0	0.00	18	16.36	18	9.28
Total	84		110		194	100.00
Chi-square= 15.151 P = 0.0001*						

*p<0.05

Figure: 10 Comparison of types of delivery (Vaginal and LSCS) with uterine contraction

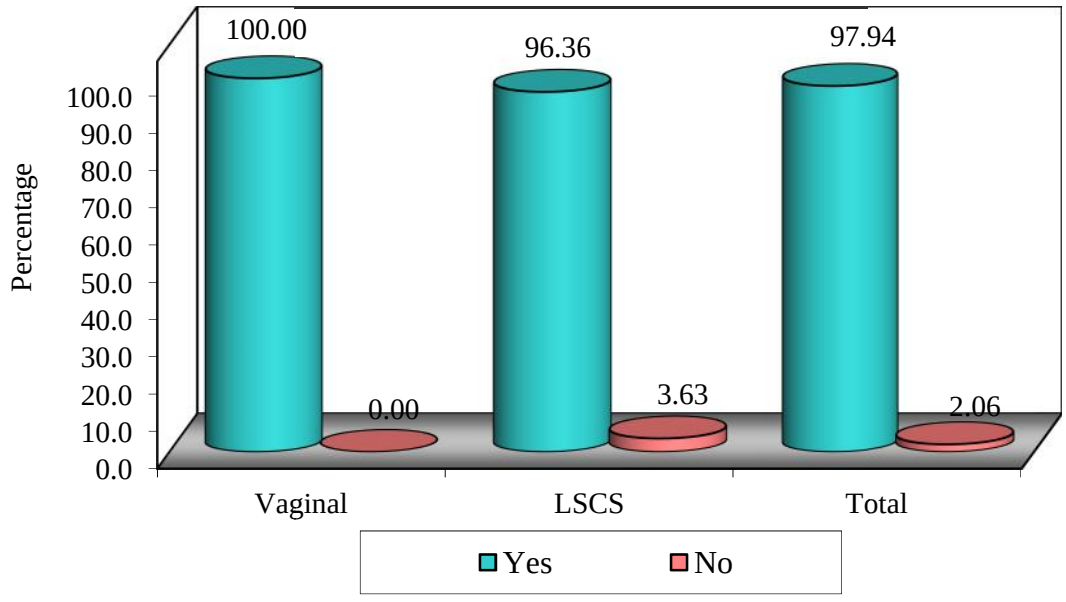


Uterine contractions were present in all 84(100%) women with VBAC whereas it was present in 92 (83.63%) women who had a repeat C section. The difference in proportion of women across the two groups with respect to the uterine contractions was statistically significant in predicting the success of TOLAC. (p=0.0001)

Table: 12 Comparison of types of delivery (Vaginal and LSCS) with favourable cervix

Cervix is favourable	Vaginal	%	LSCS	%	Total	%
Yes	84	100	106	96.36	190	97.94
No	0	0.00	4	3.63	4	2.06
Total	84		110		194	100.00
Chi-square with Yates's correction = 3.0124 P = 0.0830						

Figure: 12 Comparison of types of delivery (Vaginal and LSCS) with uterine contraction

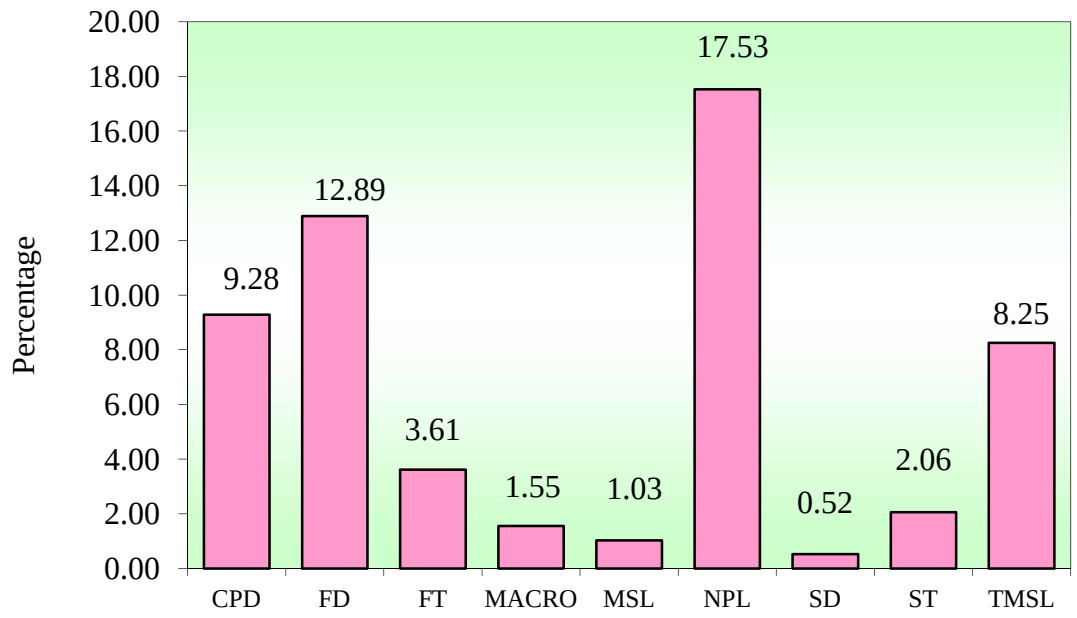


100% of women with VBAC had a favourable cervix and 96.36% of women with repeat LSCS had a favourable cervix. The association of a favourable cervix with the mode of delivery was statistically insignificant. (p=0.0830)

Table: 13 Indications of previous LSCS in repeat LSCS

Indications of Previous LSCS	No	%
CPD	18	9.28
FD	25	12.89
FT	7	3.61
MACRO	3	1.55
MSL	2	1.03
NPL	34	17.53
SD	1	0.52
ST	4	2.06
TMSL	16	8.25

Figure:13 Indications of LSCS in LSCS type



The most common indication for previous LSCS in the patients who underwent repeat LSCS was Non Progress of labour (17.53%) followed by Fetal Distress in 12.89%. Indications for previous LSCS were not significantly related with mode of delivery, but females who had non progress of labour had 3.1 times less chance of having a successful TOLAC compared with women who had previous LSCS due to breech and fetal distress .

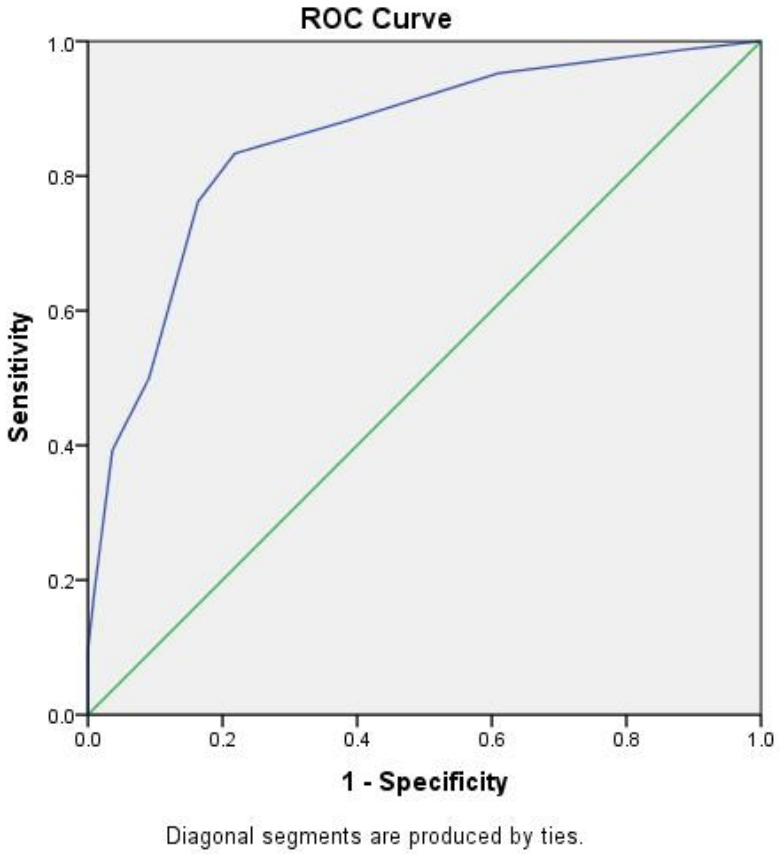
Table: 14 Comparison of types of delivery (Vaginal and LSCS) with previous LSCS indications

Previous LSCS indications	Vaginal	%	LSCS	%	Total	%
BREECH	29	67.44	14	32.56	43	22.16
CPD	7	19.44	29	80.56	36	18.56
FD	6	23.08	20	76.92	26	13.40
FI	6	33.33	12	66.67	18	9.28
FM	0	0.00	1	100.00	1	0.52
FT	1	100.00	0	0.00	1	0.52
MACRO	0	0.00	3	100.00	3	1.55
MSL	3	37.50	5	62.50	8	4.12
NPL	19	57.58	14	42.42	33	17.01
OLIGO	3	50.00	3	50.00	6	3.09
PPROM	0	0.00	1	100.00	1	0.52
PROM	5	71.43	2	28.57	7	3.61
TMSL	5	50.00	5	50.00	10	5.15
TRANSLIE	0	0.00	1	100.00	1	0.52
Total	84	43.30	110	56.70	194	100.00

Out of the total 194 women in our study population, 43 women in which breech was an indication for the Primary Cesarean section, majority of them (67.44%) underwent successful TOLAC.

Out of 36 women who had a CPD indicated Primary Cesarean section only 7 (19.44%) had a successful TOLAC whereas 29 (80.56%) had a repeat C section.

Figure: 14 Predictive validity of VBAC score in predicting successful VBAC (ROC analysis)



Test Result Variable(s): VBAC score				
Area Under the Curve (AUC)	Standard error	P-value	95% Confidence Interval of AUC	
			Lower Bound	Upper Bound
0.853	0.028	<0.001	0.798	0.908

The VBAC score had good predictive validity in predicting successful VBAC, as indicated by area under the curve of 0.853 (95% CI 0.798 to 0.908, p value <0.001)

Table: 15 Association of Successful VBAC with VBAC score category of study population (N=194)

VBAC score category	Successful VBAC		Chi square	P value
	Yes	No		
VBAC (13.5 and above)	70 (83.33%)	24 (21.82%)	72.162a	<0.001
VBAC (up to 13.49)	14 (16.67%)	86 (78.18%)		

Among people with successful VBAC, 70 (83.33%) had a VBAC score of 13.5 and above and 14 (16.67%) had VBAC score up to 13.49. The difference in VBAC score category proportion between successful VBAC and unsuccessful VBAC was statically significant. (P-value <0.001)

Table: 16 Predictive validity of Successful VBAC as compared to VBAC score category (N=194)

Parameter	Value	95% CI	
		Lower	Upper
Sensitivity	83.3%	75.36%	91.3%
Specificity	78.2%	70.46%	85.9%
False positive rate	21.8%	14.10%	29.5%
False negative rate	16.7%	8.70%	24.6%
Positive predictive value	74.5%	65.65%	83.3%
Negative predictive value	86.0%	79.20%	92.8%
Diagnostic accuracy	80.4%	74.83%	86.0%

Sensitivity of VBAC score of 13.5 or more in predicting successful VBAC was 83.3% (95 CI 75.36% to 91.3%), Specificity of was 78.2% (95 CI 70.46%_ 85.9%). The false positive and false negative rates were 21.8% (95 CI 14.10% to 29.5%) and 16.7 %(95 CI 8.70% to 24.6%) respectively. Positive predictive value was 74.5% (95 CI 65.65% to 83.3%), negative predictive value was 86% (95 CI 79.2% to 92.8%), and the total diagnostic accuracy was 80.4% (95 CI 74.83%_ 86%).

Table: 17 Multivariate logistic regression analysis of individual components of VBAC score with successful VBAC

Parameters	Adjusted Odds ratio	95% C.I.for EXP(B)		P value
		Lower	Upper	
Maternal age	1.057	.882	1.267	0.547
BMI	1.024	.871	1.204	0.771
Bishop score	2.037	1.639	2.532	<0.001
History of vaginal birth	4.726	1.851	12.066	<0.001

After controlling effect of other values in the equation, History of previous vaginal birth is strongly associated with successful VBAC the odds of which were 4.726 (95% CI 1.581 to 12.066, P value < 0.001) followed by Bishop Score 2.037(95% CI 1.639 to 2.532, P value < 0.001), BMI 1.024(95% CI 0.871 to 1.204, P value 0.771) and Maternal age 1.057(95% CI 0.882 to 1.267, P value 0.547) respectively. Symptomatic uterine rupture occurred in 0.1% women who underwent TOLAC. No perinatal morbidity or mortality is seen.

DISCUSSION

A review by Kaimal et al. [49] highlighted that most women would like to be involved in decision-making about mode of birth.[49] Also; women expressed their wish for personalised information. Hence, implementation of a predictive model could provide this tailored information by allowing estimation of the risk of emergency CS and the related risk of fetomaternal morbidity.[2,50] The ideal predictive model would distinguish between a successful intended VBAC and a failed intended VBAC by polarising the cohort into two groups: women with a very high predicted probability and women with a very low predicted probability of achieving a VBAC.

A number of TOLAC prediction models have been developed, some of which incorporate the cervical examination. However, many of these models do not use variables available at the time of admission or were not created using a regression model. We have developed and validated a simple prediction model based on the modified Bishop score at the time of admission to more accurately counsel women regarding their chances of successful VBAC. The one year prospective cohort study was conducted during the period of 1stJanuary 2016 to 31st December 2016 in the labour room of Dr. Prabhakar Kore teaching Hospital JNMC Belgaum and a total of 194 pregnant women fulfilling the inclusion criteria were recruited for the study.

The most recently published scoring system for use at the time of admission by Grobman et al has utilized data from the Maternal-Fetal Medicine Units Network and it includes several other variables such as a history of VBAC and ethnicity. Although useful and reproducible, this model is somewhat complicated. Our model on the other hand is simple to use at the time of admission and performed comparably.

Our data is in agreement with that of Grobman et al, in that they indicate that data available at the time of admission improve the ability to predict VBAC success.

In the current study women who attempted for vaginal delivery were 194, among them successful TOLAC were 43.30% and repeat LSCS were 56.70%.

For VBAC prediction in the previous studies among the various demographic predictors that have been evaluated, the strongest evidence was found for ethnicity and race. As ethnicity and race was uniform in our study population so these factors could not be assessed.

Average age of the patients in the current study who had a VBAC was 24.63 and it was 24.17 in those undergoing repeat caesarean section. There was no correlation of successful VBAC with maternal age (p=0.1146). In the study by Eden KB et al that examined the association between maternal age and VBAC an inverse relationship was reported i.e. older women are less likely to have a VBAC.[48] Majority of the other studies however concluded that maternal age is not a successful predictor of VBAC.

Other maternal characteristics that can modify the likelihood of VBAC are maternal BMI and presence of medical conditions. In this study the mean maternal pre pregnancy BMI did not predict the success of TOLAC. In a study done in 2011 by Division of Maternal-Fetal Medicine, Department of Obstetrics, Gynecology and Reproductive Sciences, USA, it showed that increasing maternal body mass index (BMI) at first prenatal visit or at delivery decreases the probability of VBAC. Each unit increase in BMI at first prenatal visit decreases the likelihood of VBAC (OR 0.94; 95% CI 0.93–0.95). Also in the study by Landon MB et al[47] nonobese women

(BMI<30 kg/m2) when compared to women with a BMI greater than or equal to 30 kg/m2 at delivery had much lower odds of VBAC (OR 0.55; 95% CI 0.51–60).

In our study previous history of vaginal birth has a significant correlation in predicting the success of TOLAC. In line with this observation previous studies consistently report that women with a history of vaginal delivery have a higher likelihood of VBAC than women who do not have prior vaginal deliveries. Elkousy MA et al [51] in their study concluded that the probability of VBAC for women without history of vaginal delivery was 65%, women with prior vaginal delivery preceding cesarean had an 83% probability of achieving VBAC.[51] Also in a recent meta analysis by Eden KB et al that examined predictors of VBAC, they similarly reported that prior vaginal delivery increases the odds of VBAC by more than threefold (odds ratio [OR] 3.41; 95% confidence interval [CI] 2.56–4.54) [20]. Similar studies indicate that VBAC has a >90% success rate if there have been prior vaginal births [29,31,32]. .Among patients with a prior VBAC, the success rate of TOLAC is 93%, compared with 85% in patients with a vaginal delivery prior to their caesarean birth but no prior VBAC[28].

We used Modified Bishop score at admission in our scoring system and found it to be a significant factor influencing VBAC. Cervical factors, in terms of dilatation and effacement have been studied together and individually in studies and have been found to be useful in predicting vaginal birth [52] .It is seen that cervical effacement before induction of labour was associated with a successful vaginal delivery. Flamm[34] demonstrated that a cervical dilation of greater than 4 cm increases the chance of VBAC. Bishops score has already been identified by many researchers as a significant predictor of outcome and is used in scoring tools to predict outcome of pregnancies with previous LSCS [(46,53)] .Weinstein et al [46] conducted a ten year retrospective cohort

and concluded the bishops score >4 ,was the strongest and most significant predictor for a successful vaginal birth after caesarean section. A favorable cervix increased the chances of successful vaginal birth by a factor of 6 after adjusting for confounding variables. Bujold et al[53] found that a bishop score of more than 6 increased the likelihood of vaginal birth by 2 times. In our study 83.33% of women with successful VBAC had a Modified Bishop score of >5 and it was a significant variable in predicting the success of TOLAC.

In the present study, the commonest indication for a previous C Section was breech. The success rate of VBAC in these cases was 67.44%. Similary in previous studies it was observed that when the caesarean was performed for nonrecurrent indications, such as fetal malpresentation or breech, the probability of VBAC was approximately 75%. [(40,20,54-56)] Studies by Jansen et al[37] and Phelan et al[62] have reported similar results. After a study was published by Shipp TD et al it was estimated that women with a previous caesarean for malpresentation carry a risk of repeat caesarean delivery that is similar to a nulliparous woman's risk of primary caesarean in labour: the estimated odds of repeat caesarean delivery is 0.95 (95% CI 0.7–1.30).[57]

In our study out of 36 women who had a CPD indicated Primary Caesarean section only 7 (19.44%) had a successful TOLAC whereas 29 (80.56%) had a repeat C section. Although previous caesarean for nonrecurring indications as discussed earlier is a favorable predictor of VBAC, it seems that the probability of achieving VBAC is lower if prior indication of caesarean was related to cephalopelvic disproportion.[(48,20)] More specifically, when failure to progress/active phase arrest, labor dystocia, arrest of descent, or cephalopelvic disproportion were the indications of previous caesarean, the likelihood of VBAC is about 54% (48%–60%).[48] The

likelihood of VBAC is around 60% (49%–69%) if fetal intolerance of labor/fetal distress was the reason for prior cesarean.[48] Thus, compared with previous caesarean performed for nonrecurring indications (such as malpresentation/ breech), women whose previous caesarean was performed for recurring indications had lower odds of achieving VBAC (adjusted OR [aOR] 0.42–0.8; 95% CI 0.3–0.6).

Among 110 (56.70%) who underwent repeated LSCS most of them are due to non progress of labour followed by fetal distress (non reassuring CTG). Similar study conducted in 2013, at Maharashtra, India the rate of repeat caesaraen section was 15% and commonest indication was fetal distress. Phean et al[62] and Dayal V[38] reported a lower (15%) rate of fetal distress requiring CS.

Other obstetric factors (gestational age at delivery, birth weight) have been shown to modify the likelihood of VBAC. Gestational age in our study did not predict the success of TOLAC. Previous studies that have examined gestational age as a predictor of VBAC, varied in study design but the overall trend was that, as gestational age increases, the likelihood of VBAC is decreased, particularly when the pregnancy progresses beyond 41 weeks' gestation.[48] Out of 194 women in our study, 80.95% of women with VBAC had a gestational age <40 weeks as compared to 71.8 % of women with repeat C section. Overall the majority of females in who underwent VBAC or repeat C section the gestational age was more than 39 weeks and less than 40 weeks. In a study by **A. Hammoud** et al on effect of gestational age it was observed that in patients with advanced gestational age (≥41 weeks) the rate of uterine rupture was significantly higher (0% vs. 1.0% vs. 2.7%, p=0.006) and the rate of successful vaginal deliveries was significantly lower (83% vs. 76.9% vs. 62.6%, p<0.001). After adjusting for confounding variables, advanced gestational age was

associated with a lower rate of successful vaginal delivery and a higher rate of uterine rupture when compared to 37–40 weeks 6 days[27].

The mean birth weight in VBAC was 2.78 ± 0.33 and in the repeat C section pregnancies it was 3.00 ± 0.43. The difference between the two groups was statistically significant in predicting the success of TOLAC with a lower mean birth weight associated with higher success of TOLAC. Similarly studies conducted by Gyamfi C et al, Landon MB et al, Zelop CM et al , have shown that Infant birth weight is a strong predictor: as infant birth weight increases, the likelihood of VBAC decreases such that, for women whose infant weighed more than 4000 g, the probability of VBAC was reduced by 39% to 51% relative to that of women who had smaller infants.[30,58,59] Also a meta-analysis that examined 5 studies reported that women whose infant weighed more than 4000 g had nearly half the likelihood of VBAC (OR 0.55; 95% CI 0.49–0.61). However, infant birth weight is not known before delivery, and estimating fetal weight in the third trimester is notoriously challenging and inaccurate.([60,61)

In this study the expected fetal weight (EFW) significantly forecasted the chances of VBAC. The mean EFW in LSCS is more than in VBAC.

The American college of Obstetricians and Gynaecologists (ACOG), estimated the risk of uterine rupture in women with a previous CS and concluded that the lower segment caesarean scar has a minimum risk (0.2-1.5%) of rupture during vaginal delivery. There was no maternal mortality in the present study, but there was o.1% of uterine rupture and o.1% had obstetric complication. There were 5 cases of scar dehiscence in our study. Similar Cases with scar dehiscence were managed by CSs. Obara et al[63]. Reported two cases of ruptured uterus (0.93%) in their study of

214 cases of a previous CSs. Phelan *et* [62]. reported scar dehiscence in 1.9% cases and uterine rupture in 0.3% cases. Dayal V[38]reported a higher rate (4.2%) of scar ruptures. Palerme GR and Freidman EA *et al*. reported that the incidence of uterine rupture was 2.2% with classical CS, 1.3% with lower segment caesarean and 0.07% with lower segment transverse scar.

Study	Sample Size (N)	No. of Uterine Ruptures (Rate)
Miller (1994)	10,880	63 (0.6%)*
Flamm (1994)	5,022	39 (0.8%)
McMahon (1996)	3,249	10 (0.3%)
Shipp (1999)	2,912	28 (1%)
Landon (2004)	17,898	124 (0.7 %)
Macones (2005)	13,331	128 (0.9%)
Present study	194	1 (0.1%)

Given the available evidence, trial of labor is a reasonable option for many pregnant women with one prior low transverse uterine incision. The data presented in our study show that both trial of labor and elective repeat cesarean delivery for a

pregnant woman with one prior transverse uterine incision have important risks and benefits. It is important that women understand the spectrum of risks and benefits of trial of labor and elective repeat cesarean delivery, given the evidence that providing such information has a significant impact on a woman's ability to make an informed choice about whether or not trial of labor is a reasonable option for her. Several studies suggest that how risk is presented and communicated by providers has a powerful effect on women's decisions. Along these same lines, the 1999 College guideline urged, "After thorough counseling that weighs the individual benefits and risks of VBAC, the ultimate decision to attempt this procedure or undergo a repeat caesarean delivery should be made by the woman and her physician." So it is important to support pregnant women with one prior transverse uterine incision to make informed decisions about trial of labor compared with elective repeat cesarean delivery. Information, including risk assessment, should be shared with the woman at a level and pace that she can understand. When trial of labor and elective repeat cesarean delivery are medically equivalent options, with the aid of a validated predictive scoring system such as the one used in our study , a shared decision making process should be adopted and, whenever possible, the woman's preference should be honored.

Limitations

1. The key limitation of the study is selection of study subjects by non-random sampling, as per the convenience. This would have introduced some element of selection bias, the direction, and magnitude of which is difficult to estimate
2. The obstetric population in our study is relatively homogeneous (mostly Caucasian, married, insured), which may favor the performance of our model when compared with previously created models. It also may limit the generalizability to more heterogeneous and high-risk populations.
3. Also we were unable to account for physician counseling, labor management, or patient preference. There were many women who chose an elective repeat cesarean delivery even though they would be considered good candidates for TOLAC. Some of these women presented in spontaneous labor with a favorable cervical examination. If anything, inclusion of these women in the development of the prediction models would make a favorable cervix seem less predictive of successful TOLAC and likely would falsely lower the calculated AUC.

FUTURE RECOMMENDATIONS

1. Our prediction model is most applicable in women with a favorable or unfavorable cervical examination at the time of admission to the labor and delivery unit and allows for more directed TOLAC counseling, rather than quoting a general population-based 60–80% chance of success. These methods can be applied to other populations to establish region-specific prediction models in the country, and they can be applied prospectively to determine success in a population committed to TOLAC.
2. The appropriate use and safety of cesarean and VBAC should be of concern not only at the individual patient and clinician level but they also have far-reaching publichealth and policy implications at the national level. So national policies should be made to promote VBAC.
3. The decision on route of delivery for women with prior cesarean delivery is particularly challenging and complex for patients, providers, and decisionmakers. Patients and providers are influenced by the short- and long-term benefits and risks of route of delivery as well as family obligations, costs, societal norms, and regional availability of options. Although the numbers of studies on VBAC are numerous, the numbers of studies providing high quality information on important clinical questions are limited. The ideal study design for an intervention such as TOL versus ERCD would be a randomized controlled trial, none has been done, so there is a need for a multicentered RCT comparing both .

CONCLUSION

Trial of labour after one prior caesarean delivery should be encouraged in most of the women who are willing to attempt it, provided no obstetric contraindication exists. Primary outcome of this study has generated a clinically useful scoring system for prediction of TOLAC success at the time of admission for the pregnancy after a primary caesarean delivery. Scoring system helps in prediction of successful VBAC. Secondary analysis of this data were analysed its maternal and perinatal outcome.

This information is relevant for counselling women about their choices after caesarean section. The admission scoring system that may help to identify women with greater chances for vaginal delivery is proposed. There is also agreement that the discussion of her attitudes towards the risk and her personal motivation and preferences to achieve VBAC.

SUMMARY

This one year case control study was conducted in the Department of Obstetrics and Gynecology, Dr. Prabhakar Kore teaching hospital JNMC, Belagavi during the period of January 2016 to December 2016. The present study has generated a clinically useful scoring system for prediction of TOLAC success at the time of admission for the pregnancy after a primary caesarean delivery. The admission scoring system that may help to identify women with greater chances for vaginal delivery is proposed.

1) There were high rates of successful VBAC in our study. Women who attempted for vaginal delivery were 194, among them successful VBAC was 43.30%.
2) In our study previous history of vaginal birth had a strong association to the predictive ability of VBAC score.
3) 83.33% of women having a successful VBAC had a BISHOP score of >5. In univariate analysis BISHOP score was significant in predicting the success of TOLAC. Women having Bishop Score of 0-3 had 13 times less chance of VBAC compared with Bishop score 0f 6-10.
4) The presence of uterine contractions also was significant in predicting the success of TOLAC. 100% of women with a successful VBAC had presence of uterine contractions.
5) Among the other factors studied the expected fetal weight and infant birth weight were factors that strongly influenced the outcome i.e a succesfull TOLAC. Higher birth weight resulted in lower success of TOLAC.
6) Other factors like gestational age; ‘favorable cervix’; maternal age and pre pregnancy BMI were insignificant when used as variables for prediction of successful TOLAC.

7) The most common indication of Previous LSCS in patients who underwent repeat C section was Non Progress of Labour followed by Fetal Distress
8) 67.44 % of women who had a previous breech indicated C section had a successful VBAC. However only 19.44 % of previous CPD indicated C section had a successful VBAC.
9) Among 56.70% of our study population who underwent repeat LSCS most of them were due to non progress of labour followed by fetal distress.
10) The integer VBAC score developed to predict the success of TOLAC for each woman had a good predictive validity in predicting successful VBAC, as indicated by area under the curve of 0.853.
11) 83.33% of women with successful VBAC had a VBAC score of 13.5 and above.
12) Sensitivity of VBAC score of 13.5 or more in predicting successful VBAC was 83.3%, Specificity of was 78.2%, Positive predictive value was 74.5%, negative predictive value was 86% ,the total diagnostic accuracy was 80.4%
13) Symptomatic uterine rupture occurred in 0.1% women who underwent TOLAC. No perinatal morbidity or mortality is seen.

BIBLIOGRAPHY

1. Torri D. Metz, Gegory J. Stoddard, Eric Henry, Marc Jackson, Calla Holmgren, Sean Esplin. Simple validated vaginal birth after caesarean delivery prediction model for use at the time of admission. ACOG 2013, vol 122, NO 3:571-8.
2. Nil Chaillet, Emmanuel Bujold, Eric Dube, William A. Grobman. Validation of a prediction model for predicting the probability of morbidity related to a trial of labour in Quebec. JCOG 2012;349:820-825
3. Harikiran Narang, Seema Singhal, V. Ravi. Assessment of factors individually and a scoring system in predictive screening for VBAC in patients undergoing TOLAC. ISOR, p-ISSN 2014; VOL 13, issue 10:109-115.
4. Gonen R, Tamir A, Degani S, Ohel G. Variables associated with successful vaginal birth after one cesarean section: a pro- posed vaginal birth after Cesarean score. Am J Perinatol 2004; 21:447–53.
5. National guidelines clearinghouse: vaginal birth after caesarean : Jan 2011
6. ACOG updates recommendations on vaginal birth after previous caesarean delivery Am Fam Physician 2011 Jan 15;83(2) : 215-217
7. National Institute of Healthy Consensus Development Conference statement: vaginal birth after caesarean:new insights. Obstet Gynecol.2010; 115(6):1279-1295.
8. Predicting successful intended vaginal delivery after previous caesarean section: external validation of two predictive models in a Dutch nationwide registration-based cohort with a high intended vaginal delivery rate ENC Schoorel,S Melman,SMJ van Kuijk,WA Grobman et al June 2014;121(7): 840–847

9. Trial of Labor after Cesarean (TOLAC) for Vaginal Birth after Previous Cesarean Section (VBAC) Versus Repeat Cesarean Section; A Review.Shadi Rezai[1]*, Meghan Labine[2] et al July 2016: 4(6): 00135.

10. Ugwumadu A (2005) Does the maxim "once a Caesarean, always a Caesarean" still hold true? PLoS Med 2(9): e305.

11. Hibbard JU, Gilbert S, Landon MB, Hauth JC, Leveno KJ, et al. (2006) Trial of labor or repeat cesarean delivery in women with morbid obesity and previous cesarean delivery. Obstet Gynecol 108(1): 125-133.

12. Wells CE, Cunningham FG (2015) Choosing The Route of Delivery After Cesarean Birth. Up to Date.

13. Smith GC, White IR, Pell JP, Dobbie R (2005) Predicting cesarean section and uterine rupture among women attempting vaginal birth after prior cesarean section. PLoS Med 2(9): e252.

14. VBAC scoring: successful vaginal delivery in previous one caesarean section in induced labour.Raja JF, Bangash KT, Mahmud G, 2013 Sep;63(9):1147-51

15. Vaginal birth after previous cesarean section (VBAC) - Newer insights Vijay Chandrakant Pawar1 , Chandrika S. Kodla et al May 2015

16. Jodie MD, Caroline AC, Janet EH, Ross RH and Jeffrey SR. Birth after caesarean study – planned vaginal birth or planned elective repeat caesarean for women at term with a single previous caesarean birth: protocol for a patient preference study and randomised trial. BMC Pregnancy and Childbirth 2007;7:17-25

17. Yokoi A, Ishikawa K, Miyazaki K, Yoshida K, Furuhashi M, Tamakoshi K. Validation of the Prediction Model for Success of Vaginal Birth after Cesarean

Delivery in Japanese Women. *International Journal of Medical Sciences*. 2012;9(6):488-491. doi:10.7150/ijms.4682

18. Malede B and Yirgu G. Factors associated with success of vaginal birth after one caesarean section (VBAC) at three teaching hospitals in Addis Ababa, Ethiopia: a case control study. BMC Pregnancy and Childbirth 2013;13:31
19. Predicting Successful Trial of Labor After Cesarean Delivery: Evaluation of Two Scoring Systems Mayur Dilipbhai PatelNandita Maitra*The Journal of Obstetrics and Gynecology of India* July 2017.
20. Guise J-M, Eden K, Emeis C, Denman MA, Marshall N, Fu R, Janik R, Nygren P, Walker M, McDonagh M. Vaginal Birth After Cesarean: New Insights. Evidence Report / Technology Assessment No.191. AHRQ Publication No. 10-E003. Rockville, MD: Agency for Healthcare Research and Quality. March 2010.
21. Maternal and Perinatal Outcomes Associated with a Trial of Labor after Prior Cesarean Delivery Mark B. Landon, M.D., John C. Hauthet al N Engl J Med 2004; 351:2581-2589.
22. Cristina R and Vincenzo D. Maternal morbidity following a trial of labor after cesarean section vs elective repeat cesarean delivery: a systematic review with meta analysis. American Journal of Obstetrics &Gynecology (see for journal abbreviation) 2008;199:224-31
23. VidyadharBB , Purushottam AG , Kunaal KS, and Satyajit PG. Vaginal Birth after Cesarean Section. N Am J Med Sci.2013; 5: 140–44.
24. Predicting successful vaginal birth after Cesarean section using a model based on Cesarean scar features examined by transvaginal sonography O. NAJI*†, L. WYNANTS‡§, A. SMITH* et al Ultrasound Obstet Gynecol 2013; 41: 672–678

25. Srinivas SK, Stamilio DM, Sammel MD, Stevens EJ, Peipert JF, Odibo AO, Macones GA.Vaginal birth after caesarean delivery: does maternal age affect safety and success? Paediatric and Perinatal Epidemiology 2007; 21: 114–120.

26. Cheng YW, Eden KB, Marshall N, Pereira L, Caughey AB, Guise J-M. Delivery After Prior Cesarean: Maternal Morbidity and Mortality. *Clinics in perinatology*. 2011;38(2):297-309. doi:10.1016/j.clp.2011.03.012.

27. The effect of gestational age on trial of labor after Cesarean section A. Hammoud, I. Hendler, R. J. Gauthier, S. Berman, A. Sansregret & E. Bujold Jul 2009:202-206.

28. Vaginal Birth After Cesarean Delivery**.** Aaron B Caughey,Carl V Smith Dec 2015.

29. International Federation of Gynecology and Obstetrics (FIGO) (2009) Committee for the Ethical Aspects of Human Reproduction and Women's Health. Ethical aspects regarding caesarean delivery for nonmedical reasons. Ethical issues in obstetrics and gynecology by the FIGO Committee for the Study of Ethical Aspects of Human Reproduction and Women's Health. London,FIGO, p. 72-73.

30. Gyamfi C, Juhasz G, Gyamfi P, Stone JL (2004) Increased success of trial of labor after previous vaginal birth after cesarean. Obstet Gynecol104(4): 715-719

31. Studsgaard A, Skorstengaard M, Glavind J, Hvidman L, Uldbjerg N (2013) Trial of labor compared to repeat cesarean section in women with no other risk factors than a prior cesarean delivery. Acta Obstet Gynecolgy Scand 92(11): 1256-1263.

32. Smith GC, Pell JP, Pasupathy D, Dobbie R (2004) Factors predisposing to perinatal death related to uterine rupture during attempted vaginal birth after caesarean section: retrospective cohort study. BMJ 329(7462): 375.

33. Laughon SK, Zhang J, Troendle J, Sun L, Reddy UM. Using a Simplified Bishop Score to Predict Vaginal Delivery. *Obstetrics and Gynecology*. 2011;117(4):805-811. doi:10.1097/AOG.0b013e3182114ad2.

34. Flamm BL, Geiger AM. Vaginal birth after cesarean delivery: an admission scoring system. Obstet Gynecol. 1997 Dec. 90(6):907-10.

35. ACOG Updates Recommendations on Vaginal Birth After Previous Cesarean Delivery. *Am Fam Physician.* 2011 Jan 15;83(2):215-217

36. O'brien-Abel N (2003) Uterine rupture during VBAC trial of labor: risk factors and fetal response. J Midwifery Womens Health48(4): 249-257.

37. Jansen FW, Van Roosmalen J, Keirse MJ, Bennebroek Gravenhorst J. Vaginal delivery following caesarean section. Ned Tijdschr Geneeskd. 1989;133:666–9.

38. Dayal V. Trial of vaginal delivery in cases of single previous cesarean section. J Obstet Gynecol. 1985;35:445–50.

39. Rosen MG, Dickinson JC, Westhoff CL. Vaginal birth after cesarean: a meta-analysis of morbidity and mortality. Obstet Gynecol. 1991 Mar. 77(3):465-70.

40. Mone F, Harrity C, Mackie A, et al. Vaginal birth after caesarean section prediction models: a UK comparative observational study. Eur J Obstet Gynecol Reprod Biol. 2015 Oct. 193:136- 9.

41. Hamilton BE Martin JA, Ventura SJ. Births: Preliminary data for 2010. Natl Vital Stat Rep. 2011;60(2). www.cdc.gov/nchs/data/nvsr/nvsr60/nvsr Aaccessed January 9, 2012Vaginal birth after caesarean delivery: does maternal age

affectsafety and success?Sindhu K. Srinivasa, David M. StamilioVaginal birth after caesarean delivery: does maternal age affectsafety and success?Sindhu K. Srinivasa, David M. Stamilio

42. Grobman WA, Lai Y, Landon MB, et al. Development of a nomogram for prediction of vaginal birth after cesarean delivery. Obstetrics & Gynecology. 2007;109(4):806–812.
43. Hashima JN, Guise J-M. Vaginal birth after cesarean: a prenatal scoring tool. American Journal of Obstetrics & Gynecology. 2007;196(5):e22–23.
44. Birgisdottir BT, Hardardottir H, Bjarnadottir RI, Thorkelsson T Vaginal birth after one previous cesarean section, 2008 Sep;94(9):591-7.
45. Haresh UD, Rohit KJ, Aarti AV (2010) Prognostic factors for successful vaginal birth after ceseran section - Analysis of 162 cases. J Obstet Gynecol India 60: 498-502.
46. Weinstein D, Benshushan A, Tanos V, Zilberstein R, Rojansky N. Predictive score for vaginal birth after cesarean section. Am J Obstet Gynecol. 1996;174:192–198
47. Landon MB, Leindecker S, Spong CY, et al. The MFMU Cesarean Registry: factors affecting the success of trial of labor after previous cesarean delivery. Am J Obstet Gynecol. 2005; 193:1016– 1023.
48. Eden KB, McDonagh M, Denman MA, et al. New insights on vaginal birth after cesarean: can it be predicted? Obstet Gynecol. 2010; 116:967–981.
49. Kaimal AJ, Kuppermann M. Understanding risk, patient and provider preferences, and obstetrical decision making: approach to delivery after cesarean. Semin Perinatol 2010; 34(5): 331-6.

50. Grobman WA, Lai Y, Landon MB, et al. Can a prediction model for vaginal birth after cesarean also predict the probability of morbidity related to a trial of labor? Am J Obstet Gynecol 2009;200(1): 56 e1-6.
51. Elkousy MA, Sammel M, Stevens E, et al. The effect of birthweight on vaginal birth after cesarean delivery success rates. Am J Obstet Gynecol. 2003; 188:824–830.
52. Mc Nally OM, Turner MJ. Induction of labour after 1 previous caesarean section. Aust N Z J Obstet Gynecol 1999;39:425-9
53. Bujold E,Blackwell SC,Hendler I,Berman S,Sorokin Y,Gauthier RJ.Modified Bishop's score and induction of labor in patients with a previous cesarean delivery. American Journal of Obstetrics & Gynecology.2004;191 (5):1644-1648
54. Van Gelderen CJ, England MJ, Naylor GA, et al. Labour in patients with a cesarean section scar. The place of oxytocin augmentation. S Afr Med J. 1998; 70:529–532.
55. Horenstein JM, Eglinston GS, Tahilramaney MP, et al. Oxytocin use during a trial of labor in patients with previous cesarean section. J Reprod Med. 1984; 29:26–30.
56. Flamm BL, Goings JR, Fuelberth NJ, et al. Oxytocin during labor after previous cesarean section: results of a multicenter study. Obstet Gynecol. 1987; 70:709–712.
57. Shipp TD, Zelop CM, Repke JT, et al. Labor after previous cesarean: influence of prior indication and parity. Obstet Gynecol. 2000; 95:913–916.
58. Landon MB, Spong CY, Thom E, et al. Risk of uterine rupture with a trial of labor in women with multiple and single prior cesarean delivery. Obstet Gynecol. 2006; 108:12–20.

59. Zelop CM, Shipp TD, Cohen A, et al. Trial of labor after 40 weeks' gestation in women with prior cesarean. Obstet Gynecol. 2001; 97:391–393.
60. Chauhan SP, Cowan BD, Magann EF, et al. Intrapartum detection of a macrosomic fetus: clinical versus 8 sonographic models. Aust N Z J Obstet Gynaecol. 1995; 35:266–270.
61. Hiratal GI, Medearis AL, Horenstein J, et al. Ultrasonographic estimation of fetal weight in the clinically macrosomic fetus. Am J Obstet Gynecol. 1990; 162:238–242.
62. Phelan JP, Clark SL, Diaz F, Paul RH. Vaginal birth after caesarean. Am J Obstet Gynecol. 1987;157:1510–5.
63. Obara H, Minakami H, Koike T, Takamizawa S, Matsubara S, Sato I. Vaginal birth after caesarean delivery. Results in 310 pregnancies. J Obstet Gynaecol. 1998;24:129–34./
64. Macones GA, Hausman N, Edelsein R,Stamilio DM, marder SJ. Predicting outcomes of trials of labour in women attempting vaginal birth after cesarean delivery:a comparison of multivariate methods with neural networks. American Journal of Obstetrics and Gynecology.2001;184(3):409-13
65. Macones GA.The utility of clinical tests of eligibility for a trail of labor following a cesarean section:a decision analysis.British Journal of Obstetrics & Gynaecology .1999;106(7):642-646.

ANNEXURE I

CONSENT FOR PARTICIPATION IN RESEARCH STUDY

Mrs _____ we are requesting you to enroll yourself in study titled **"PREDICTION OF VAGINAL BIRTH AFTER CAESAREAN SECTION USING SCORING SYSTEM AT THE TIME OF ADMISSION FOR TRIAL OF LABOUR- A ONE YEAR PROSPECTIVE COHORT STUDY AT DR. PRABHAKAR KORE CHARITABLE HOSPITAL** conducted by Dr. _____, Post Graduate in M.S. Obstetrics And Gynaecology under the guidance of DR. _____ Professor , Department of Obstetrics And Gynaecology , J.N. Medical College, Belgaum under KLE university, Belgaum.

Respected Madam we request you to participate in our study as you are eligible for participating in the study.

Your participation in research is voluntary. Your decision whether or not to participate in the study will not affect your relationship with J.N. Medical College. If you decide to participate you are free to withdraw at any time.

The purpose of research is to validate trial of labour after primary cesarean deliveries by using predictive scores and variables at the time of admission.

Procedure Involved:

If you agree to enrol yourself in my study, you will be interviewed regarding your present, past and family history, then you will be clinically examined in detail and investigated accordingly.

Risks and Benefits:

The benefits of taking part in this research reduce the complications of repeat cesarean deliveries and fewer neonatal breathing problems. The risk of uterine rupture related to type of uterine incision made during the first cesarean delivery.

Voluntary Participation/Withdrawal:

Taking part in the study is voluntary. You may choose not to enroll yourself in this study. Your decision will not change present or future health care services offered to you at K.L.E's hospital.

Alternatives:

Even if you decline the participation in the study, you will get the routine line of management.

Privacy and Confidentiality:

The only people to know that you are a research subject are members of the research team. No information about you or information provided by you during the research will be disclosed to other without your written permission except:

1. In emergency to protect your rights and welfare.
2. If required by law.

Authorization to Publish Results:

When the results of the research are published or discussed, in a conference, no information will be displayed that would disclose your identity. Any information that is obtained in connection with this study and that can be identified with you will remain confidential.

Financial Incentives for participation:

No financial incentives are being offered to enrolled patients. It is purely being done with the idea of research and all the cost of the study will be borne by the investigator.

Compensation:

In the event of injury related to the study, treatment will be made available through KLE's Hospital & MRC, Belgaum. There is no compensation or payment for such medical treatment by law. If you are injured you may contact Dr. _____, at Department of Obstetrics And Gynaecology, KLE's Hospital& MRC or by Ph. No: _____ .

Questions:

In case you have any questions related to the study, in future or in case of study related injury or illness, you can contact Dr. _____ Department of Obstetrics And Gynaecology, KLE's Hospital and MRC, Ph. No. _____ or phone number: _____ or Dr. _____, Professor, Dept. Of Obstetrics and Gynaecology, KLE's Hospital and MRC, Belgaum Ph.: _____ or phone number: _____.

If you have any queries about your rights as a study subject, you may call Dr. _____ , Prof. & Head of Pathology as Chairman of J. N. Medical College Institutional Ethics Committee on Human Subjects Research, Phone No._____ _____ at J. N. Medical College, Belgaum or phone number: _____.

CONSENT FOR PARTICIPATION IN RESEARCH TRIAL

"PREDICTION OF VAGINAL BIRTH AFTER CAESAREAN SECTION USING SCORING SYSTEM AT THE TIME OF ADMISSION FOR TRIAL OF LABOUR- A ONE YEAR PROSPECTIVE COHORT STUDY AT DR. PRABHAKAR KORE CHARITABLE HOSPITAL

I, _____ voluntarily agree for the participation as a subject of study. By signing this consent form I am not giving up any of my legal rights, I may withdraw from the study anytime. I am signing the consent form after having read or been read form in vernacular language, including the risks and the benefits and having all my questions answered.

Subject Name : _____

Signature or the Left Thumb Print of Subject :_____Date :

Witness Name : _____Signature: _____ Date:

Investigators Name: _____Signature: _____Date:

Place : _____

ಸಂಶೋಧನಾ ಅಧ್ಯಯನದಲ್ಲಿ ಪಾಲ್ಗೊಳ್ಳುವಿಕೆಗಾಗಿನ ಸಮ್ಮತಿಯ

ಶ್ರೀಮತಿ ನಾವು ಎಂಬ ಅಧ್ಯಯನ ನಿಮ್ಮನ್ನು ತೊಡಗಿಸಿಕೊಳ್ಳುವುದು ಏನಂತಿಸುತ್ತಿದ್ದೇವ _____ "ಪ್ರಾಥಮಿಕ ಸಿಸೇರಿಯನ್ ವಿತರಣಾ ಭವಿಷ್ಯ ಸ್ಕೋರ್ ನಂತರ ಕಾರ್ಮಿಕ ಸರಳ ಮೌಲ್ಯಾಂಕನ ಪ್ರಯೋಗ ಪ್ರವೇಶ-ಭಾವಿ ಅಧ್ಯಯನದ ಸಮಯದಲ್ಲಿ ಬಳಸಲು ಅಸ್ಥಿರ" _____ ಸ್ನಾತಕೋತ್ತರ ನಡಸಿದ Dr_____ ಪ್ರೊಫಸರ್, ಪ್ರಸೂತಿ ಇಲಾಖೆ ಮತ್ತು ಗೈನಕಾಲಜಿ, ಜೆ.ಎನ್ ಮಾರ್ಗದರ್ಶನದಲ್ಲಿ ಪ್ರಸೂತಿ ಮತ್ತು ಗೈನಕಾಲಜಿ KLE ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬಳಗಾವಿ ಅಡಿಯಲ್ಲಿ ವೈದ್ಯಕೀಯ ಕಾಲೇಜು, ಬಳಗಾವಿ. ಗೌರವಾನ್ವಿತ ಮೇಡಂ ನಾವು ನೀವು ಅಧ್ಯಯನದಲ್ಲಿ ಅರ್ಹರಾಗಿರುತ್ತಾರೆ ನಮ್ಮ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ನಿಮ್ಮನ್ನು ತೊಡಗಿಸಿಕೊಳ್ಳುವುದು ಮನವಿ. ಅಧ್ಯಯನದ ಸಮಯದಲ್ಲಿ ನಿಮ್ಮ ಪ್ರಸ್ತುತ ದೂರು ಬಗ್ಗೆ ಕಲವು ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಲಾಗುತ್ತದೆ ಮತ್ತು ನಿಮ್ಮ ಜ್ಞಾನದ ಅತ್ಯುತ್ತಮ ಉತ್ತರಿಸಲು ಸೇರಬೇಕೆಂದು.

ಸಂಶೋಧನೆ ನಿಮ್ಮ ಭಾಗವಹಿಸುವಿಕೆ ವ್ಯಯಕ್ತಿಕವಾಗಿದ್ದು. ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಇಲ್ಲವೋ ಎಂಬುದನ್ನು ನಿಮ್ಮ ನಿರ್ಧಾರ ಜೆ.ಎನ್ ನಿಮ್ಮ ಸಂಬಂಧ ಪರಿಣಾಮ ಬೀರುವುದಿಲ್ಲ ವೈದ್ಯಕೀಯ ಕಾಲೇಜು. ನೀವು ಭಾಗವಹಿಸಲು ನಿರ್ಧರಿಸಿದರೆ ನೀವು ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ಹಿಂದಕ್ಕೆ ಉಚಿತ. ಸಂಶೋಧನ ಉದ್ದೇಶಕ್ಕಾಗಿ ಪ್ರವೇಶ ಸಮಯದಲ್ಲಿ ಊಹಾ ಅಂಕಗಳು ಮತ್ತು ಅಸ್ಥಿರ ಬಳಸಿಕೊಂಡು ಪ್ರಾಥಮಿಕ ಸಿಸೇರಿಯನ್ ಪ್ರಸವದ ಕಾರ್ಮಿಕರ ಪ್ರಯೋಗ ಮೌಲ್ಯೀಕರಿಸಲು.

ವಿಧಾನ ಒಳಗೊಂಡ:

ನೀವು ನನ್ನ ಅಧ್ಯಯನದ ನಿಮ್ಮನ್ನು ತೊಡಗಿಸಿಕೊಳ್ಳುವುದು ಒಪ್ಪುತ್ತೀರಿ ವೇಳೆ, ನೀವು ನಂತರ ನೀವು ಪ್ರಾಯೋಗಿಕವಾಗಿ ವಿವರ ವಿಚಾರಣೆ ನಡಸಲಿದ ಮತ್ತು ತಕ್ಕಂತೆ ತನಿಖೆ, ನಿಮ್ಮ ವರ್ತಮಾನ, ಭೂತ ಮತ್ತು ಕುಟುಂಬದ ಬಗ್ಗೆ ಸಂದರ್ಶನ ನಡೆ .

ಅಪಾಯಗಳು ಮತ್ತು ಲಾಭಗಳು:

ಈ ಸಂಶೋಧನೆಯಲ್ಲಿ ಭಾಗವಹಿಸಿದ ಪ್ರಯೋಜನಗಳನ್ನು ಸಿಸೇರಿಯನ್ ಹೆರಿಗೆಗಳು ಮತ್ತು ಕಡಿಮೆ ನವಜಾತ ಸಮಸ್ಯೆಗಳನ್ನು ಪುನರಾವರ್ತಿಸಲು ಸಂಬಂಧಿಸಿದ ತೊಂದರೆಗಳು ಉಲ್ಬಣಗೊಂಡು ಇವೆ. ಗರ್ಭಾಶಯದ ಬರಿಯುವಿಕೆ ಅಪಾಯವನ್ನು ಮೊದ ಸಿಸೇರಿಯನ್ ವಿತರಣಾ ಸಮಯದಲ್ಲಿ ಮಾಡಿದ ಗರ್ಭಾಶಯದ ಛೇದನದ ಟೈಪ್.

ವಾಲಂಟರ ಭಾಗವಹಿಸುವಿಕ / ವಾಪಸಾತ:

ಅಧ್ಯಯನದಲ್ಲ ಭಾಗವಹಿಸದ ವ್ಯಯಿಕ್ತಕವಾಗದ್ದು. ಈ ಅಧ್ಯಯನದಲ್ಲ ನಮ್ಮನ್ನು ತೂಡಗಿಸಕೂಳ್ಳುವುದು ಅಲ್ಲ ಆಯ್ಕ ಮಾಡಬಹುದು. KLES ಆಸ್ಪತ್ರಯಲ್ಲ ನಮಗ ಪ್ರಸ್ತುತ ಅಥವಾ ಭವಿಷ್ಯದ ಆರೋಗ್ಯ ಸೇವಗಳ ಬದಲಾಗುವುದಲ್ಲ

ನಮ್ಮ ನರ್ಧಾರ. ಪರ್ಯಾಯಗಳು: ನೇವು ಅಧ್ಯಯನದಲ್ಲ ಪಾಲ್ಗೂಳ್ಳುವಿಕಯನ್ನು ಇಳಿಕ, ನೇವು ನರ್ವಹಣಯ ದನನತ್ಯದ ಲೈನ್ ಪಡಯುತ್ತಾನ.

ಗೂಪ್ಯತ ಮತ್ತು ರಹಸ್ಯವಾದ:
ಮಾತ್ರ ಜನರು ನೇವು ಸಂಶೂಧನಾ ತಂಡದ ಸದಸ್ಯರು ಸಂಶೂಧನಾ ವಿಷಯದ ಮಾಡಲಾಗುತ್ತದ ಎಂದು ತಳಿಯಲು. ನೇವು ಅಥವಾ ಸಂಶೂಧನಯ ಸಮಯದಲ್ಲ ನೇವು ನೇಡದ ಮಾಹತಯ ಬಗ್ಗ ಯಾವುದೇ ಮಾಹತ ಹೂರತುಪಡಸ ನಮ್ಮ ಲಖತ ಅನುಮತ ಇಲ್ಲದ ಬಹರಂಗಪಡಸಲಾಗುತ್ತದ:
ತುರ್ತು 1. ನಮ್ಮ ಹಕ್ಕುಗಳು ಮತ್ತು ಅಭವೃದ್ಧಗಾಗ ರಕ್ಷಸಲು.
2. ಕಾನೂನನ ಅಗತ್ಯ ವೇಳ.

ಅಧಕಾರ ಫಲತಾಂಶಗಳು ಪ್ರಕಟಸ ಗ:

ಸಂಶೂಧನಯ ಫಲತಾಂಶಗಳು ಪ್ರಕಟವಾದ ಅಥವಾ ಕುರತು ಚರ್ಚಸುವಾಗ, ಕಾನ್ಫರನ್ಸ್, ಯಾವುದೇ ಮಾಹತ ನಮ್ಮ ಗುರುತನ್ನು ಬಹರಂಗಪಡಸಬಹುದು ಎಂದು ತೂರಸಲ್ಪಡುತ್ತದ. ನೇವು ಈ ಅಧ್ಯಯನದ ಸಂಬಂಧಸದಂತ ಪಡಯಲಾಗುತ್ತದ ಮತ್ತು ಗುರುತಸಬಹುದು ಯಾವುದೇ ಮಾಹತ ಗೂಪ್ಯವಾಗಡಲಾಗುವುದು.
ಭಾಗವಹಿಸುವಿಕ ಹಣಕಾಸು ಪ್ರೂತ್ಸಾಹ:

ಯಾವುದೇ ಹಣಕಾಸಿನ ಪ್ರೂತ್ಸಾಹ ನೂಂದಣಯಾದ ರೂಗಿಗಳಿಗ ನೇಡಲಾಯಿತು. ಅಪ್ಪಟ ಸಂಶೂಧನಯ ಯೂಚನ ಮಾಡಲಾಗದ ಮತ್ತು ಅಧ್ಯಯನದ ಏನೇ ಸಂಶೂಧಕ ಭರಸುತ್ತವ.
ಪರಹಾರ:

ಅಧ್ಯಯನಕ್ಕ ಸಂಬಂಧಸದಂತ ಗಾಯಗಳಾದ, ಚಕತ್ಸ KLES ಆಸ್ಪತ್ರ ಮತ್ತು ಎಂಆರ್ಸ, ಬಳಗಾವಿ ಮೂಲಕ ಕೂಡಲಾಗುವುದು. ಕಾನೂನು ವ್ಯಾಪ್ತಯಲ್ಲ ವೈದ್ಯಕೀಯ ಚಕತ್ಸಗಾಗ ಯಾವುದೇ ಪರಹಾರ ಅಥವಾ ಪಾವತ ಇಲ್ಲ. . _____ : ನೇವು ಪ್ರಸೂತ ಮತ್ತು ಗೈನಕಾಲಜ, KLES ಆಸ್ಪತ್ರ

ಮತ್ತು ಎಂಆರ್ಸಿ ಇಲಾಖೆ ಅಥವಾ ದೂರವಾಣಿ ಯಾವುದೇ ಮೂಲಕ ಸಂಪರ್ಕಿಸಬಹುದು ಗಾಯವಾಗಿದ್ದರೆ,.

ಪ್ರಶ್ನೆಗಳು:

ಸಂದರ್ಭದಲ್ಲಿ ನೀವು ಭವಿಷ್ಯದಲ್ಲಿ ಅಥವಾ ಅಧ್ಯಯನಕ್ಕೆ ಸಂಬಂಧಿಸಿದ ಗಾಯದ ಅಥವಾ ಅನಾರೋಗ್ಯದ ಸಂದರ್ಭದಲ್ಲಿ ಅಧ್ಯಯನ ಸಂಬಂಧಿಸಿದ ಯಾವುದೇ ಪ್ರಶ್ನೆಗಳನ್ನು ಹೊಂದಿದ್ದರೆ, ನೀವು ಡಾ _____ , ಪ್ರಸೂತಿ ಇಲಾಖೆ ಮತ್ತು ಗೈನಕಾಲಜಿ, KLES ಆಸ್ಪತ್ರೆ ಮತ್ತು ಎಂಆರ್ಸಿ, ದೂರವಾಣಿ. ನಂ 0831-2551292 ಅಥವಾ ಫೋನ್ ಸಂಪರ್ಕಿಸಬಹುದು ಸಂಖ್ಯೆ: ———— ಅಥವಾ _____, ಪ್ರೊಫೆಸರ್, ಪ್ರಸೂತಿ ವಿಭಾಗ ಮತ್ತು ಗೈನಕಾಲಜಿ, KLES ಆಸ್ಪತ್ರೆ ಮತ್ತು ಎಂಆರ್ಸಿ ಬೆಳಗಾವಿ ದೂರವಾಣಿ .: _____ ಅಥವಾ ದೂರವಾಣಿ ಸಂಖ್ಯೆ: _____.

ನೀವು ಅಧ್ಯಯನ ವಿಷಯದ ನಿಮ್ಮ ಹಕ್ಕುಗಳ ಬಗ್ಗೆ ಯಾವುದೇ ಪ್ರಶ್ನೆಗಳನ್ನು ಹೊಂದಿದ್ದರೆ, ನೀವು ಮಾನವ ವಿಷಯಗಳ ಮೇಲೆ _____, ಪ್ರೊಫೆಸರ್ ಮತ್ತು ಜಎನ್ ಮೆಡಿಕಲ್ ಕಾಲೇಜು ನೈತಿಕ ಸಮಿತಿಯ ಅಧ್ಯಕ್ಷರಾಗಿಯೂ ಪೇಡಿಯಾಟ್ರಿಕ್ಸ್ ಮುಖ್ಯಸ್ಥ ಕರ ಮಾಡಬಹುದು ರಿಸರ್ಚ್, ಫೋನ್ No. _____ ನಲ್ಲಿ ಜ.ಎನ್ ವೈದ್ಯಕೀಯ ಕಾಲೇಜು, ಬೆಳಗಾವಿ ಅಥವಾ ದೂರವಾಣಿ ಸಂಖ್ಯೆ :

सशाधन अभ्यास सहभाग समता

श्रामता आम्हा शाषक अभ्यास स्र : ला नादणा करण ावनता करत _____ "प्राथामक ासझरायन चडू सूचक घावसख्या नतर कामगार साघ सत्याापत चाचणा प्रवश-ए सभाव्य अभ्यास वळा वापरासाठा चलन"_____ _____महद्रासग पदव्युत्तर द्वारा आयाजत _____ प्राध्यापक, प्रसूातशास्त्र ावभाग आाण Gynaecology, एन याच्या मागदशनाखाला प्रसूातशास्त्र आाण Gynaecology KLE ावद्यापाठ, बळगाव अतगत म , बेळगाव. आदर मडम आपण अभ्यासात सहभागा पात्र आहत म्हणून आमच्या अभ्यास सहभागा स्वत: ला नादणा ावनता. अभ्यास दरम्यान आपण आपल्या उपास्थत तक्रार सबाघत काहा प्रश्न ावचारल जाणार नाहात आाण आपण आपल्या ज्ञान उत्तम उत्तर बजावण गरजच आह.

प्राक्रया सहभाग:

तुम्हा माइ अभ्यासात स्वत: ला नावनादणा सहमत असल्यास, नंतर आपण वद्यका तपशील कला जाइल, आाण त्यानुसा तपास, तुमच्या सघ्याच्या गल्या आाण कुटुब इातहास सबाघत मुलाखत घतला जाणार आहे.

धोके आाण फायदे:

या संशोधन मध्य भाग घऊन लाभ ासझरायन प्रसूताच्या आाण कमी अमकाचा समस्य पुन्हा सबाघत गुंतागुंत आहेत. गभाशयाच्या बेबनाव धोका पाहल्या ासझरायन चडू दरम्यान गभाशयाच्या छदाच्या टाइप कर .

स्वयसवा सहभाग / काढणे:

अभ्यास भाग घेत एच्छक आह. आपण या अभ्यासात स्वत: ला नावनादणा नाहा ानवडू शकता. KLES रुग्णालयात आपण देऊ उपास्यत ाकव भावष्यात आारोग्य सवा बदलणार नाहा आपले ानणय.

ावकल्प:

आपण अभ्यास सहभाग घट जरा, आपण व्यवस्थाप ानयामत ओळ ामळल गापनायता आाण गोपनीयता: केवळ लोक आपण संशोधन संघ सदस्य संशोधन ावषय आहेत हे जाणून घेणे. आपण ाकवा सशाधन दरम्यान आपण प्रदान कलला माहता माहता वगळता आपल्या लखा परवानगाशवाय इतर उघड जाईल:

आणीबाणी 1. आपल आध व कल्याण सरक्षण करण्यार .
2. कायद्यान आवश्यक असेल तर.

प्राधकृत पारणाम प्रकाशत करण्यासाठा:

संशोधन पारणाम प्रकाशत क चचा जातात तव्ह, एक पारषद, नाहा माहता आपला आळख उघड होईल, असे प्रदाशत कल जाइल. आपण या अभ्यासात संबंधात मध्य प्राप्त आह आण त्या आळखला जऊ शकत अशा काणताहा माहता गोपनीय राहाल.

सहभाग आथक प्रात्साहन:

काणत्याहा आथक लाभाश नादणा रुग्णान दण्यात यणा आहेत. हा पूणपण संशोधन कल्पना केले जात आहे आण अभ्यास सव खच तपासनीस भरले जाईल.
नुकसान भरपाई:
अभ्यास सबाधत इजा झाल्यास, उपचार KLES हास्पटल आण MRC, बेळगाव माध्यमातून उपलब्ध करून दला जाइल. कायदा अशा वद्यकार उपचार काणतहा नुकसान भरपाइ किवा पैसे आहे. . _____ : आपण प्रसूतशास्त्र आण Gynaecology, KLES हास्पटल व MRC विभाग किवा फोन नाहा करून, _____ किरण सपक साधू शकता दुखापतग्रस्त असताल तर.

प्रश्न:

जर आपण भावष्यात किवा अभ्यास सबाधत इजा किवा आजार बाबतीत अभ्यास सबाधत काणतहा प्रश्न, आहे, आपण डॉ_____, प्रसूतशास्त्र विभाग आण Gynaecology, KLES हास्पटल व MRC, दूरभाष. क्रमाव _____ किवा फान सपक साधू शकता क्रमाव :_____किवा डॉ _____, प्राध्यापक, प्रसूतशास्त्र विभाग आण Gynaecology, KLES हास्पटल व MRC, बेळगाव दूरभाष .: _____ किवा फान नबर: _____.

आपण एक अभ्यास विषय म्हणू आपल आधकार बद्दल काहा शका असल्यास, आपण मानवी विषय वर Dr.NSMahashetti प्रा व एन माडकल कालज सस्थात्मक नातशास सामताच अध्य म्हणून बालरोग प्रमुख बोलवा संशोधन, फोन No _____, -इ.स. येथे जेएन माडकल कालज, बेळगाव, किवा फान नबर:

ANNEXURE II – PROFORMA

"Prediction of vaginal birth after caesarean section using scoring system at the time of admission for trial of labour- A one year prospective cohort study at Dr. Prabhakar Kore Charitable hospital.

Name:_____

Age :_____

Address:_____

_____

Phone No:_____

Date of Admission:_____

IP No:_____

Chief Complaints:

DELIVERY: VAGINAL/ELECTIVE

MODE OF DELIVERY: Vaginal

GESTATIONAL AGE:

INDICATION FOR PREVIOUS SECTION

Risks/Benefits of VBAC **YES/NO**

DISCUSSED

Risks/Benefits of repeat LSCS YES/NO

DISCUSSED

Menstrual History:

LMP- ☐☐ ☐☐ ☐☐☐☐ POG- ☐☐Weeks ☐☐

Days ☐☐

EDD- ☐☐ ☐☐☐☐

USG EDD- ☐☐ ☐☐ ☐☐☐☐

Obstetric History:

Gravida ☐

Para ☐

Living ☐

Abortion ☐

Dead ☐

Still Birth

Past History:

I. General Physical Examination:

Pallor / Icterus / Oedema

Pulse : BP : RR :

II.SYSTEMIC EXAMINATION:

Per Abdomen:

Calculating Chance of Successful VBAC

SCORE

Uterine Contraction: **YES/NO**

Bishop Score at time of admission:

Score:	0	1	2
Cvx Dilation:	0	1-2	3-4 _____
Cvx Length:	>2	1-2	<1 _____
Station:	-3	-2	-1 _____
Consistency:	Firm	Med	Soft _____
Position:	Post.	Cent.	Ant. _____

Total Bishop Score _____

History of vaginal birth: +4

Pre-pregnancy BMI <30 +2

1st C-Section not recurring indication +3

Maternal age <35 +2

Sum total score:

ANNEXURE III – ETHICAL CLEARANCE

K.L.E.UNIVERSITY'S
JAWAHARLAL NEHRU MEDICAL COLLEGE,
NEHRU NAGAR, BELAGAVI-590010 (KARNATAKA-INDIA)
(Accredited 'A' Grade by NAAC)

Website: http//www.jnmc.edu
E-Mail : dome@jnmc.edu

Phone: (+ 91-(0)831 Office : 2471350
Principal: 2471701
Fax No. +91 (0)831 – 2470759

Ref: MDC/DOME/ 393 **Date: 19/11/2015**

To,

REG. NO. B J 0 1 1 5 0 0 4
PG student in OBG,
J.N.Medical College,
BELAGAVI.

Sub: Institutional Ethical Clearance for the study.

With reference to the above, we wish to inform you that your proposed research project titled **"PREDICTION OF VAGINAL BIRTH AFTER CAESAREAN SECTION USING SCORING SYSTEM AT THE TIME OF ADMISSION FOR TRIAL OF LABOUR – A ONE YEAR PROSPECTIVE COHORT STUDY AT DR. PRABHAKAR KORE CHARITABLE HOSPITAL",** is ethical and justifiable. The proposed research project has been cleared by the JNMC Institutional Ethics Committee on Human Subjects Research.

(Dr. Arathi Darshan)
Member Secretary
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

(Dr. Ganga Pilli)
Chairman,
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

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ANNEXURE - IV-

KEY TO MASTERCHART

Y	-	yes
N	-	no
V	-	vaginal delivery
S	-	spontaneous
LSCS	-	Lower segment caesarean section.
ST	-	Scar Tenderness
NPL	-	Non Progress of Labour
CPD	-	Cephalopelvic disproportion
TMSL	-	Thick Meconium Stained Liquor
FT	-	Fetal Tachycardia
FD	-	Fetal distress
SD	-	Scar Dehiscence
PROM	-	Premature rupture of membrane.
FM	-	Fetal Macrosomia
EFW	-	Expected fetal weight
Bishop score	-	cervical dilatation >/= 5
		Cervical dilatation </= 5
BMI	-	Body mass index

SL no	IP No	Maternal age			BMI			Gestational age	History of Vaginal Bi		Bishop score		Uterine contraction		EFW	Cervix is favourable		Delivery	Mode of delivery		Indication of LSCS	Successfull VBAC		Birth wt	Prev LSCS indICATIOI	VBAC score
		<=30	31-34	>=35	<=24	24.1-27.5	>=30		Yes	No	<=5	>5	Yes	No		yes	no	Spont	Vaginal	LSCS		Yes	No			
90	679524	25			20	>=30				N				N			ND	S	V				N			
1	709713	24			24			38W 2D		N	5		Y		3	Y		S		LSCS	NPL		N	**2.8**	FD	11
2	711382	23			23			38W		N		7	Y		3.2	Y		S	V			YES		**2.9**	BREECH	14
3	711165	25			21			39W 4D		N		6	Y		3.1	Y		S		LSCS	FD		N	**2.9**	TMSL	12
4	712102	21			25			39W		N	2		Y		3.2	Y		S		LSCS	ST		N	**3.3**	TRANSLIE	11
5	712134	22			23			38W 1D		N		10	Y		2.9	Y		S	V			YES		**2.7**	NPL	17
6	712521	24			25			39W 2D		N		10	Y		2.8	Y		S	V			YES		**2.7**	FD	17
7	712559	23			26			38W 4D	Y			10	Y		2.9	Y		S	V			YES		**3**	FI	21
8	712776	23			24			38W		N	4		Y		2.8	Y		S		LSCS	FD		N	**2.5**	TMSL	13
9	713410	22			21			38W 3D		N		6	Y		2.7	Y		S		LSCS	TMSL		N	**2.6**	FD	12
10	713376	25			26			38W 2D		N		8	Y		2.6	Y		S		LSCS	CPD		N	**2.4**	CPD	11
11	713827	27			22			39W 1D		N	3			N	2.9	Y		S		LSCS	NPL		N	**3**	BREECH	11
12	714402	25			28			40W 1D		N		9	Y		3	Y		S		LSCS	TMSL		N	**3.1**	PROM	10
13	714540	23			26			39W 2D		N		10	Y		2.6	Y		S	V			YES		**2.4**	NPL	17
14	715132	26			21			38W 1D		N	3			N	3.1	Y		S		LSCS	NPL		N	**3.2**	NPL	12
15	715337	22			25			40W 5D		N	3		Y		3.3	Y		S	V			YES		**3.1**	TMSL	10
16	715553	23			24			38W 6D		N		9	Y		3	Y		S		LSCS	TMSL		N	**2.9**	FD	13
17	715969	24			25			39W 5D		N	4			N	3.2	Y		S		LSCS	ST		N	**3.3**	BREECH	11
18	716050	22			22			39W		N	4			N	2.8	Y		S		LSCS	NPL		N	**2.7**	FD	12
19	715523	25			22			38W 1D		N	5		Y		3.3	Y		S		LSCS	NPL		N	**3.2**	FD	12
20	716146	26			24			40W 2D		N		6	Y		3	Y		S		LSCS	TMSL		N	**3.1**	MACRO	12
21	716280	24			23			38W		N		10	Y		2.5	Y		S		LSCS	CPD		N	**2.2**	FD	11
22	716292	26			21			38W		N	5		Y		2.6	Y		S		LSCS	FD		N	**2.7**	CPD	11
23	716521	24			27			41W 4D		N		6	Y		3.4	Y		S		LSCS	TMSL		N	**3.3**	FI	13
24	720794	25			22			38W		N		8	Y		2.6	Y		S		LSCS	FD		N	**2.3**	CPD	10
25	720127	24			25			38W6D		N	4				2.9	Y		S		LSCS	NPL		N	**2.7**	PROM	12
26	717587	22			22			39W 3D		N		6	Y		3.1	Y		S		LSCS	FD		N	**3.3**	FD	12
27	717282	23			26			38W 1D		N	4			N	3.1	Y		S		LSCS	NPL		N	**3.3**	OLIGO	11
28	717006	25			24			38W		N	4			N	3		N	S		LSCS	NPL		N	**2.8**	MACRO	11

29	717060	24			21			39W 1D		N		8	Y		3.2	Y		S		LSCS	TMSL		N	**3.2**	NPL	10
30	717035	25			25			40W 3D		N		6	Y		2.6	Y		S		LSCS	FD		N	**2.5**	FD	14
31	722116	24			25			41W 3D		N	4			N	3	Y		S		LSCS	NPL		N	**3.09**	FD	12
32	719258	28			24			39W 6D	Y			6	Y		3.1	Y		S	V			Y		**2.9**	NPL	17
33	721391	25			26			39W		N	4		Y		2.8	Y		S	V			Y		**2.6**	BREECH	11
34	721649	23			24			37W 6D	Y			8	Y		3	Y		S	V			Y		**2.7**	FI	19
35	721751	24			27			39W3D		N	5		Y		3	Y		S	V			Y		**2.9**	TMSL	12
36	721907	23			25			39W	Y		5		Y		3.1	Y		S	V			Y		**2.9**	BREECH	16
37	722340	25			22			41W 3D		N		7	Y		3.1	Y		S		LSCS	FD		N	**3**	CPD	12
38	722570	21			26			40W 5D		N	0		Y		3.3	Y		S		LSCS	ST		N	**3.4**	FD	10
39	3715954	22			27			40W		N	3		Y		3.4	Y		S		LSCS	FD		N	**3.2**	FD	10
40	3742166	21			23			39W 5D		N	4			N	3.1	Y		S		LSCS	FT		N	**3.2**	CPD	11
41	723190	24			28			38W 4D		N	4		Y		3	Y		S		LSCS	NPL		N	**2.9**	FI	11
42	723175	26			21			38W 3D		N	4		Y		3.3	Y		S		LSCS	NPL		N	**3.5**	BREECH	12
43	723472	24			25			38W 2D	Y			7	Y		2.6	Y		S	V			YES		**2.4**	FD	18
44	723552	23			27			41W		N	4		Y		3		N	S		LSCS	NPL		N	**2.9**	TMSL	14
45	723771	24			23			39W 2D		N	4			N	3.1	Y		S		LSCS	FT		N	**2.9**	FI	12
46	723465	24			22			38W 5D	Y		5		Y		3.4	Y		S		LSCS	NPL		N	**3.3**	BREECH	13
47	723987	23			21			39W		N		7	Y		3.1	Y		S		LSCS	TMSL		N	**3.2**	NPL	15
48	723990	26			24			40W 2D		N		7	Y		2.8	Y		S		LSCS	FD		N	**2.6**	CPD	16
49	724118	25			29			40W		N		8	Y		2.9	Y		S		LSCS	TMSL		N	**2.8**	MACR0	15
50	725513	22			25			39W		N	4		Y		2.9	Y		S		LSCS	NPL		N	**3**	CPD	13
51	726703	24			24			38W 4D		N		7	Y		3	Y		S		LSCS	TMSL		N	**2.7**	FD	12
52	726613	23			26			39w		N	4			N	3.3	Y		S		LSCS	CPD		N	**3.2**	BREECH	13
53	727224	25			26			39W 3D		N	4			N	3.3	Y		S		LSCS	FT		N	**2.9**	FI	12
54	727371	26			22			38W 1D		N	4		Y		2.7	Y		S		LSCS	SD		N	**2.3**	FD	12
55	723316	24			26			37W1D	Y			7	Y		2.6	Y		S	V			Y		**2.3**	TMSL	18
56	724284	24			26			39W 5D	Y			9	Y		3	Y		S	V			Y		**2.8**	BREECH	20
57	724675	25			24			38W 5D	Y		5		Y		3	Y		S	V			Y		**2.9**	NPL	16
58	726736	23			27			39W 1D	Y			7	Y		2.9	Y		S	V			Y		**2.7**	NPL	18
59	728765	24			24			39W 1D	Y			8	Y		2.9	Y		S	V			Y		**2.8**	BREECH	19
60	730241	22			25			39W 1D	Y			7	Y		3.1	Y		S	V			Y		**3.2**	TMSL	18
61	731688	24			27			40W 1D	Y		5		Y		2.5	Y		S	V			Y		**2.3**	MSL	16
62	732171	24			26			39W 1D		N	4		Y		3.5	Y		S		LSCS	NPL		N	**3.5**	FI	13
63	731890	20			25			39W4D		N		7	Y		3.2	Y		S		LSCS	TMSL		N	**3.4**	NPL	12
64	732867	25			24			39W 6D		N	4		Y		3.1	Y		S		LSCS	TMSL		N	**3.2**	BREECH	10
65	734725	21			24			39W		N		7	Y		2.8	Y		S		LSCS	FD		N	**2.6**	TMSL	11
66	734384	26			23			40W 1D	Y			9	Y		3.2	Y		S	V			Y		**2.9**	BREECH	20
67	735673	28			26			40W		N	2		Y		3	Y		S		LSCS	NPL		N	**3.1**	CPD	11
68	735659	30			22			38W 5D	Y			7	Y		3.2	Y		S	V			Y		**3.3**	NPL	18
69	735963	25			27			38W		N		8	Y		2.8	Y		S		LSCS	TMSL		N	**2.5**	CPD	14

70	736695	23			25			40W		N	4			N	3.5	Y		S		LSCS	MACRO		N	**4**	NPL	13
71	736732	25			26			37W 4D		N	4		Y		2.9	Y		S		LSCS	FD		N	**2.7**	BREECH	11
72	736936	24			21			40W		N	4			N	2.9	Y		S		LSCS	MACRO		N	**3**	CPD	12
73	737707	28			23			38W 2D		N		8	Y		3.2	Y		S		LSCS	TMSL		N	**3**	FI	11
74	737016	24			25			40W		N	4			N	2.6		N	S		LSCS	FT		N	**2.3**	CPD	11
75	736493	29			24			40W		N	4		Y		3.1	Y		S		LSCS	NPL		N	**3.2**	FD	14
76	738154	26			29			37W 1D		N		6	Y		2.8	Y		S		LSCS	FD		N	**2.8**	FD	12
77	738304	24			28			40W		N		8	Y		2.9	Y		S		LSCS	TMSL		N	**3**	FD	13
78	738381	28			28			39W 4D		N	4		Y		3.5	Y		S		LSCS	MACRO		N	**3.7**	NPL	10
79	740024	26			27			39W 4D	Y			10	Y		3	Y		S	V			Y		**3.1**	NPL	21
80	739989	25			24			39W 1D		N		7	Y		2.5	Y		S		LSCS	TMSL		N	**2.6**	CPD	13
81	741468	24			22			38W		N		8	Y		2.7	Y		S	V			Y		**2.8**	FD	15
82	741471	26			26			39W 1D		N		8	Y		2.9	Y		S	V			Y		**2.7**	BREECH	15
83	742390	25			21			40W 3D		N		6	Y		2.8	Y		S		LSCS	FT		N	**2.6**	CPD	13
84	742635	27			24			30W		N		10	Y		3.3	Y		S	V			Y		**3.2**	FI	17
85	742764	25			21			40W 5D		N	5			N	3.5	Y		S		LSCS	FT		N	**3.4**	BREECH	15
86	743021	24			25			39W 2D	Y			8	Y		3	Y		S	V			Y		**2.9**	BREECH	19
87	743289	29			28			37W 3D		N	4		Y		3.5	Y		S		LSCS	NPL		N	**3.4**	CPD	14
88	743244	26			27			40W 1D	Y			8	Y		3.4	Y		S		LSCS	NPL		N	**3.4**	FI	19
89	744010	24			22			39W		N		9	Y		2.7	Y		S	V			Y		**2.6**	NPL	16
90	744152	27			21			39W	Y			9	Y		2.9	Y		S	V			Y		**2.6**	FI	21
91	744338	24			23			37W		N		10	Y		3	Y		S	V			Y		**2.8**	NPL	17
92	743941	28			23			40W 5D	Y			8	Y		3.1	Y		S	V			Y		**3**	CPD	19
93	743560	28			25			38W		N	5			N	3.2	Y		S		LSCS	NPL		N	**3.3**	CPD	13
94	744110	25			24			39W 5D		N	4			N	3.4		N	S		LSCS	FT		N	**3.1**	BREECH	15
95	745566	26			28			40W		N		8	Y		3.3	Y		S		LSCS	NPL		N	**3.4**	PPROM	16
96	746164	24			24			39w 2d		N		7	Y		3.2	Y		S		LSCS	NPL		N	**3**	BREECH	17
97	746928	23			21			37w 4d		N	5		Y		3.5	Y		S		LSCS	NPL		N	**3.6**	FM	15
98	747002	27			25			38W 4D		N		9	Y		2.9	Y		S	V			Y		**2.7**	PROM	16
99	747494	24			28			40W 2D		N	5		Y		3.2	Y		S		LSCS	NPL		N	**3.3**	CPD	13
100	747691	23			22			40W		N		8	Y		3	Y		S	V			Y		**2.8**	NPL	15
101	747721		30		29			39W	Y			8	Y		3.5	Y		S	V			Y		**3.6**	CPD	19
102	747764	20			24			38W 6D		N		8	Y		3.3	Y		S		LSCS	NPL		N	**3.4**	MSL	16
103	748192	22			25			40W		N	5			N	3.1	Y		S		LSCS	ST		N	**3.3**	FI	15
104	748108	27			27			37W 4D		N		8	Y		3.2	Y		S	V			Y		**3.1**	TMSL	15
105	748235	25			28			41W		N		6	Y		3.4	Y		S	V			Y		**3.2**	FT	13
106	748670	25			22			38W 2D		N		8	Y		2.4	Y		S	V			Y		**2.1**	NPL	15
107	748708	23			24			39W 6D		N	5		Y		2.9	Y		S	V			Y		**3**	FI	12
108	748928	24			23			38W 3D		N		8	Y		2.7	Y		S	V			Y		**2.5**	OLIGO	15
109	749057	23			21			39W 4D		N		9	Y		2.5	Y		S	V			Y		**2.6**	BREECH	16
110	749034	21			26			38W 5D		N		8	Y		2.7	Y		S	V			Y		**2.4**	FD	15

111	749197	28			29			39W 2D		N		8	Y		2.5	Y		S	V			Y		**2.3**	PROM	15
112	749392	26			27			40W 3D		N		10	Y		3.5	Y		S	V			Y		**3.8**	NPL	17
113	749480	25			22			38W 4D		N		8	Y		2.5	Y		S	V			Y		**2.3**	NPL	15
114	749266	26			25			38W 4D		N		6	Y		3	Y		S		LSCS	NPL		N	**2.9**	FD	15
115	750108	22			24			38W		N		7	Y		3	Y		S	V			Y		**2.6**	BREECH	14
116	749611	22			25			37W 6D		N	5		Y		2.9	Y		S		LSCS	MSL		N	**2.6**	FI	13
117	752163	24			26			38W6D	Y			10	Y		2.8	Y		S	V			Y		**2.7**	MSL	21
118	750730	20			22			38W		N		6	Y		3	Y		S		LSCS	FD		N	**3.2**	CPD	13
119	751642	20			22			39W		N	5		Y		3.1	Y		S		LSCS	NPL		N	**3.3**	FI	12
120	751219	22			27			40W 1D	Y			7	Y		3.5	Y		S		LSCS	NPL		N	**3.6**	FI	17
121	752981	23			25			38W 2D		N		6	Y		3.1	Y		S		LSCS	FD		N	**2.8**	FD	11
122	751955	22			24			37W 5D	Y		4		Y		2	Y		S		LSCS	FD		N	**1.2**	CPD	16
123	753096	24			21			38W 3D		N		9	Y		2.9	Y		S	V			Y		**2.8**	BREECH	16
124	753249	22			28			38W 4D		N	4		Y		2.8	Y		S		LSCS	FD		N	**2.9**	CPD	12
125	753374	23			23			38W 4D		N		6	Y		2.6	Y		S		LSCS	NPL		N	**2.7**	NPL	11
126	753856	27			28			37W 6D		N	5		Y		2.9	Y		S		LSCS	CPD		N	**2.7**	CPD	10
127	754678	27			22			38W		N	5		Y		2.5	Y		S	V			Y		**2.3**	FI	12
128	754740	20			22			39W 5D		N	5		Y		3	Y		S		LSCS	CPD		N	**3**	BREECH	11
129	754787	26			25			37W 2D		N		8	Y		2.9	Y		S	V			Y		**2.8**	CPD	15
130	754790	22			28			39W		N	4		Y		3.5	Y		S		LSCS	CPD		N	**3.6**	BREECH	13
131	758108	23			27			39W 6D		N	4		Y		2.9	Y		S	V			Y		**3**	CPD	11
132	755689	25			25			37W 5D		N	4		Y		2.7	Y		S	V			Y		**2.6**	BREECH	11
133	756139	28			26			40W	Y			8	Y		3.1	Y		S	V			Y		**3.01**	BREECH	19
134	757555	22			25			41W		N		6	Y		2.6	Y		S	V			Y		**2.4**	MSL	13
135	757565	26			21			40W 3D	Y			8	Y		2.8	Y		S	V			Y		**2.9**	CPD	19
136	757661	25			22			37W 3D		N	5		Y		3.2	Y		S		LSCS	NPL		N	**3.4**	OLIGO	12
137	758721	23			27			37W		N	5		Y		3	Y		S		LSCS	FD		N	**2.9**	MSL	10
138	759549	22			29			38W 6D		N	4		Y		3.2	Y		S		LSCS	FD		N	**3.3**	BREECH	10
139	760167	26			26			39W		N		6	Y		3.4	Y		S		LSCS	CPD		N	**3.5**	MSL	11
140	760184	25			25			39W 3D		N		10	Y		2.7	Y		S	V			Y		**2.4**	NPL	17
141	760195	25			22			40W		N	5		Y		2.8	Y		S		LSCS	FD		N	**2.7**	NPL	11
142	760253	23			24			40W		N	5		Y		2.6	Y		S	V			Y		**2.3**	BREECH	12
143	760263	25			23			38W		N		7	Y		3.1	Y		S	V			Y		**2.9**	CPD	14
144	761002	28			27			40W	Y			9	Y		3.2	Y		S	V			Y		**3.1**	BREECH	20
145	761314		30		29			38W 1D		N	5		Y		2.9	Y		S		LSCS	FD		N	**3**	MSL	11
146	761489	23			25			39W 6D		N	5		Y		2.6	Y		S	V			Y		**2.5**	NPL	12
147	761939	25			24			39W 3D	Y		5		Y		2.8	Y		S		LSCS	CPD		N	**2.6**	CPD	16
148	762463	20			28			40W		N		8	Y		3.3	Y		S	V			Y		**3.4**	BREECH	15
149	763031	23			24			39W		N		8	Y		3.2	Y		S	V			Y		**3**	BREECH	15
150	764089	25			27			40W 6D	Y			6	Y		2.8	Y		S	V			Y		**2.6**	NPL	17
151	764433	24			30			40W 1D		N		6	Y		2.4	Y		S		LSCS	NPL		N	**2.4**	FD	12

152	764492	23			28			39W 3D	Y		5		Y		2.4	Y		S		LSCS	MSL		N	**2.3**	CPD	16
153	764577	25			24			38W 4D		N		6	Y		2.7	Y		S		LSCS	CPD		N	**2.8**	CPD	11
154	764766	22			23			38W 2D	Y			9	Y		2.8	Y		S	V			Y		**2.8**	BREECH	20
155	764919	24			22			37W 1D		N		7	Y		2.6	Y		S		LSCS	CPD		N	**2.6**	TMSL	12
156	765037	25			26			39W		N		8	Y		2.5	Y		S	V			Y		**2.6**	PROM	15
157	765977	24			25			38W 5D		N		10	Y		2.5	Y		S	V			Y		**2.6**	FD	17
158	766147	22			27			39W 2D		N	5		Y		3.4	Y		S		LSCS	CPD		N	**3.5**	MSL	11
159	766452	27			23			41W 2D		N	5		Y		3.2	Y		S		LSCS	CPD		N	**3.2**	NPL	13
160	767025	26			25			39W 2D		N	5		Y		3	Y		S	V			Y		**2.9**	BREECH	12
161	767226	26			28			38W 5D		N		9	Y		3.1	Y		S	V			Y		**2.9**	BREECH	16
162	767961	24			24			39W		N		6	Y		2.7	Y		S	V			Y		**2.6**	OLIGO	13
163	768230	26			26			37W 3D	Y			6	Y		3.3	Y		S	V			Y		**3.4**	BREECH	17
164	768373	23			29			37W 5D		N		8	Y		3.3	Y		S		LSCS	CPD		N	**3.3**	CPD	15
165	768401	23			26			37W 2D		N		8	Y		3	Y		S	V			Y		**2.8**	BREECH	15
166	769371	23			25			39W 2D		N	5		Y		2.6	Y		S		LSCS	CPD		N	**2.4**	CPD	14
167	769395	26			25			39W 4D		N		8	Y		3.1	Y		S	V			Y		**2.9**	OLIGO	15
168	769405	27			25			37W		N		8	Y		2.3	Y		S	V			Y		**2.1**	PROM	15
169	769376	22			24			41W 1D		N		6	Y		2.7	Y		S	V			Y		**2.6**	NPL	13
170	769520	25			28			37W 1D		N		8	Y		2.3	Y		S	V			Y		**2.2**	PROM	15
171	769707	26			26			39W		N		7	Y		3	Y		S	V			Y		**3.1**	BREECH	14
172	769785	23			25			41W		N	5		Y		2.8	Y		S		LSCS	TMSL		N	**2.7**	NPL	13
173	760062	24			27			41W		N		8	Y		2.9	Y		S	V			Y		**2.7**	BREECH	15
174	770271	24			23			37W	Y		5		Y		2.5	Y		S	V			Y		**2.2**	CPD	17
175	770538	26			28			39W 1D		N		8	Y		2.5	Y		S	V			Y		**2.5**	NPL	15
176	771505	21			24			37W		N	5		Y		2.6	Y		S		LSCS	FD		N	**2.7**	NPL	11
177	771802	22			26			40W	Y			6	Y		3.4	Y		S		LSCS	FD		N	**3.5**	OLIGO	10
178	772169	25			23			39W 3D		N		7	Y		3	Y		S		LSCS	FD		N	**2.8**	FI	10
179	772411	27			24			37W 4D		N		8	Y		3.2	Y		S	V			Y		**3**	BREECH	15
180	772440	30			27			39W 6D		N	5		Y		2.7	Y		S		LSCS	NPL		N	**2.4**	NPL	12
181	772792	24			26			37W 3D		N		7	Y		2.9	Y		S	V			Y		**2.8**	BREECH	14
182	775263	26			24			39W 1D		N	4		Y		3.3	Y		S		LSCS	CPD		N	**3.3**	BREECH	11
183	775275	27			28			39W 4D		N		8	Y		3.1	Y		S	V			Y		**3.2**	FD	15
184	776205	28			27			37W		N	5		Y		2.8	Y		S		LSCS	CPD		N	**2.8**	FD	12
185	776122	25			27			38W		N	4		Y		2.5	Y		S		LSCS	CPD		N	**2.3**	CPD	11
186	777136	27			25			38W 6D		N	4		Y		3.1	Y		S		LSCS	NPL		N	**3**	CPD	11
187	777233	25			26			39W 1D		N		7	Y		2.8	Y		S	V			Y		**2.9**	NPL	14
188	777557	24			25			40W 2D	Y		4		Y		3.5	Y		S		LSCS	FD		N	**3.9**	NPL	11
189	777611	26			26			39W 3D		N		8	Y		2.8	Y		S	V			Y		**2.7**	BREECH	15
190	777272	24			25			39W		N	4		Y		3.3	Y		S		LSCS	NPL		N	**3.2**	CPD	11
191	777549	23			22			38W		N	4		Y		3.5	Y		S		LSCS	FD		N	**3.7**	CPD	11
192	778425	26			26			40W 4D	Y			7	Y		3.4	Y		S		LSCS	CPD		N	**3.8**	NPL	18

193	778866	24			23			38W 4D	Y			7	Y		3.2	Y		S	V			Y		**3.1**	BREECH	18
194	779588	23			23			38W 5D		N		9	Y		2.9	Y		S	V			Y		**2.8**	BREECH	16