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Trial Of Labor After Cesarean Delivery:Retrospective Study At Tertiary Health Care Centre

Dr AMI V MEHTA
Dr BHARGAV J PATEL(CORRESPONDING AUTHOR)
DR PAYAL P. PANCHAL
DR SUSHMA R SHAH
DR KARAN V MEHTA
DR DAYNA SHROFF
DR CHARMI PRAJAPATI

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I. INTRODUCTION-

A TOLAC (trial of labor after cesarean delivery) refers to a planned attempt to deliver vaginally by a woman who has had a previous cesarean delivery, regardless of the outcome. (ACOG)[7]

Planned VBAC refers to the intended mode of delivery of any woman who has experienced a prior caesarean birth who plans to deliver vaginally rather than by elective repeat caesarean section (ERCS).A vaginal delivery (spontaneous or assisted) in a woman undergoing planned VBAC indicates a successful VBAC. Delivery by emergency caesarean section during the labor indicates an unsuccessful VBAC.[1] (RCOG)

In an appropriate clinical setting and properly selected group of women, VBAC offers distinct advantages over a repeat caesarean section. like a shorter hospital stay,less blood loss and reduced incidence of infection and thromboembolic events than Caesarean delivery. However uterine rupture and its associated complications are increased with a trial of labor after caesarean section. Several reports have indicated that the absolute risk of uterine rupture attributable to a trial of labor after caesarean section is about 1 per 1000.

II. AIM-

1-To study various factors affecting outcome of trial of labour after cesarean section.

III. MATERIALS AND METHOD -

Study design - Retrospective study done at a tertiary care teaching hospital in Ahmedabad.

Study Population -100 patients were included who had gone for 'trial of labor after cesarean delivery' for the study.

Study period - 1st October, 2017 to 30th September, 2020

Information regarding obstetric history noted in detail.

Details of previous cesarean section delivery in terms of Indication of cesarean section, whether trial was given prior to operation and postoperative events till discharge from the hospital.

Number of vaginal delivery before or/and after cesarean section, weight of babies of all deliveries and whether alive or dead.

Detailed General Examinations and Obstetrical examination was noted.

Relevant routine investigations were noted in all patients.

The progress of labour noted with help of recorded partogram and outcome of labour was noted in terms of planned VBAC(i.e.successful TOLAC) or emergency LSCS during the course of labour(i.e. unsuccessful TOLAC).

IV. RESULTS -

100 patients who had undergone for 'trial of labor after cesarean delivery' between 1st October, 2017 to 30th September, 2020 were included,case records of each of them was studied in detail and outcome of TOLAC. 64 patients had planned VBAC(successful TOLAC) and 36 patients had emergency LSCS during the course of labour (unsuccessful TOLAC).

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TABLE 1. AGE DISTRIBUTION AND OUTCOME OF PREGNANCY

Age group (years)	Total cases (n=100)	Planned VBAC		Unsuccessful TOLAC	
		No	%	No	%
18-25	37	21	56.76	16	43.24
26-30	48	39	81.25	09	18.75
31-35	11	04	36.36	07	63.64
36-40	04	00	0.00	04	100

The age of patients in the present study ranged between 18 to 40 years. Maximum numbers (48) of patients were in the age group of 26-30 years which is the peak child bearing age group. Successful VBAC was more common in this age group (81.25%) while the least cases of VBAC were in the age group of 36-40 years(0%).

Among patients who delivered vaginally, only 4 (6.25 %) patients were in 31-35 years age group and none was in the age group of 36-40, while among patients who delivered by repeat caesarean section, 7 (19.44%)were in 31-35 years age group and 4(11.11%) were in 36-40 years age group.

TABLE 2. PARITY AND OUTCOME OF PREGNANCY

Parity	Total cases	Planned VBAC		Unsuccessful TOLAC	
		No	%	No	%
1	47	23	48.94	24	51.06
2	46	35	76.09	11	23.91
3	7	06	85.71	01	14.29

The chi-square statistic is 8.8671 and the p value is .011 (the result is significant at p-value< .05)

In the present study rate of successful VBAC increases as the number of previous normal delivery increases . It is 48.94 % in para 1 patients as compared to 85.71% in para 3 patients**.**

TABLE 3. AUGMENTATION OF LABOR AND OUTCOME OF PREGNANCY

Method of Augmentation	Total cases	Planned VBAC		Unsuccessful TOLAC	
		No	%	No	%
Oxytocin drip	10	9	90	1	10
ARM	20	17	85	3	15
Both	2	2	100	0	00

The chi-square statistic is 0.1442 and p value is .704(the result is significant at p < .05).
In the present study, in 10 patients labor was augmented with oxytocin drip out of which 9 delivered vaginally and 1 underwent caesarean section, the indication being scar tenderness.
Of 20 patients in which labour was augmented by ARM(artificial rupture of membrane), 17 delivered vaginally.In 2 patients emergency LSCS was done for non progression of labour and for scar tenderness in 1 patient.

In 2 patients ARM and Oxytocin drip both were used and both delivered vaginally.
According to guidelines for TOLAC by ACOG, SOGC and RCOG, although augmentation is not contraindicated, it should be preceded by careful obstetric assessment, maternal counseling and by a consultant led decision.[1,2,3]

TABLE 4. BISHOP'S SCORE AND OUTCOME OF PREGNANCY

Bishop's score	Total cases	Planned VBAC		Unsuccessful TOLAC	
		No	%	No	%
≤6	43	15	34.88	28	65.12
>6	57	49	85.96	08	14.04

The chi-square statistic is 27.75 and p value is .00001(the result is significant at p < .05).

In our study, of 43 patients having Bishop's score ≤6 only 34.88% delivered vaginally

while, of 57 patients having > 6 bishop's score 85.96% had successful VBAC. Patients who had a Bishop's score >6 at the time of admission had more chances of having a successful vaginal delivery after the previous caesarean section.

Study by Vidyadhar et al also concluded that a higher bishop's score is always a promising predictor for successful VBAC.[4]

TABLE 5. INTERVAL BETWEEN PREVIOUS CAESAREAN DELIVERY AND PRESENT PREGNANCY AND OUTCOME OF PREGNANCY

Interval	Total cases	Planned VBAC		Unsuccessful TOLAC	
		No	%	No	%
≤18 months	16	5	31.25	11	68.75
>18 months	84	59	70.24	25	29.76

The chi-square statistic is 8.8671 and p value is .002904(the result is significant at p < .05).

In the present study, the rate of successful VBAC was 31.25% when the interdelivery interval was ≤18 months and 70.24% when the interdelivery interval was >18 months.

It coincides with a study by Bujold in which an interdelivery interval shorter than 18 months was associated with a significant increase of uterine rupture.[6] It is attributed to the reason that short interdelivery interval allows inadequate time for post-partum healing of the previous Caesarean scar.

TABLE 6. INDICATION OF PREVIOUS CS AND TRIAL OF LABOR OUTCOME

Indication of previous CS	Total cases	Planned VBAC	
		No.	%
Abnormal lie/presentation	16	10	62.50
Cord around neck	08	08	100.00
Fetal distress	22	18	81.82
Induction failure	02	00	00.00
Non Progress of labor	16	08	50.00
Oligohydramnios	20	12	60.00
PIH(pregnancy induced hypertension)	08	04	50.00
PROM(premature rupture of membrane)	06	02	33.33
Postdate	01	01	100.00
Twins	01	01	100.00

The most common indication of previous CS for which trial of labor was offered in present pregnancy was Fetal distress(22%) followed by oligohydramnios (20%), abnormal lie or presentation (16%) and NPOL (16%) each.

Out of patients offered Trial of labor after previous caesarean delivery, 8% had their previous CS for cord around neck and all of them delivered vaginally.

TABLE 7. REASONS FOR EMERGANCY LSCS IN PATIENTS OF UNSUCCESSFUL TOLAC

Reasons for unsuccessful TOLAC	No.	%
Scar tenderness	21	58.33
Fetal distress	06	16.67
Non progress of labor	09	25.00

In the present study, 36 out of 100 patients had an unsuccessful VBAC and were eventually subjected to an emergency repeat caesarean delivery. The most common cause of unsuccessful VBAC was scar tenderness (58.33%) followed by non progress of labor (25%) and fetal distress (16.67%).

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TABLE 8. INTRAPARTUM AND POSTPARTUM MATERNAL COMPLICATION

Complication	Total	Planned VBAC	Unsuccessful TOLAC
		No	No
Wound infection/Disruption	5	2	3
Febrile morbidity	5	3	2
PPH 1.Uterine packing 2.CS hysterectomy	1 1 0	0 0 0	1 1 0
Blood products transfusion	5	2	3
Post Spinal headache	4	0	4
Breastfeeding problems	10	4	6

Some patients of successful VBAC and emergency repeat CS had more than one complication existing together (eg. PPH and blood products transfusion, wound infection and febrile morbidity). These patients were therefore included in more than one category.

TABLE 9. RELATION BETWEEN BIRTH WEIGHT AND MODE SUCCESS OF TOLAC

Birth weight(kg)	Total cases	Planned VBAC		Unsuccessful TOLAC	
		No.	%	No.	%
≤2.5	51	41	80.39	10	19.61
2.6-3	39	21	53.85	18	46.15
3.1-3.5	09	02	22.22	07	77.78
3.6-4	01	00	00.00	01	100.00

In the present study, it was observed that the rate of successful TOLAC decreased with the progressive increase in the birth weight of babies. It was 80.39% in the group of ≤2.5 kg birth weight compared to 22.22% in the group of 3.1-3.5 kg birth weight. In other words, babies with lower birth weight were more likely to be delivered by successful vaginal delivery in patients given TOLAC.

Study by Jastrow N et al concluded that Birth weight and specifically macrosomia are linked with failed trial of labor, uterine rupture, shoulder dystocia, and third- and fourth-degree perineal laceration in women who underwent prior cesarean delivery. Estimated fetal weight should be included in the decision-making process for all women contemplating a trial of labor after cesarean delivery.[5]

V. DISCUSSION-

- In present study, 100 patients with previous single transverse lower uterine segment caesarean section willing for VBAC were studied.
- The rate of successful VBAC at our institute was 64%. 36%cases underwent emergency repeat caesarean delivery.
- Maximum number of patients who have Successful VBAC were in the age group of 26-30 years which is the peak child bearing age group. In the present study, there was an increase in the rate of caesarean section with increase in the maternal age. The reasons for this clinically important increased risk are unclear, but may be due to physician and patient concern over pregnancy outcome in older women.

-augmentation of labour with ARM and oxytocin drip is not contraindicated but it should be preceded by careful obstetric assessment, maternal counseling and by a consultant led decision, statistically there is no significant difference between ARM and oxytocin drip as mode of augmentation(p value is .704,significant at <.05).

-In present study the rate of successful VBAC increases as the number of previous normal deliveries increases which may be due to favourable physiological changes as parity increases. It was 48.94 % in para 1 patients as compared to 85.71% in para 3 patients.

-In our study 85.96% of patients having bishop's score >6 had planned VBAC and 65.12% patients having bishop's score ≤6 had unsuccessful TOLAC.statistically chances of successful VBAC is higher among patients with higher bishop's score(p value is .00001,significant at <.05)..

-In the present study, the rate of successful VBAC was 31.25% when the interdelivery interval was ≤18 months and 70.24% when the interdelivery interval was >18 months.statistically chances of successful VBAC increases when interdelivery interval is >18months(p value is .002904,significant at <.05)..

- Overall rate of intrapartum and postpartum complications was lower in the group of successful VBAC when compared to the patients that underwent an emergency caesarean section. This was mainly in the form of wound infection, postspinal headache and breast feeding problems which was mainly due to operative interventions.
- Among all the patients that underwent a successful VBAC, 22% had fetal distress, 20% had Oligohydramnios, 16% had Abnormal lie/presentation and 16% had Non Progress of labor each as the indication of previous CS.
- The rate of successful VBAC decreased with the progressive increase in the birth weight. It was 80.39% in the group of ≤2.5 kg birth weight compared to 22.22% in the group of 3.1-3.5 kg birth weight.

VI. CONCLUSION-

In present study, the factors which affect success of trial of labor in patients with previous one caesarean section are age of the patient,parity, previous history of vaginal delivery,interdelivery interval,indication of previous cesarean section, Bishop's score on admission and weight of the baby.In present study, Successful VBAC is associated with fewer complications, faster recovery , less hospital stay and less expenses. Maternal morbidities and difficulty in breastfeeding problems were less associated with patients undergone for TOLAC. Hence in carefully selected patients with previous one caesarean section, successful VBAC is associated with better outcomes when trial of labor is carried out under proper supervision at any time which also decreases maternal morbidities and delivery expenditure , especially in low resources settings. In developing countries like India it means a lot for patients at individual and family level and for the healthcare system as a whole .

REFERENCES-

[1]. Royal College of Obstetricians and Gynaecologists, Birth after Previous Caesarean Birth, Green-top Guideline No. 45, 2015.
[2]. Committee on Practice Bulletins-Obstetrics. Practice Bulletin No. 184: Vaginal Birth After Cesarean Delivery. Obstet Gynecol. 2017 Nov. 130 (5):e217-e233.
[3]. Society of Obstetricians and Gynaecologists of Canada: SOGC clinical practice guidelines. Guidelines for vaginal birth after previous caesarean birth. Number 155 (replaces guideline Number 147), February 2005. Int J Gynaecol Obstet 89(3):319, 2005
[4]. Bangal, V., Gavhane, S., Yadav, V., Aher, K., & Bhavsar, D. (2017). Vaginal birth after caesarean section: why and how?. International Journal of Reproduction, Contraception, Obstetrics and Gynecology, 6(12), 5554-5558.
[5]. Jastrow N, Roberge S, Gauthier RJ, Laroche L, Duperron L, Brassard N, Bujold E. Effect of birth weight on adverse obstetric outcomes in vaginal birth after cesarean delivery. Obstet Gynecol. 2010 Feb;115(2 Pt 1):338-43. doi:10.1097/AOG.0b013e3181c915da. PubMed PMID: 20093908.
[6]. Bujold E, Gauthier RJ. Risk of uterine rupture associated with an interdelivery interval between 18 and 24 months. Obstet Gynecol. 2010May;115(5):1003-6. doi: 10.1097/AOG.0b013e3181d992fb. PubMed PMID: 20410775.
[7]. https://www.acog.org/clinical/clinical-guidance/practice-bulletin/articles/2019/02/vaginal-birth-after-cesarean-delivery