original article

Obstetric factors for unsuccessful trial of labor in second-order birth following previous cesarean

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BACKGROUND AND OBJECTIVES: The trial of labor after previous cesarean (TOLAC) is an important strategy to limit repeat cesarean sections and their complications. An unsuccessful TOLAC leads to maternal and neonatal morbidities. The success or failure of TOLAC after the first cesarean is determinant for the subsequent vaginal birth. Limited studies are available from low-income countries, exclusively conducted in women in their second-order birth following the first cesarean section. This study aims at determining the frequency of unsuccessful attempts at vaginal delivery in the second-order term (37-41+6/7 weeks) birth among women with previous cesarean sections and to describe maternal and obstetric factors for unsuccessful laborTOLACs in the same group.
DESIGN AND SETTINGS: A cross-sectional study conducted from April to December 2010 at Obstetrics & Gynaecology Unit II, Civil Hospital Karachi.
PATIENTS AND METHODS: All eligible patients at term pregnancy in their second-order birth were included. The frequency of unsuccessful attempts at vaginal birth was determined, followed by secondary analysis by calculating odds ratio for maternal and obstetric factors, that is, body mass index (BMI), hight, gestation ≥40 weeks, interdelivery interval, engagement of head in 5th, estimated fetal weight, ruptured membranes, duration of labor ≥7 hours, augmentation of labor, cervical dilatation <4 cm, and vertex station -2 or higher on admission.
RESULTS: Out of 122 study subjects, the proportion of unsuccessful vaginal birth after cesarean (VBAC) was 27.9% (n=34). Among maternal and obstetric factors, BMI >25 (AOR, 5.00), gestation ≥40 weeks (AOR, 5.45), cervical dilatation <4 cm (AOR, 5.90), and station of vertex -2 or higher (AOR, 3.83) had highly significant adjusted odds for failed TOLAC.
CONCLUSION: With a well-defined protocol, the rates of unsuccessful attempts at VBAC are not high for the second-order birth. The risk of failure can be anticipated by factors such as BMI >25, pregnancy duration ≥40 weeks, cervical dilatation <4 cm, and vertex station -2 or higher on admission.

Repeat cesarean deliveries are associated with complications of cesarean section (CS) and predisposition to morbidity resulting from placenta previa, morbidly adherent placenta, complicated surgeries, uterine rupture, bladder injury.[1] Increased cumulative hysterectomy rates are reported with elective repeat cesarean deliveries.[2] A World Health Organization survey in Latin America identified that women with singleton cephalic pregnancy with a prior CS despite of their smaller pool were the greatest contributors to the overall CS rate.[3] Among the strategies to limit CSs, offering a trial of labor in the selected women with previous 1 cesarean is a standard obstetric practice.[4] The successful trial of labor after cesarean (TOLAC) leading to vaginal birth after cesarean (VBAC) section results in decreased maternal morbidity in terms of blood transfusion, hysterectomy, and febrile morbidity as compared to repeat elective cesarean.[4] Unsuccessful attempts at TOLAC are linked with the above-mentioned maternal morbidities, uterine rupture, postpartum hemorrhage, and fetal and major neonatal morbidities.[4,5] The success rates of attempts at TOLAC leading to VBAC are 74% (ranging from 68%-77%)[4-6] Previous vaginal birth particularly previous VBAC are associated with

subsequent successful VBAC.[7,8] There are scored models available for the prediction of successful TOLAC, but none exists to reliably identify the risk of unsuccessful TOALC.[9] The factors associated with unsuccessful TOLAC are previous CS for dystocia, induced labors, and no previous vaginal births. Vaginal delivery at term (37-41+6/7 weeks) in the first pregnancy is the definitive evidence of adequate pelvic dimensions and favors chances of subsequent vaginal deliveries. Similarly, the success of trial of labor after the first cesarean is the determinant for chances of the subsequent vaginal birth resulting in the reduction of repeat cesarean and consequent morbidities. There is a dearth of studies conducted exclusively in women in their second-order birth following the first CS, as most studies examined TOLAC irrespective of the parity status.[7,10-12] TOLAC for second delivery is a much-needed option in developing countries to reduce the incurring cost of treatment and morbidities. Studies from Pakistan, irrespective of parity and birth order, demonstrated the failure rates of TOLAC ranging from 24%-35%.[13,14]

Tertiary care public sector hospitals in Pakistan, similar to other low income countries, face the challenge of late antenatal attenders as well as unbooked pregnant women presenting in labor. In the absence of complete prenatal medical record and limited information, decisions have to be made for selecting suitable candidates for TOLAC. Our study aims to describe the frequency as well as selected maternal and obstetric factors in women with the first attempted VBAC for their second delivery. The knowledge of selected factors in women with the failed attempt at first VBAC will enable better decision making for the planning mode of delivery and will help in counseling about anticipated chances of failure/success while attempting the trial of scar.

In this study, we aim to 1) determine the frequency of unsuccessful attempt at vaginal delivery in the second-order term (37-41+6/7 weeks) birth among women with previous CS and 2) to describe maternal and obstetric factors leading to the unsuccessful trial of labor after cesarean in the same group of women.

PATIENTS AND METHODS

The sample size estimation, using a frequency of failed VBAC 26% and margin of error 8% yielded sample size 116.[4,6] It was calculated using open epi version 2 (online available from *http://www.openepi.com/v37/Menu/OE_Menu.htm*). This cross-sectional study was conducted at Obstetrics and Gynaecology Unit II, Civil Hospital, Karachi. Civil Hospital Karachi is a tertiary care public sector hospital of Karachi. Karachi is considered Mini Pakistan as people belonging to different ethnicities of Pakistan reside here. TOLAC is routinely offered at our hospital to women meeting standard criteria for TOLAC.

According to the department protocol, the eligibility for the trial of TOLAC includes women with previous 1 lower segment CS for nonrecurrent cause (i.e., fetal distress, placenta previa, post-term pregnancy, failed induction, malpresentation, malposition) without severe medical disorders (i.e., severe hypertension, uncontrolled diabetes, or acute liver disorder), singleton pregnancy with cephalic presentation, clinically estimated fetal weight ≤3.5 kg, adequate pelvis on clinical assessment and in spontaneous labor in the absence of maternal or fetal compromise (e.g., antepartum hemorrhage, fetal distress before advanced labor i.e., <6 cm dilatation), and willingness to undergo the trial of scar. According to the department protocol, the decision for the augmentation of labor is taken by the consultant obstetrician.

All eligible patients meeting study inclusion criteria and willing to undergo TOLAC were enrolled. A total of 135 eligible patients were offered the trial of labor, and out of them 122 consented.

Inclusion criteria

Second parous women (previous cesarean birth), with singleton pregnancy and cephalic presentation at 37 to 41+6/7 weeks of pregnancy presenting with the spontaneous onset of labor, enrolled after taking informed consent.

Exclusion criteria

Women with upper segment cesarean, myomectomy, placenta previa, prelabor rupture of membranes, severe medical disorders, intrauterine growth restriction, estimated fetal weight >3.5 kg, post-term pregnancy i.e., ≥42 weeks.

Operational definitions

TOLAC is referred to as attempt at vaginal delivery in women with previous CS. Successful TOLAC was defined as spontaneous or instrumental (assisted by vacuum or forceps) delivery in a women undergoing TOLAC. Unsuccessful TOLAC is defined as failure to achieve VBAC in women undergoing TOLAC resulting in emergency CS. Augmentation of labor was defined as the use of oxytocin infusion to achieve 4 to 5 uterine contractions, each lasting for 45 to 60 seconds in 10 minutes. Active phase of labor was defined as the duration of labor from 4 cm cervical dilatation up to delivery.

After informed consent, semistuctured proforma

was used to record maternal and obstetric characteristics, i.e., age, hight, weight, body mass index (BMI), gestational age, age of last born, indication of previous cesarean, clinically estimated fetal weight, engagement of fetal head in fifths palpable abdominally, intrapartum features, i.e., ruptured membranes, cervical dilatation on admission, duration of labor, labor augmentation (oxytocin infusion), mode of delivery, birth outcome, neonatal intensive care admission, APGAR score at 1 and 5 minutes of birth. The duration of labor included active labor, i.e., from 4 cm dilatation till delivery. For women admitted at dilatation >4 cm, the total duration was estimated after recognizing the onset of active phase; from the history of regular painful and increasingly intense contractions. Data was entered into computer using SPSS, version 16.

Descriptive statistics were calculated, followed by the secondary analysis of the suspected maternal and obstetric factors of unsuccessful TOLAC. The comparison of mean BMI, gestational age, and cervical dilatation was done by significance testing using independent sample *t* test, taking significance level ≤0.05. The cross-tabulation was done for the proportions of unsuccessful and successful TOLAC. Binary logistic regression was used to estimate the odds ratio (OR with *P* value and 95% CI) as well as adjusted odds (with 95% confidence limits and P value) for maternal factors, i.e., hight <155 cm, BMI >25, gestation ≥40 weeks, and interdelivery interval. Similarly OR with 95% CI and adjusted odds with 95% confidence limits and *P* value were calculated for obstetric factors, i.e., fetal head >2/5 on per abdominal palpation, clinically estimated fetal weight >3 kg (3.1-3.5kg), ruptured membranes and cervical dilatation <4 cm and station of vertex –2 or higher on admission, duration of labor ≥7 hours, and augmentation of labor.

RESULTS

A total of 2377 women delivered during the study period. Out of these, 135 (5.6%) met the inclusion criteria and 122 (5.1%) consented for TOLAC. Out of 122, the unsuccessful TOALC proportion was 27.9% (n=34) whereas 72.1% (n=88) achieved vaginal delivery. Out of 88, 8 (9%) were instrumental (vacuum and foceps 4 each) deliveries. **Table 1** shows maternal sociodemographic and obstetric characteristics as well as peripartum features with birth outcomes. A total of 62.3% (n=76) women were booked and 37.7% (n=46) women were unbooked or referred. The mean age of patients was 26.68 (4.09), (95% CI 25.96, 27.4). Our data showed normal distribution (skewness 0.429). The mean gestational age was 38.20 (1.22), (95% CI

Table 1. Maternal age groups, BMI, obstetric features and birth outcomes.

Patient characteristics	n=122 (%)
Age	
<20	4 (3.3)
20-29	84 (68.9)
30-34	26 (21.3)
35-39	7 (5.7)
≥40	1 (0.8)
Body mass index	
<20	6 (4.9)
20<25	76 (62.3)
25<30	29 (23.8)
≥30	11 (9)
Estimated fetal weight (kg)	
2 < 2.5	3 (2.5)
2.5 < 3	98 (80.3)
3 ≤ 3.5	21 (17.2)
Station of presenting part	
Zero (0) or +	19 (15.47)
-1	32 (26.22)
-2	41 (33.60)
-3	30 (24.59)
Cervical dilatation on admission	
<4 cm	50 (41)
4<6 cm	45 (36.9)
6 < 8 cm	14 (11.5)
8<10 cm	5 (4.1)
10 cm (complete dilatation)	8 (6.6)
Duration of active labor	
<7 h	80 (65.6)
7<9	28 (23)
9<12	14 (11.47)
Birth outcomes	
Alive	121 (99.2)
Still births[a]	1 (0.8)
Neonatal deaths	0
NICU admissions	9 (7.43)
APGAR score <7 at 1 min	20 (16.39)

APGAR score <7 at 5 min	4 (3.27)
Birth weight	
2<2.5	12 (9.8)
2.5<3	46 (37.7)
3<3.5	54 (44.3)
3.5<4	9 (7.4)
≥4	1 (0.8)

BMI: Body mass index, NICU: neonatal intensive care unit admission, TOLAC: trial of labor after cesarean.

[a]Admitted with absent fetal cardiac activity,

37.98, 38.41). The mean age of the last born was 2.23 (0.88) 95% CI 0.157 (2.07, 2.38). The mean cervical dilatation was 4.48 (2.1) (4.09, 4.87). A total of 59.0% patients presented with cervical dilatation of ≥4 cm. Among 41% (n=50) with cervical dilatation <4 cm (mean 2.70 [0.74], 95% CI 2.49, 2.91), 52% achieved vaginal delivery. The mean duration of active labor was 6.05 (2.11), (95% CI 5.67, 6.43). Overall, 65.6% patients had the duration of active phase <7 hours; among those having failed attempt, 59.9% had active phase ≥7 hours. **Table 2** shows the subanalysis of successful and unsuccessful TOLAC and revealed significant difference in mean BMI, gestational age, and cervical dilatation on admission. The mean BMI, gestational age and the duration of active labor were higher and cervical dilatation was lesser in unsuccessful TOLAC.

In univariate analysis of maternal factors, BMI >25, gestation ≥40 weeks, and interdelivery interval <2 years had significant odds for unsuccessful TOALC (**Table 3**). Odds for BMI and gestation ≥40 weeks remained highly significant (P<.01) even after adjustment by logistic regression for other maternal factors, i.e., hight and interdelivery interval. Interdelivery interval <2 years also showed higher adjusted odds for unsuccessful TOLAC but was not significant. In univariate analysis, obstetric factors, i.e., fetal head >2/5 on per abdominal palpation, cervical dilatation <4 cm, station −2 or higher, and duration of active labor ≥7 hours had significantly high odds for unsuccessful TOLAC. (P≤.005). Odds for cervical dilatation and vertex station −2 or higher remained significant even after adjustment (P<.01).

DISCUSSION

In our study, unsuccessful TOLAC rates of 27.9% are consistent with overall failure rates reported irrespective of birth order[4,6] Failure rates in our group are close to but slightly higher than reported in a study from king Abdul Aziz hospital, Saudi Arabia, i.e., 24.7%, in a similar group of women who were compared to control group with previous vaginal birth.[15] However they did not report birth weight categories in their group. In our study group, the mean birth weight was 2.92 (0.35), 95% CI 0.063 (2.85, 2.98). The mean birth weight in Pakistani neonates, reported in a hospital-based study, is 2.9 kg.[16] Though odds for unsuccessful TOLAC were not statistically significant with the estimated fetal weight >3 kg, 20.6% (n=7) cases of unsuccessful TOLAC had birth weight >3.5 kg compared to 3.4% (n=3) cases of successful VBAC. Our finding is consistent with a large-scale current study on comparison of different birth weight categories in TOLAC, demonstrating higher failure rates for birth weight greater than 3500 g.[16]

In another multicenter study on 14 529 women undergoing TOLAC with previous 1 cesarean, the failure rates of only 13.4% were observed in women with the previous history of vaginal birth compared to 40% in women without such history.[11] Since our patients had no previous vaginal birth, the failure rate of 27.9% was explained by this difference in the past vaginal birth experience. Our failure rates were lower than those reported from a retrospective chart review by Durnwald and Mercer (34%)[17] conducted exclusively on 768 women with prior 1 cesarean delivering in their second pregnancy. It may be due to our criteria of estimated fetal weight (≤3.5 kg) considering norm for our population. Some studies reported higher odds for operative delivery in women with short stature.[18] We did not find significant odds for unsuccessful TOLAC with hight <155 cm (**Table 3**). Weight along with hight calculated as BMI demonstrated highly significant adjusted odds with BMI>25 (P=.009) for unsuccessful TOLAC. Juhasz also reported decreasing chances of successful TOLAC with increasing BMI.[19] Landon et al also reported a significantly lower success rate (68.4%) in obese (BMI≥30) than non-obese (76.9%) (P<.001).[11] Women >35 years are reported to be associated with increased risk for failed VBAC.20 We did not include maternal age in the analysis, as 94% (n=114) mothers were below 35 years of age.

Significantly high adjusted odds (5.39, 1.61, 18.09 P=.006) for unsuccessful TOLAC at gestation ≥40 weeks is consistent with findings from international studies. Coassolo reported 31.3% TOLAC failure at 40 weeks or beyond, against 22% in <40 weeks (OR 1.36 CI 1.24,1.50).[21] Similarly Smith et al in their study on TOLAC, in women at or beyond 40, reported increasing adjusted odds from 40 weeks up to

Table 2. Comparison of means for variables of maternal characteristics, labor and birth outcomes in patients with successful or unsuccessful TOLAC.

Variable	Successful TOLAC (n=88) Mean (SD) with 95% CI	Unsuccessful TOLAC (n=34) Mean (SD) with 95% CI	*P* value (95% confidence limits)[a]
Age	26.82 (4.28) (25.91, 27.73)	26.32 (3.56) (25.08, 27.57)	.551 (-1.14, 2.13)
BMI Mean (SD)	23.80 (3.03) (23.15, 24.44)	26.03 (3.70) (24.74, 27.32)	.001 (-3.93, -0.94)
Heights	156.87 (3.67) (156.09, 157.66)	157.42 (5.59) (155.48, 159.37)	.526 (-2.69, 1.39)
Weight	58.78 (7.83) (57.11, 60.45)	64.58 (10.55) (60.83, 68.32)	.001 (-9.37, -2.50)
Gestational age Mean (SD)	38.05 (1.17) (37.80, 38.29)	38.62 (1.28) (38.17, 39.06)	.020 (-1.05, -0.091)
Interdelivery interval (yr)	2.32 (0.87) (2.13, 2.50)	2.02 (0.89) (1.71, 2.34)	.105 (-0.06, 0.64)
Cervical dilatation (admission) Mean (SD)	5.011 (2.24) (4.53, 5.48)	3.11 (1.18) (2.70, 3.53)	<.001 (1.27, 2.51)
Duration of active labor	5.43 (1.96) (5.12, 5.95)	7.38 (1.89) (6.72, 8.04)	<.001(-2.61, -1.07)
Birth weight	2.89 (0.31) (2.82, 2.96)	3.02 (0.43) (2.87, 3.18)	.109 (-0.029, 0.030)
Mean APGAR at 1 min[b]	7.21 (0.80) (7.03, 7.08)	6.91 (0.933) (6.59, 7.24)	.087 (-0.043, 0.64)
APGAR at 5 min[b]	8.60 (0.82) (8.42, 8.77)	8.32 (0.76) (8.06, 8.59)	.097 (-0.051, 0.59)

SD: Standard deviation.

[a]*P* value calculated by independent sample *t* test. [b]Calculated for 121 live births.

Table 3. Logistic regression analysis for maternal and obstetric factors for unsuccessful trial of labor after cesarean.

Variables	Unsuccessful TOLAC n =34 (%)	Successful TOLAC n=88 (%)	Univariate analysis OR with 95% CI *P* value	Multivariate analysis AOR with CI and *P* value[a,b]
Maternal factors				
BMI >25	20 (58.82)	20 (22.7)	4.08 (1.75,9.4) *P*=.001	[a]5.008 (1.96,12.74) *P*=.001
Height <155 cm	7 (20.58)	12 (13.6)	1.6 (0.58, 4.60) *P*=.346	[a]1.49 (0.472, 4.70) *P*=.496
Gestational age ≥40	9 (26.47)	8 (9.0)	3.6 (1.25,10.31) *P*=.017	[a]5.45 (1.66,17.88) *P*=.005
Interdelivery interval <2 yr	20 (58.82)	31 (35.22)	2.5 (1.11, 5.61) *P*=.026	[a]2.14 (0.88, 5.16) *P*=.089
Obstetric factors[b]				
EFW >3 kg (3.1-3.5 kg)	7 (20.58)	14 (15.90)	1.37 (0.500, 3.75) *P*=0.540	[b]0.990 (0.28, 3.50) *P*=.988
Fetal head >2/5 palpable abdominally	24 (70.58)	42 (47.72)	2.62 (1.12, 6.13) *P*=.026	[b]2.19 (0.76, 6.34) *P*=.145
Cervical dilatation <4 cm	24 (70.58)	26 (29.54)	5.7 (2.40,13.63) *P*<.01	[b]5.90 (2.17, 15.98) *P*≤.001
Station - 2 or higher	28 (82.35)	43 (48.86)	4.88 (1.84,12.95) *P*=.01	[b]3.83 (1.26,11.62) *P*=.017
Ruptured membranes	7 (20.58)	18 (20.45)	1.00 (0.379, 2.68) *P*=.98	[b]0.690 (0.20, 2.30) *P*=.546
Duration of labor ≥7 hr	19 (55.88)	23 (26.13)	2.66 (1.56, 8.18) *P* =.05	[b]3.01 (0.95, 9.5) *P*=.61
Augmentation in labor	10 (29.41)	15 (17.04)	2.02 (0.80, 5.10) *P*=.134	[b]0.983 (0.33, 2.88) *P*=.975

TOLAC: Trial of labor after cesarean, BMI: body mass index, OR: odds ratio, AOR: adjusted odds ratio, EFW: estimated fetal weight..

[a]Adjusted odds ratio for maternal factors, i.e, height <155 cm, BMI >25, interdelivery interval < 2 yr, GA ≥40 wk.

[b]Adjusted Odds ratio for obstetric factors Estimated fetal weight > 3 kg, sation -2 and higher, head >2/5 palpable, cervical dilatation < 4 cm and ruptured membranes on admission, duration of labor ≥ 7 h, augmentation of labor.

42 weeks.[12] Another study on 4086 first-time laboring mothers showed increased risk of cesarean beyond 39 weeks gestation.[22] Our results showed even higher adjusted odds than the referenced studies.

Among obstetric factors, our results of significantly high (P<.001) adjusted odds for unsuccessful TOLAC with cervical dilatation <4 cm on admission have been consistent with similar findings obtained from the published reports.[4] Durnwald and Mercer reported increased chances of successful VBAC with cervical dilatation >1 cm.[23] This minimal dilatation criteria in referenced study has limited usefulness because of variable duration of latent phase (0- 4 cm cervical dilatation). A total of 59% patients presented with cervical dilatation of ≥ 4cm. Among 41% (n=50) with cervical dilatation <4 cm (mean cervical dilatation 2.70 [0.74], 95%CI 2.49, 2.91), 52% achieved vaginal delivery

Our results of higher adjusted odds [4.08 (1.42, 11.70) P=.009] for vertex station −2 or higher, reaffirm findings of Durnwald who reported station lower than −1 to be associated with the higher chance of successful VBAC. In our study group, none of the 19 women was with vertex station zero or below, and only 6 out of 31 women presenting with vertex station −1 (total 6 out of 50, with station −1 and below) had unsuccessful TOLAC.

The use of oxytocin for augmentation even after adjustment did not increase odds for failed VBAC, which is different from the higher risk reported in the published reports.[6]

In our study group, 67% patients had CS for dystocia, which is consistent with observation (i.e., 60%) by Lydon-Rochelle et al in their study of indications for repeat cesarean delivery.[24] Previous CS indication was dystocia in 27.0% (n=33) of women. Out of them 69.6% (n=23) achieved VBAC; this is an encouraging finding in contrast to other studies that cited previous dystocia as an unfavorable factor for VBAC.4 Neonatal admissions were significantly higher in unsuccessful TOLAC (OR 9.21[1.75, 48.27] (P=.009]), i.e., 17.6% (n=6) compared to successful TOLAC 3.4% (n=3). In unsuccessful TOLAC, 2 admissions were due to birth asphyxia, and 2 each for meconium aspiration and sepsis. In the successful TOLAC group, 1 admission each for the mentioned reasons was needed. Studies have reported increased risk of neonatal morbidities and hypoxic ischemic encephalopathy after unsuccessful TOLAC.[6,25]

A total of 4 CS were performed for the suspicion of impending rupture. Scar dehiscence was found in 1 case of failed VBAC; thus, the scar dehiscence rate was 0.8% and this risk was reported to be 0.2% to -0.7% in TOLAC[4,7] Impending rupture was found in another case of unsuccessful TOLAC and both these cases were without augmentation. Various studies have reported increased risk of uterine lesions (dehiscence and rupture) in augmented labors. A careful decision in the use of augmentation in TOLAC with spontaneous labor may prevent morbidity and the chance of unsuccessful TOLAC.

Our study demonstrates that the first attempt at the trial of scar following a cesarean, without prior vaginal birth experience, has an acceptable failure rate with a well-defined protocol. The limitation of our study is that we did not include cases in labor between 34 and 37 weeks' gestation at which there are good chances of fetal survival. The inclusion of these cases might have influenced VBAC rates and outcomes.

In conclusion, the frequency of unsuccessful TOLAC in second order, in women with spontaneous labor following previous cesarean birth, with a well-defined protocol, encompassing clinical pelvic assessment, estimated fetal weight ≤3.5 kg, and judicious use of augmentation, is not high compared to the overall failure rate (inclusive of previous vaginal birth experience). Thus, the absence of a previous vaginal birth experience should not preclude women with 1 previous cesarean, from the trial of labor. This strategy will help in reducing repeat cesareans with resultant morbidities.

The risk of unsuccessful TOLAC may be anticipated by the presence of BMI >25, gestation ≥40 weeks, vertex station −2 or higher, and cervical dilatation <4cm. The need for oxytocin for augmentation does not result in the higher chance of unsuccessful TOLAC. This anticipation should be utilized in counseling women when offering the trial of labor after cesarean, and making appropriate and timely decision in their labor.

Conflict of interest

I declare that there is no competing or potential interest involved in this study.

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