

Original Article

Analysis of Patients with Previous One Scar and their Outcome in Term of Successful TOLAC

Sadia Khan¹, Quratul Ain Imtiaz², Farhat Arshad³, Tahira Yasmeen⁴, Rizwana Chaudhri⁵

¹Assistant Professor, ²Medical Officer, ³APWMO, ⁴Senior Registrar, ⁵Professor, Gynae-unit-1, Holy Family hospital, Rawalpindi.

Correspondence: Dr. Sadia Khan

Assistant Professor

Gynae-unit-1, Holy Family hospital, Rawalpindi.

docsadiakhan@gmail.com

Abstract

Objective: To see the fetal and maternal outcome in all those pregnant patients with previous one cesarean, to determine the safe mode of delivery for them and to make future recommendations especially aiming to reduce the rising cesarean section rate.

Methodology: This is a retrospective cohort observational study from 1st January 2014 till 31st December 2018. Especially designed proforma was filled for all the patients with previous one scar admitted in our department of Holy Family Hospital, Rawalpindi. Variables e.g. condition of the patient at admission, detailed obstetrical history, the decision about mode of delivery, intra and postpartum complications and outcome (maternal and fetal) were collected.

Results: A total of 49,790 patients delivered during five years. Out of which, 6106 (12.21%) patients have previous one scar. Out of these 12.21% patients, 2441 (39.49%) patients were given a trial of labour after cesarean section. Successful VBAC occurred in 1972 (80%) of these patients and 469 (20%) had an emergency cesarean section. A total of 4122 (67.5%) patients were not given trial of scar and planned repeat cesarean section was decided for them. VBAC rate among all the patients with the previous one scar was 39.49%. Successful TOLAC rate among those given trial was 80.7%. Adverse outcome (fetal death or uterine rupture) calculated to be very low (6/6107) that is 0.0024%.

Conclusion: Women with previous cesarean sections comprise a high proportion of obstetrical admission. Trial of labour in selected patients in the obstetrical units of tertiary care hospitals is safe depending upon the available resources to monitor the labour along with emergency obstetrical theatre.

Key Words: TOLAC, VBAC, Cesarean section

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Introduction

The rate of cesarean section (CS) is rising worldwide.¹ Among the other factors, patients with previous one cesarean section having a repeat cesarean delivery contribute to the rising rate of CS. Repeat CS increases the morbidity as compared to planned trial of labour. In the developing countries, maternal mortality and morbidity are already significantly high as compared to developed part of the world. In Pakistan, although the maternal mortality rate has dropped during the last few decades but unfortunately the target given in MDG-5 couldn't be achieved.² The rising CS rates along with the related morbidity adds a further burden on the maternity units. The percentage of patients presenting with previous CS is significantly

rising in our maternity hospitals. It is important to mention that the incidence of morbid adherent placenta previa has peaked during the last decade and tertiary care hospitals of developing countries are unable to meet the requirements against the increasing population. For all these reasons it is vital to limit the rising CS rates.

The recommendation of WHO is to limit the CS rate up to 15%.³ Although the primary CS needs audit and unnecessary CS should be avoided. On the other hand, patients coming with previous one scar opting for repeat elective CS has increased significantly. Trial of labour after cesarean section (TOLAC) and vaginal birth after CS (VBAC) is the option offered to patients with previous

one CS in order to control the rise in rates of CS. TOLAC and successful VBAC is considered safe if supervised adequately in well-equipped maternity units.^{4,5}

TOLAC needs proper selection of patients to decide for the eligibility criteria first. Secondly, counselling of patient is very important along with weighing the benefits and risks ratio of TOLAC versus repeat planned cesarean section (RPCS).⁶ The most favourable factor that goes in favour of TOLAC is previous VBAC. Secondly those patients with previous vaginal birth are also good candidates for trial of labour(TOL). The indication of the previous section is another important factor to decide for the mode of deliver. The non-recurring indications like malpresentation could be given TOLAC. Similarly, patients with previous history of vaginal birth are good candidates for TOLAC. Body mass index (BMI) of patients less than 30 kg/m² is a good predictor for VBAC.⁷

Methodology

This is a retrospective cohort observational study from 1st January 2014 till 31st December 2018. Data was collected on especially designed proforma, of all the patients admitted with previous one scar in Gynae unit-1 of Holy Family Hospital, Rawalpindi.

Variables e.g. age, parity, body mass index, condition of the patient at admission (bishop score), detailed obstetrical history, decision about mode of delivery, intra and postpartum complications and outcome (maternal and fetal) were entered. Approval was taken from internal ethical review board.

Inclusion criteria: All women with previous one scar with singleton fetus and previous CS due to non-recurring cause (malpresentation, category-II CTG or fetal distress) at term were included

Exclusion criteria: All patients with more than two CS, those who didn't give consent, placenta previa, multiple pregnancies, oligohydramnios, growth restricted fetus, surgical history due to fibroid or midline uterine scar were excluded.

Operational definitions:

TOLAC: is referred to as planned attempt at vaginal delivery in women who has previously undergone a caesarean section and now wants vaginal delivery.

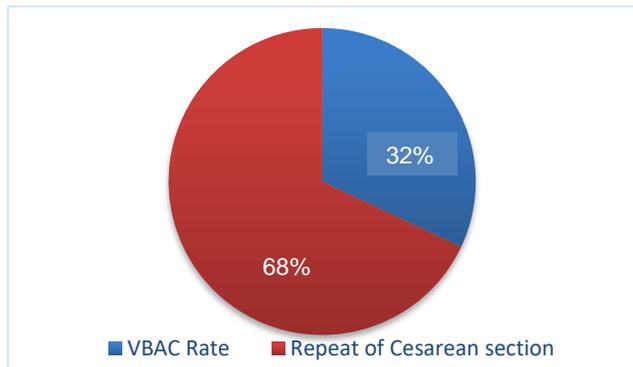
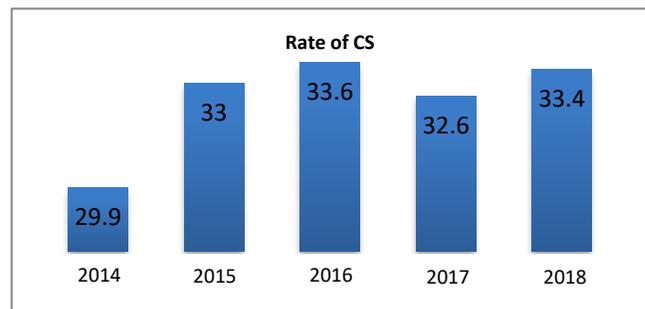
VBAC: "s successful" trial of labor resulting in a vaginal birth

Results

The rate of TOLAC in our study comes out to be very promising. Among the selected eligible patients its

80.79%. The probability of successful TOLAC was significantly high in patients less than 30 years of age with BMI of less than 24kg/m². Among other associated factors previous VBAC, previous vaginal birth and non-recurring cause of previous CS increases the likelihood of vaginal birth. Successful TOLAC rate among those given trial was 80.7%. Adverse outcome (fetal death or uterine rupture) calculated to be very low (6/6107) that is 0.0024%.

Percentage of Patients with previous one CS: Trial given or not given	
Total Number of deliveries	(49790)
Previous one scar	(6106) 12.26%
Trial of Labour	
Trial Given	(2441)39.98%
Outcome	
Successful TOLAC	(1972)80.79%
Emergency Cesarean Section	(469) 19.21%
Elective Repeat Cesarean Section	



Outcome of patients with previous one scar

Factors predicting the outcome of TOLAC		
Factors	% of Patient	Successful TOLAC
Previous VBAC	25%	22%
Previous vaginal delivery	15%	11%
Previous CS indication (non-recurring cause)	65%	51%
BMI less than 24kg/m ²	72 %	65%
Age of patient less than 30	80%	72%
Cervical dilatation more than 4	66%	60%

Discussion

In respect to rising caesarean section rate, VBAC should be preferred mode of delivery in selected group of patients as it is associated with shorter length of hospital stay, decrease morbidity e.g. wound infection and thromboembolism due to early mobilization.⁸ VBAC is good option for the Pakistani population where families want to have more children and even the inter pregnancy interval is also less. Failed VBAC has its own implication, therefore the stress should be at the appropriate selection of a patient for TOLAC with detailed counselling.⁹

The CS rate in our study is 32% during the five years which is high as compared to WHO recommendations. But national and international literature suggests the similar increase rates of CS in many parts of the world.¹⁰

The repeat planned CS for all those patients with one scar also contributes in the rise in CS rate. The research done in Shifa College of Medicine, Pakistan in 2016 showed the similar results. H Tasleem and co-author also stressed that proper selection of patients should be emphasized while considering TOLAC to achieve successful VBAC in order to control the rising CS rate. The results of above mentioned research also showed that although early decisions were made for operative delivery in patients of TOLAC because of more use of CTG and less use of instrumental delivery.¹¹

The most important factor associated with successful vaginal birth in our study comes out to be previous "VBAC" in all patients going for TOLAC. This group of patients are more counselled as compared to those who never had a vaginal birth. The results of our study are at par with the study done in Abbottabad in 2016. They also looked into the factors that lead to a successful outcome after TOLAC. The conclusion was that antenatal counselling of patients is important and with proper monitoring, the trial of scar is safe in the selected group.¹²

The factors associated with unsuccessful TOLAC have been discussed in the published literature. Siddiqui SA has published the results focusing on the factors that led to repeat CS. The author emphasized that anticipate unsuccessful TOLAC in obese patients, postdate pregnancy, bishop score of less than 3, previous CS due to labour dystocia. In this study the % of failed TOLAC is 27% which is comparable to our data. We have also observed that similar factors resulted in emergency CS in our group of patients.¹³

The literature review showed that many studies have been published from our neighbouring country, India with comparable results. Patel MD and co-authors recommended that timely and complete information should be given to all the patients with previous CS before deciding for the mode of delivery. In their study, they compared the two prediction models to predict the success of TOLAC along with maternal and neonatal safe outcome. They concluded that decision for TOLAC need to be individualized according to patient's demographic features and past obstetric history.¹⁴

The literature review showed that the international study published in BJOG in 2014 also looked for the factors that predict safe outcome after TOLAC. The authors also emphasized that "previous VBAC" is most important factor in predicting the success of TOLAC as shown in our study. Literature supports that TOLAC is safe option in many patients after proper counselling of patient and along with monitoring of labour.^{15,6}

Literature review showed that many studies done at internationally also looked for favourable and non-favourable factors for successful TOLAC. Demographic features like age of patients, BMI, parity have been correlated with the probability towards the VBAC.¹⁶

These studies also focused on indication of previous CS e.g. either due to labour dystocia or relative cephalopelvic disproportion along with assessment of bishop score and macrosomia in current pregnancy to assess the probability of successful outcome in their study. Similar results were shown in our study. We followed the defined protocol for selection of patients for TOLAC.¹⁷

The limitation of our study is that we didn't looked for the influence of following co-morbidities like diabetes, hypertension and excessive weight gain during pregnancy on the likelihood of vaginal birth. The meta-analysis of observational studies published in 2019 compared the following like age, BMI, obesity, smoking, race, medical problems, inter-pregnancy interval and past obstetric history with success to TOLAC. This meta-analysis also considered TOLAC as safe option for the selected population. The data clearly shows that there is decreased likelihood of successful vaginal birth with advancing maternal age (above 40 years), BMI (of more than 30), diabetes and hypertension.^{18,19}

The literature search shows that research published from New Zealand in 2018 looked the success of TOLAC with the weight gained during pregnancy. Excessive

weight gain has the negative impact on the vaginal delivery process and led to failed TOLAC.²⁰

In our study, we observed that all those females who reported with spontaneous labour with bishop score of more than 4 had successful outcome. The comparable results have been shared by Beloosesky R and et al. in their study they assessed the cervical length (CL) on trans vaginal ultrasound at 36 weeks to assess the probability of vaginal birth and concluded that short CL is favourable for vaginal birth.²¹

The literature search from different database showed that gestation age, estimated weight of fetus, engagement of presenting part and bishop score at time of admission have been co-related to success of TOLAC. The method of induction and epidural use have been looked at as well. The results of our study show the limitation as they lack few of above-mentioned parameters.¹⁸

The national and international literature search showed that rate of TOLAC is decreasing worldwide but still considered as a safe option than repeat CS.²²

Failed TOLAC also increases maternal and fetal complications thus proper selection and communication with patient is necessary under the defined protocols.

Conclusion

Women with previous cesarean section comprise a high proportion of obstetrical admission. Trial of labour in selected patients in the obstetrical units of tertiary care hospitals is safe depending upon the available resources to monitor the labour along with emergency obstetrical theatre.

Recommendation: Limiting primary cesarean rate is important to reduce the maternal mortality and morbidity in all the pregnant patients.

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